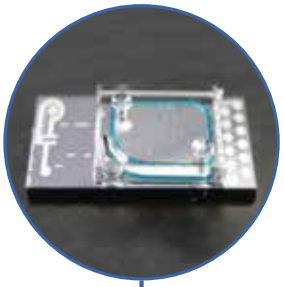


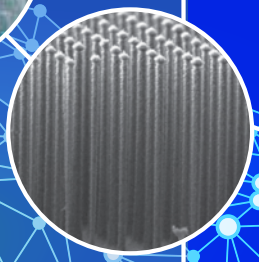
www.mne2019.org

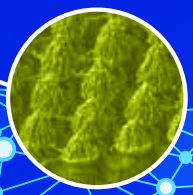
MNE 2019

45th International Conference on Micro & Nano Engineering

GOING NANO IN HOMER'S LAND

- Advanced Patterning
- Nanofabrication for functionality
- Nanodevices-MEMS
- Lab-on-a-chip





23-26 September 2019

RODOS PALACE HOTEL

Rhodes

Greece

Homer goes nano: e-beam lithography of the Odyssey

FINAL PROGRAM

70TH ANNIVERSARY

JEOL
Solutions for Innovation

Evolving in the 70TH YEAR

70 years since our founding in 1949.
Starting with the development of the electron microscope,
we at JEOL have continued to create unrivaled, world-leading technology.

Based on this core technology, we have developed a variety of scientific and metrology instruments, as well as industrial and medical equipments.

In 2019, the phrase adopted as a new key concept for guiding company is "Evolving in the 70th Year". Based on the spirit of our founding philosophy, "Creativity" and "Research and Development", we will continue to pursue world-leading technology.

45th International Conference on Micro & Nano Engineering

Table of Contents

Welcome Address

We welcome you to the Micro and Nano Engineering (MNE) 2019 and in Rhodes, Greece! It will be the 45th Conference in a series that started in Cambridge in 1975, and was held most recently in Vienna (2016), Braga (2017) and Copenhagen (2018). MNE is the core international conference focusing on: a) micro/nanofabrication and manufacturing techniques, and b) application of the fabricated micro/nanostructures, devices and microsystems into electronics, photonics, energy, environment, chemistry and the life sciences.

This year we have chosen a 3-day conference format that includes 4 parallel sessions A, B, C, D, corresponding to the 4 thematic areas of MNE2019: One parallel session (A) is dedicated to Nanopatterning, a second (B) is dedicated to Nanofabrication and Functional Nanostructured Surfaces, a third (C) is focusing on Nanoelectronic and other devices, Sensors, and Microsystems, and a forth (D) is focusing on Lab on a Chip with applications in Life Sciences, Chemistry, Food and Environmental safety.

The program features 10 outstanding Plenary talks including two presentations from the Award Winning MNE2019 fellow and Young Investigator, 13 presentations from world-leading Invited speakers, oral and poster presentations (evaluated by an exceptional International Program Committee), an ancient Greek Music artist and scholar, and a Nanotechnology artist. More specifically, the conference program comprises 174 oral and 367 poster presentations (including the plenary and invited presentations). The distribution among the MNE thematic areas reflects the main interests of our community and the long-term evolution of the field. The thematic area Advanced Nanopatterning represents 21% of all submissions, Nanofabrication for functionality 23%, Nanodevices-MEMS and applications 34%, and Nanofabrication for life science applications 22%.

MNE poster papers have equal weight to oral presentations. The MNE Committees encourage authors to submit papers (regular, accelerated publications, reviews or news and opinions) to 4 open thematically focused issues of Microelectronic Engineering (MEE by Elsevier) related to the conference topics.

The conference includes several awards, including the MNE fellow and the Young Investigator Award (Thursday morning), the micrograph contest, and the best poster awards per topic to be presented during the Gala dinner.

In addition, MNE 2019 offers exciting Tutorials on the fundamentals of Wetting, Nanogenerators, and Innovation Management, designed for scientists, professionals, company engineers, entrepreneurs and graduate students.

Finally, MNE 2019 hosts 34 exhibitors and is grateful to numerous sponsors which we sincerely acknowledge as the conference is made possible through their strong support.

Returning to Greece after 11 years, the conference takes place in a majestic island, Rhodes, one of the most popular destinations in Greece, with long multicultural history and rich natural environment. We have implemented a rich social program including welcome reception, visit and Homer singing performance in the Knights Palace on Monday, Beach Party on Tuesday, Gala dinner on Wednesday featuring art and nanotechnology, and Excursion to Lindos on Thursday.

We warmly thank the numerous authors, delegates, exhibitors and sponsors, program and session chairs, members of the international program committee, guest editors for the Microelectronic Engineering special issues, our students and staff participating, for promising to make this conference a memorable event.

We hope that you will enjoy the conference and have some time to spend with friends and enjoy yourself. We want to thank all of you for coming, and express our thanks and appreciation for the many exhibitors and sponsors that have helped make all this happen.

Καλώς ήλθατε!

On behalf of the MNE2019 Organizing Committee

Evangelos Gogolides
Conference Chair

Angeliki Tserepi
Program Chair

Committees

MNE 2019 LOCAL ORGANIZING COMMITTEE

Evangelos Gogolides
Conference Chair

Angeliki Tserepi
Program Chair

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Lithography / Etching

Panagiotis Argitis
Vassilios Constantoudis
Nikos Kehagias
George Kokkoris

Nanofabrication

Eleni Makarona
Nikos Papanikolaou
Vasilis Vamvakas
Kosmas Ellinas

Nanodevices / MEMS

Panagiotis Dimitrakis
Nikos Glezos
Pascal Normand
Christos Tsamis
Dimitris Tsoukalas

Life Sciences Devices

Panagiota Petrou
Kostas Misiakos
Katerina Tsougeni

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Ioannis Raptis
Kosmas Ellinas

Educational Events

Konstantinos Giannakopoulos

Workshops

Nikos Vourdas

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Ioannis Zoubourtikoudis, *TEIK - **Greece***

CONFERENCE INFORMATION

MNE 2019 is organized around 4 main topics. Topic A (Advanced Nanopatterning (lithgraphy & etching), Topic B (Nanofabrication / Manufacturing for Functional Structures / Surfaces), Topic C (Micro-Nano Devices and Systems (MEMS/NEMS) for physical applications, electronics, photonics and energy), and topic D (Micro & Nano Devices and Systems for Life Sciences, Chemistry, and Agrofood Sectors).
MNE 2019 has attracted approximately 700 participants. The MNE Committees encourage authors to submit papers (regular, accelerated publications, reviews or news and opinions) to 4 open thematically focused issues of Microelectronic Engineering (MEE by Elsevier) related to the conference topics. MEE also sponsors the annual Young Investigator Award, which will be presented at the conference. MNE has two related conferences (EIPBN) in the USA, and (MNC) in Japan.

STRUCTURE

The MNE scientific program begins on Tuesday, September 24th, and ends in the afternoon of September 26th.
Prior to the Scientific Program, on Monday, September 23rd, there will be three Tutorials for those registered, followed by the Welcome Reception and Opening of the Conference and Exhibition, as well as a visit to the Old Town of Rhodes.
The Program features 4 parallel sessions, plenary talks, invited presentations, oral and poster presentations (evaluated by the International Program Committee), and a commercial exhibition. MNE poster papers have equal weight to oral presentations. Two Poster sessions (I, II) will be held respectively on the 24th and the 25th of September.

CONFERENCE VENUE

RODOS PALACE HOTEL
Iraklidon Avenue (Trianton), Ixia,
85100 Rhodes, Greece,
T: +30 22410 97222
www.rodos-palace.gr

REGISTRATION & HOSPITALITY DESK - OPENING HOURS

The Registration and the Hospitality Desk will be open the following hours:

Monday, 23rd September 2019	12:00 - 17:00
Tuesday, 24th September 2019	08:00 - 19:00
Wednesday, 25th September 2019	08:00 - 18:00
Thursday, 26th September 2019	08:00 - 18.00

Conference Information

ON SITE REGISTRATION FEES

Standard Attendees	€ 850
Student Attendees	€ 500
1 day registration *	€ 450
Accompanying persons	€ 285
Cost of 1 Ttutorial	€ 100
Cost of 2 Tutorials	€ 150

Registration Fees Include

- Admission to all technical sessions, poster exhibition and industry exhibition
- Conference Material
- Lunch breaks during the conference
- Coffee breaks during the conference
- Welcome reception
- Conference dinner

* 1 Day pass does not include Conference Dinner

Accompanying person's registration fee includes all social events
(Welcome reception, Conference dinner and Excursion to Lindos)

EXHIBITION

The MNE2019 Commercial Exhibition will commence on Monday, September 23rd, and will be open throughout all Conference days. The Commercial exhibition runs throughout the foyer of Jupiter Hall, Salon De Roses Hall and also the Atrium Lobby. The list of companies can be found in page 87.
Detailed information about the companies can be found on the mne2019 conference website by clicking on the logo of each company.
The list of companies can be found in page https://www.mne2019.org/confirmed-exhibitors
Detailed information about the companies can be found on the mne2019 conference website by clicking on the logo of each company.

MICROGRAPH CONTEST

A micrograph contest is organized by the MNE Organizing Committee. Winners will be awarded During the gala dinner. Participants are kindly asked to submit their micrograph until Wednesday at the following web page https://www.zyvexlabs.com/contests/2019-3/. You can vote for the best micrograph using the mobile application. The awards are sponsored by the Micro&Nano Society of Greece (http://micro-nano.gr/)

POSTER PRESENTATIONS

There are two poster sessions on Tuesday 24th and Wednesday 25th.
Each poster will be displayed during the whole conference from Tuesday 24th until morning of Thursday 26th.
The posters are grouped according to the thematic areas A, B, C, and D in the program. Each poster board will have a poster identification number. Please leave them on display and do not block them in order to provide a means for orientation for visitors of the poster session.
Posters will be placed on the panels with double sided tape to be supplied by the Congress Secretariat.
It is the Presenter's obligation to put up and also remove the poster from the panel. Posters left after the end of the congress will be destroyed. The Congress Secretariat bares no responsibility for posters left behind.

POSTER SESSION I Even Numbers

Please be at your Poster area, ready for a presentation on Tuesday, September 24th, 14:15 - 16:15

POSTER SESSION II Odd numbers

Please be at your Poster area, ready for a presentation on Wednesday, September 25th, 14:15 - 16:15

BEST POSTER AWARDS

The MNE conference gives much weight and importance to the poster session. Contributions selected for poster presentation do not have less scientific quality than contributions selected for oral presentation, but their contents are expected to be more suitable for communication in poster form. To highlight the importance of the poster session, awards are given to the best posters.
The posters will be evaluated per topic and four Best Poster Awards will be given out, one for each topic:

- Advanced Nanopatterning,
- Nanofabrication for functionality,
- Nanodevices - MEMS and their applications, and
- Lab-on-a-chip /Nanofabrication for life science applications.

The evaluation will be based on the assessment of the abstract reviewers and by the poster examination from the jury during the conference.
Winner announcement: The Best Poster Award Winners will be announced during the conference dinner on September 25th. Poster Awards are sponsored by Raith.

REHEARSAL AND PRESENTATION LOADING ROOM / TECHNICAL SECRETARIAT / SPEAKER'S READY ROOM

All speakers are advised to rehearse their presentations prior to presenting them so as to avoid technical difficulties. A Speaker's Ready room will be available for you opposite to the Congress Secretariat, equipped with all necessary audiovisual aids. You are advised to present your material to the Technical Secretariat at least 2 hours prior to your presentation.

PUBLICATION OF THE MNE2019 SPECIAL ISSUES

The MNE2019 Organizing Committee invites MNE2019 participants to submit papers to four (4) OPEN to all and FOCUSED THEMATICALLY special issues of Micro and Nano Engineering Journal (Gold open access mirror journal of Microelectronic Engineering, Elsevier) entitled:

- Nanopatterning 2019
- Nanofabrication 2019
- Devices-MEMS 2019
- Lab-on-Chip 2019

Please refer to the specific special issue to see the thematic areas and select the issue appropriate for you. Each special issue call is an 'open call'. This means that, while including selected papers presented at MNE2019, it is also open to other authors of the related scientific community.

Conference Information

Manuscript submission deadline: October 21st 2019

Your paper and associated supplementary information should comprise a complete, novel and full description of your work. Manuscripts of the special issue will be submitted and reviewed via the online Elsevier Editorial System (EES). At submission, you are presented with a choice between the MEE and MNE journals. You will then receive a confirmation letter on the choice you have made. You will also have a chance to change your choice at revision. To be part of MNE2019 special issues you need to choose MNE journal. Articles will then be processed and published with the standard Elsevier publishing timeline for each individual manuscript following acceptance. Accepted papers will be freely available on ScienceDirect as OPEN ACCESS papers WITHOUT any article processing charges. This is a SPECIAL agreement between MNE2019 conference and MNE journal.

If you choose MEE instead of MNE journal at submission, your manuscript will be treated as a regular paper and will no longer be part of MNE special Issues, although it will still be handled by the same guest editors with the same procedure. Accepted papers in MEE will be published under subscription model only.

SOCIAL EVENTS PROGRAM

WELCOME RECEPTION

The Conference Welcome Reception will take place on Monday, September 23rd, at 16:30 throughout all Exhibition Halls.

WELCOME VISIT TO THE OLD TOWN

Following the Welcome Reception, a Welcome visit to the Old Town of Rhodes and to the Knight's Palace, is a must. Within this medieval town you will be impressed by the Cultural welcome event: *The sound of Homer's singing*.

BEACH PARTY ON TUESDAY, SEPTEMBER 24th

The Organizing Committee will host a Beach Party on the Beach area in front of Rodos Palace.
Please contact the Congress Secretariat for further information.

GALA DINNER ON WEDNESDAY, SEPTEMBER 25th

The Conference Official Gala Dinner will be hosted at the SUPER DOME POOL BAR in Rodos Palace Hotel on Wednesday, September 25th, at 19:30.
Dress: informal

EXCURSION TO LINDOS ON THURSDAY, SEPTEMBER 26th

The buses will depart right after the end of the Scientific Program just outside the Reception Area of Rodos Palace Hotel.

Lindos is an archaeological site, a fishing village and a former municipality on the island of Rhodes. It lies on the east coast of the island. It is about 50 km south of the town of Rhodes and its fine beaches make it a popular tourist and holiday destination. Lindos is situated in a large bay and faces the fishing village and small resort of Charaki. Be fast to be able to see the sunset at Lindos. Please declare your participation in the event at the registration desk in order to arrange for the number of buses.

OFFICIAL LANGUAGE

English will be the official language of the Conference and no simultaneous translation will be provided.

CERTIFICATE OF ATTENDANCE

Certificates will be provided after the completion of the Scientific Program.

BADGE

Please wear your name badge at all times. Entrance to the Conference area will only be permitted to guests wearing their name badge.

CURRENCY

Greece's monetary unit is the Euro. No other currency is accepted and it is best to exchange dollars or other currency at a bank. The exchange rates are all the same throughout the country and you exchange money at a bank or official exchange shop where you will get the best running rates. Banks are open from 08:00 AM until 2:00 PM.

INSURANCE

We cannot accept responsibility for any personal loss, accidents or damages to participants and/or accompanying persons. Participants are strongly advised to obtain personal insurance to cover any eventuality that may occur during the Congress.

TRANSPORTATION

Rhodes is only a 40min flight from Athens International Airport. Rhodes International Airport, "Diagoras", is located, 15 km away (20min by taxi from the town center and the convention center. Public transportation is very well organized with frequent bus service. There are regular international flights as well as charter flights from most major cities worldwide.

WEATHER

Rhodes in September is still very pleasant and warm, although the temperatures are starting to cool down a bit. The average daily temperature is 25°C. September enjoys an average of 11 hours of sunshine per day.

PASSPORTS - VISAS

You will need valid, up-to-date passport and a Schengen visa, depending on your nationality. Regarding Schengen visa requirements, please visit the website of the Hellenic Ministry of Foreign Affairs at the following link: https:// www.mfa.gr/en/visas/visas-for-foreignerstraveling-togreece/countries-requiring-or-notrequiring-visa.html in order to find out whether you need a Schengen visa to visit Greece.

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Instructions to Presenters and Chairpersons

OPENING HOURS SPEAKERS' PREVIEW CENTER

Monday, 23rd September 2019	12:00 - 18:30
Tuesday, 24th September 2019	08:00 – 19:00
Wednesday, 25th September 2019	08:00 – 19:00
Thursday, 26th September 2019	08:00 - 17:00

IF YOU ARE A CHAIRPERSON

Please locate your session room in due time. Please be at your session room at least 15 minutes prior to the start of the session.
We may remind you that speakers need to strictly observe the time schedule. Before the session starts, please check that all presenters are present. Before each presentation, please introduce the presenter by stating his/her name and affiliation.

INSTRUCTIONS FOR ORAL PRESENTATIONS

- Plenary speakers have 35 minutes plus 5-10 minutes of questions
- Iinvited speakers have 25 minutes plus 5 minutes of questions
- Contributed talks have 15 minutes. This includes approximately 2-3 min for questions. Therefore, time your presentation to 12-13 minutes.

Please prepare your presentation with aspect ratio 16:9.

Computers ARE AVAILABLE at the conference rooms, with the following technical characteristics:
Hardware:
Processor: i3 or i5 4gen or 8gen, RAM 4-8 GB, Hard Disk: SSD 240GB TFT 15¨-17¨PC Remote Control
MAC: Retina, early 2015, i5 2,7GHz, RAM 8GBF or those having a Macintosh, a technician will help you to connect and use your laptop.
Software:
Windows 10, Office 365

Bring your presentation in a memory stick. You do NOT need to bring a laptop. If you do, you should go in the conference room and with the help of the technician see how to connect your laptop. Try it the previous day if possible.
Rehearsal and presentation loading room:
You are advised to try your presentation and load it with the help of the technicians in the computer room located at the Convention Pre Function Area of the Rodos Palace Hotel. Presentations should be loaded until the previous session, or as early as possible. Please allow enough time before your session, especially if you have videos in your presentation.

INSTRUCTIONS FOR POSTER PRESENTATIONS

Recommended Poster Size is 120 cm high x 80 cm wide. (The poster board is 200 cm x 95 cm).
Posters will be hanged using double sided tapes, to be supplied by the Congress Secretariat.

Even Poster Numbers: Poster Session time: Tuesday September 24th at 14:15 - 16:15
Odd Poster Numbers: Poster Session time: Wednesday September 25th at 14:15 - 16:15
Set up time: Monday 23/09 from 16:00 to 18:30 or Tuesday September 25th, from 08:30 to 13:00
Take down time: Thursday 26/9 from 12:00 until 16:00

Be in front of your poster session on the appropriate day based on your poster number shown in the conference program.

**Posters left on the poster boards after the take down time, will be removed by the conference personnel.*

Plenary Speakers

Tuesday, 24th September 2019
08:45-09:30 **Jupiter Hall**

Yan Borodovsky
Former Intel Senior Fellow, USA

Moore's Law - Past, Present and Future

Tuesday, 24th September 2019
09:30- 10:15 **Jupiter Hall**

Dimos Poulikakos
Head of Energy Science Center (ESC), ETH Zurich, Institut für Energietechnik, Switzerland

How to arrest and transport biological nano-objects one at a time: Nanovalving of individual Viruses and Macromolecules in liquids

Tuesday, 24th September 2019
16:15- 17:00 **Jupiter Hall**

Shoji Takeuchi
Tokyo University, Japan

Emerging Technologies for Biohybrid Devices

Tuesday, 24th September 2019
17:00- 17:45 **Jupiter Hall**

Fotis Filippopoulos
Curious Inc. and International Hellenic Univ., Greece

Innovation Mindset: The top 10 critical insights every technology entrepreneur should know

Plenary Speakers

Wednesday, 25th September 2019
08:45- 09:30 **Jupiter Hall**

Emmanuel Delamarche
IBM Research Zurich, Switzerland

Intelligent and precise flow control for next-generation microfluidic POC diagnostics

Wednesday, 25th September 2019
09:30- 10:15 **Jupiter Hall**

Michal Lipson
Eugene Higgins Professor,
Columbia University, USA

The Revolution of Silicon Photonics

Wednesday, 25th September 2019
16:15- 17:00 **Jupiter Hall**

Zhong Lin Wang
Hightower Chair, Georgia Tech, USA

Nanogenerators for self-powered systems and sensors

Plenary Speakers

Thursday, 26th September 2019

08:45- 09:30 **Jupiter Hall**

MNE Fellow 2019
Hella-Christin Scheer
University of Wuppertal, Germany

More than nanoimprint - replication and combination

Thursday, 26th September 2019

09:30- 10:00 **Jupiter Hall**

The MNE/MEE Elsevier Journal Young Investigator Award 2019
Yuksel Temiz
IBM Research-Zurich

The Young Investigator Award is sponsored by Elsevier for the Journals MNE (open access) and MEE (subscription journal)

Thursday, 26th September 2019

16:35- 17:20 **Jupiter Hall**

George Malliaras
Prince Philip Professor of Technology, University of Cambridge, UK

New Materials and Devices for Interfacing with the Brain

Invited Speakers

Monday, 23th September 2019

Chrēstos Terzēs, *Ancient Music Artist*

Reconstructing the sound of Homeric singing (Cultural welcome event to be presented at the Knight's palace)

Tuesday, 24th September 2019
10:45- 11:15, Jupiter Hall

Thomas Anthopoulos, *King Abdullah University of Science and Technology (KAUST) and KAUST Solar Centre, Saudi Arabia*

Flexible nano-electronics via large-area manufacturing paradigms

Tuesday, 24th September 2019
11:15- 11:45, Athena Hall

Nicolas Voelcker, *Monash University, Melbourne Center for Nanofabrication, Australia*

Nanomedicine with Silicon Nanostructures

Tuesday, 24th September 2019
13:00- 13:30, Delphi Hall

Alidad Amirfazli, *York University, Canada*

What can and cannot be done with Superhydrophobic, or Omniphobic surfaces?

Tuesday, 24th September 2019
13:30- 14:00, Nefeli Hall

Michal Danek, *Lam Research Corporation, USA*

Applications of Atomic Layer Deposition (ALD) and Atomic Layer Etch (ALE) in Advanced Semiconductor Manufacturing

Tuesday, 24th September 2019
18:00- 18:30, Jupiter Hall

Zheng Cui, *Suzhou Institute of Nanotechnology, Chinese Academy of Sciences, China*

Printed flexible electronics for wearable applications Semiconductor Manufacturing

Wednesday, 25th September 2019
10:45- 11:15, Delphi Hall

Constantine Megaridis, *University of Illinois, Chicago, United States*

Wettability-Patterned Surfaces for Pumpless Handling of Fluid Microvolumes: Lab-on-Chip and Heat Transfer Applications

Wednesday, 25th September 2019
11:30- 12:00, Nefeli Hall

Maria Farsari, *Foundation for Research & Technology Hellas, Greece*

Laser-based 3D printing at the nanoscale

Wednesday, 25th September 2019
11:30- 12:00, Athena Hall

Thomas Laurell, *Lund University, Sweden*

Acoustofluidics - A sound approach to liquid biopsies

Wednesday, 25th September 2019
13:00- 13:30, Delphi Hall

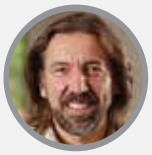
Tekla Tammelin, *VTT Technical Research Center, Finland*

Patterned Structures and Nanolaminate Hybrid Architectures from Plant-sourced Nanocellulose for Optoelectronics

Wednesday, 25th September 2019
13:30- 14:00, Athena Hall

José Antonio Plaza, *Instituto de Microelectrónica de Barcelona-CNM, Spain*

From Cells-on-Chip to Chips-in-Cell: our fantastic "voyage"



Wednesday, 25th September 2019

Ioannis Michaloudis, *Nanotechnology Artist*

" - Sky am": mythologies & methodologies of a nanoartist (to be presented during the conference dinner)

Thursday, 26th September 2019
10:30- 11:00, Jupiter Hall

Thomas Ernst, *CEA-LETI, Grenoble, France*

Merging Computing and Sensing for Low power and Sustainable Edge Applications

Thursday, 26th September 2019
11:00- 11:30, Delphi Hall

Martin Lopez, *International Iberian Nanotechnology Laboratory-INL, Portugal*

Biomimetics of photosynthetic photonic structures. How natural light harvesting could become an inspiration for nanotechnology

Thursday, 26th September 2019
11:15- 11:45, Athena Hall

Sunggook Park, *Louisiana State University, USA*

Design and Fabrication of Plastic Nanofluidic Devices for Single Molecule Detection

Thursday, 26th September 2019
12:45- 13:15, Nefeli Hall

John Maltabes, *Applied Materials, Germany*

The path to Roll to Roll Imprint Technology, an Enabling Technology

Rodos Palace Floor Plan

Scale Ratio 1:333

Program at a Glance

Monday, September 23rd, 2019

	NEFELI HALL A	NEFELI HALL B
08:30-08:45		
09:00-10:30	Tutorial 1	Tutorial 2
	Nanogenerators *Zhong Lin Wang*	Fundamentals of Wetting, Droplets and related Applications *Alidad Amirfazli*
10:30-10:45	Coffee break	
10:45-12:30	Nanogenerators *Zhong Lin Wang*	Fundamentals of Wetting, Droplets and related Applications *Alidad Amirfazli*
12:30-13:00		Light Lunch
		Tutorial 3
13:00-13:45		Innovation Management Masterclass *Fotis Filippopoulos*
13:45-14:00		Coffee break
14:00-16:00		Innovation Management Masterclass *Fotis Filippopoulos*
16:00-16:15	Registration	
16:30-18:15	Opening of Conference & Exhibition Welcome Reception	
18:30-18:45	Transport to the Old City	
19:00-19:30	Visit at the Knights Palace	
19:30-20:30		
20:45-21:30	Cultural Event: The sound of Homeric Singing	
22:00	Transport back to the Conference Venue	

Tuesday, September 24th, 2019

	NEFELI HALL	DELPHI	JUPITER HALL	ATHENA HALL
08:30-08:45	Opening Session			
08:45-09:30	Plenary 1 Moore's Law - Past, Present and Future *Yan Borodovsky*			
09:30-10:15	Plenary 2 How to arrest and transport biological nano-objects one at a time: Nanovalving of individual Viruses and Macromolecules in liquids *Dimos Poulikakos*			
10:15-10:45	Coffee break			
10:45 -12:00	Session A1: EUV and Talbot Lithography	Session B1: Nanostructured Surfaces	Session C1: Sensors & Actuators I	Session D1: Nanomedicine & Drug delivery
12:00-13:00	Lunch break			
13:00-14:15	Session A2: Etching	Session B2: Wetting I	Session C2: Sensors & Actuators II	Session D2: Biosensors I
14:15-16:15	POSTER SESSION I (EVEN NUMBERS)			
16:15-17:00	Plenary 3 Emerging Technologies for Biohybrid Devices *Takeuchi Shoji*			
17:00-17:45	Key-note on Innovation Innovation Mindset: the top 10 critical insights every technology entrepreneur should know *Fotis Filippopoulos*			
17:45-18:00	Short Break			
18:00-19:00	Session A3: Modeling & Metrology	Session B3: Nanofabrication & Nanodevices	Session C3: Flexible & Wearables	Session D3: Cell & Organ -on-chip I

45th International Conference on Micro & Nano Engineering

23-26 September 2019 Rhodes, Greece

Program at a Glance

Wednesday, September 25th, 2019

	NEFELI HALL	DELPHI	JUPITER HALL	ATHENA HALL
08:30				
08:45-09:30	Plenary 4 Intelligent and precise flow control for next-generation microfluidic POC diagnostics *Emmanuel Delamarche*			
09:30-10:15	Plenary 5 The Revolution of Silicon Photonics *Michal Lipson*			
10:15-10:45	Coffee break			
10:45 -12:00	Session A4: EUV and Talbot Lithography	Session B4: Wetting II	Session C4: Physical Sensors	Session D4: Lab-on a chip Technologies
12:00-12:15	Lunch break			
12:15- 12:30				
12:30-12:45				
12:45-13:00				
13:00-14:15	Session A5: Industrial	Session B5: Industrial	Session C5: Energy harvesting Devices	Session D5: Cells & Organ-on-chip II
14:15-16:15	POSTER SESSION II (ODD NUMBERS)			
16:15 -17:00	Plenary 6 Nanogenerators for self-powered systems and sensors *Wang, Zhong Lin*			
17:00-18:15	Session A6: NIL & Novel Lithographies	Session B6: Nanofab for Bioapplications	Session C6: Photonic Structures	Session D6: Industrial
18:15-19:30				
19:30-22:00	Gala dinner			

Thursday, September 26th, 2019

	NEFELI HALL	DELPHI	JUPITER HALL	ATHENA HALL
08:30				
08:45-09:30	Plenary 7 MNE Fellow Award & Lecture *Hella-Christin Scheer*			
09:30-10:15	Young Investigator Award Invited Lecture *Yuksel Temiz* / Award Ceremony			
10:15-10:45	Coffee break			
10:45 -12:00	Session A7: Electron and Ion Beam Lithography	Session B7: Nanostructures for Photonics	Session C7: Materials & Devices for nanoelectronics	Session D7: Micro & Nano Fluidics
12:00-13:00	Lunch break			
13:00-14:00	Session A8: Industrial I	Session B8: Wetting III	Session C8: Materials for Nanoelectronics II	Session D8: Devices for DNA studies
14:00-14:15	Coffee break			
14:15-15:15	Session A9: Industrial II	Session B9: Nanofabrication	Session C9: Materials for photonics	Session D9: Lab & Organ on-chip
15:15-15:30	Short break			
15:30-16:30	Session A10: Resists	Session B10: Microfabrication	Session C10: Sensors & MEMS	Session D10: Chem. Sensors & Biosensors II
16:30-16:35	Short break			
16:35-17:20	Plenary 8 New Materials and Devices for Interfacing with the Brain *George Malliaras*			
17:20-17:30	Announcements & Closing Remarks			
17:30-21:00	Excursion to Lindos			

45th International Conference on MNE 2019

Scientific Program

Note:
Papers are listed by Topic and by session.
Short abstracts are available on the mobile application of the conference.

45th International Conference on MNE 2019

MONDAY SEPTEMBER 23RD, 2019

Scientific Program

	NEFELI HALL A	NEFELI HALL B
09:00-10:30	**Tutorial 1** **Nanogenerators** *Zhong Lin Wang* *Georgia Tech*	**Tutorial 2** **Fundamentals of Wetting, Droplets and related Applications** Alidad Amirfazli *York University*
10:30-10:45	**COFFEE BREAK**	
10:45-12:15	**Tutorial 1** **Nanogenerators** Zhong Lin Wang *Georgia Tech*	**Tutorial 2** **Fundamentals of Wetting, Droplets and related Applications** Alidad Amirfazli *York University*
12:15-12:45	**LIGHT LUNCH**	
13:00-13:45		**Tutorial 3** **Innovation Management Masterclass** Fotis Filippopoulos *Curious Inc. and International Hellenic Univ., Greece*
13:45-14:00	**COFFEE BREAK**	
14:00-16:00		**Tutorial 3** **Innovation Management Masterclass** Fotis Filippopoulos *Curious Inc. and International Hellenic Univ., Greece*
16:30-18:15	**OPENING OF CONFERENCE AND EXHIBITION** **WELCOME RECEPTION**	

Scientific Program

	JUPITER HALL
	Opening Session Chairs: V. Constantoudis, U. Staufer
08:45-09:30	**Plenary 1** **Moore's Law - Past, Present and Future** Yan Borodovsky *Former Intel Senior Fellow, USA*
09:30-10:15	**Plenary 2** **How to arrest and transport biological nano-objects one at a time: Nanovalving of individual Viruses and Macromolecules in liquids** Dimos Poulikakos *ETH Zurich, Institut für Energietechnik, Switzerland*
10:15-10:45	**COFFEE BREAK**

TUESDAY SEPTEMBER 24TH, 2019

Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A1: EUV AND TALBOT LITHOGRAPHY Chairs: J. Randal, C. Mack	**SESSION B1: NANOSTRUCTURED SURFACES** Chairs: E. Makarona, G. Iordache	**SESSION C1: SENSORS & ACTUATORS I** Chairs: Z. Cui, I. Raptis	**SESSION D1: NANOMEDICINE & DRUG DELIVERY** Chairs: A. Gerardino, JA Plaza
10:45	**A1-1** **Extreme ultraviolet interference lithography for in-lab photoresist development and large-area nanopatterning** Sascha Brose[1,2], Serhiy Danylyuk[1,2], Christian Kaiser[3], Maik Gerngroß[3], Jochen Stollenwerk[1,2,4], Matthias Schirmer[3], Peter Loosen[1,2,4] *[1]RWTH Aachen University, Aachen, Germany, [2]JARA – Fundamentals of Future Information Technology, Jülich, Germany, [3]Allresist GmbH, Strausberg, Germany, [4]Fraunhofer Institute for Laser Technology, Aachen, Germany*	**B1-1** **UV-sensor made by capillary filling metal inks on prepatterned substrates** Helmut Schift[1], Ethouba Al Jassin-Al-Hashemi[1,2], Barbara Horváth[1], Sami Bolat[3] *[1]Paul Scherrer Institut (psi), Villigen Psi, Switzerland, [2]University of Basel, Basel, Switzerland, [3]Swiss Federal Laboratories for Materials Science and Technology (EMPA), Dübendorf, Switzerland*	**C1-1_ INV** **Flexible nano-electronics via large-area manufacturing paradigms** Thomas Anthopoulos *King Abdullah University of Science and Technology (KAUST) and KAUST Solar Centre, Saudi Arabia*	**D1-1** **Ultrasound-triggered PLGA-microPlates degradation for on-command drug delivery** Elisa Sciurti[1,2], Rosita Primavera[3], Martina Di Francesco[3], Daniele Di Mascolo[3], Alessandro Rizzo[1,2], Antonio Balena[1,2], Sanosh Kunjalukkal Padmanabhan[2], Francesco Rizzi[1], Paolo Decuzzi[3], Massimo De Vittorio[1,2] *[1]Center for Bio-Molecular Nanotechnologies, Istituto Italiano di Tecnologia , Arnesano, Italy, [2]Dipartimento di Ingegneria dell'Innovazione, Università del Salento, Lecce, Italy, [3]Laboratory of Nanotechnology for Precision Medicine, Istituto Italiano di Tecnologia, Genova, Italy*
11:00	**A1-2** **Fundamental Research Activities of Extreme Ultraviolet Lithography at NewSUBARU Synchrotron facility** Takeo Watanabe[1], Tetsuo Harada[1] *[1]University of Hyogo, Akou-gun, Japan*	**B1-2** **Direct Nanoimprinting of Colloidal Self-Organizing Nanowire/-particle Inks for Flexible, Transparent Electrodes** Lukas F. Engel[1], Johannes H. M. Maurer[1], Thomas Kister[1], Lola González-García[1], Tobias Kraus[1,2] *[1]INM - Leibniz Institute for New Materials, Saarbrücken, Germany, [2]Colloid and Interface Chemistry, Saarland University, Saarbrücken, Germany*		**D1-2** **Tumour spheroids formed in a caged space for drug and microfluidic based assays** Yong He[1], Boxin Huang[1], Elrade Rofaani[1], Jie Hu[1], Yuanhui Liu[1], Gabriele Pitingolo[1], Li Wang[2], Jian Shi[2], Carole Aime[1], Yong Chen[1] *[1]École Normale Supérieure-PSL Research University, Sorbonne Universités - UPMC Univ Paris 06, CNRS UMR 8640 PASTEUR, Paris, France, [2]MesoBioTech, Paris, France*

11:15	**A1-3** **Large-area resistless patterning on hydrogen-terminated Si using EUV lithography** Li-Ting Tseng[1], Dimitrios Kazazis[1], Procopios Constantinou[2], Taylor Stock[3], Neil Curson[3], Steven Schofield[2], Gabriel Aeppli[1,4,5], Yasin Ekinci[1] *[1]Paul Scherrer Institut, Villigen, Switzerland, [2]Department of Physics and Astronomy, University College London, London, United Kingdom, [3]London Centre for Nanotechnology, University College London, London, United Kingdom, [4]EPFL, Lausanne, Switzerland, [5]ETH Zurich, Zurich, Switzerland*	**B1-3** **Graphene on functional polymers – evaluation of stress and doping, and applications** Manuel Müller[1], Rukan Nasri[1,2], Fereshta Hafizi[1], Jon Polensky[1], Carmen Herrmann[2], Mirko Lohse[3], Manuel Thesen[3], Gabi Grützner[3], Irene Fernandez-Cuesta[1] *[1]University Of Hamburg, Institute for nanostructure and solidstate physics, Hamburg, Germany, [2]University of Hamburg, Department of Chemistry, Hamburg, Germany, [3]micro resist technology GmbH, Berlin, Germany*	**C1-2** **Optimized magnet configurations for Lorentz actuation of a µ-Coriolis mass flow sensor** Thomas Schut[1], Yannick Klein[1], Remco Wiegerink[1], Han Gardeniers[1], Joost Lötters[1,2] *[1]Uiversity Of Twente, Enschede, Netherlands, [2]Bronkhorst High-tech BV, Ruurlo, Netherlands*	**D1-3** **Fabrication and ex vivo retention study of biodegradable microcontainers for oral drug delivery** Zarmeena Abid[1,2], Mette Mosgaard[1,3], Giorgio Manfroni[1,2], Ritika Singh Petersen[1,2], Line Hagner Nielsen[1,3], Anette Müllertz[1,4], Anja Boisen[1,3], Stephan Sylvest Keller[1,2] *[1]The Danish National Research Foundation and Villum Foundation's Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics (IDUN), Kgs. Lyngby, Denmark, [2]National Centre for Nano Fabrication and Characterization, DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, Denmark, [3]Department of Health Technology, DTU Health Tech, Technical University of Denmark, Kgs. Lyngby, Denmark, [4]Department of Pharmacy, Faculty of Health and Medical Sciences, University of Copenhagen, 2100 Copenhagen, Denmark*

TUESDAY SEPTEMBER 24TH, 2019

Scientific Program

11:30	**A1-4** **Simulation and nanofabrication of complex EUV achromatic Talbot lithography masks for high-resolution and high-throughput patterning** Dimitrios Kazazis[1], Li-Ting Tseng[1], Yasin Ekinci[1] *[1]Paul Scherrer Institute, Villigen-PSI, Switzerland*	**B1-4** **Fabrication of A Low-Noise Interchangeable Platform for Nanostructured Transport Measurements in Fluidic, Cryogenic, and In Situ Electron Microscopy Environments** Jacob Swett[1], Ivan I. Kravchenko[2], Ondrej E. Dyck[2], Stephen Jesse[2], Jan A. Mol[1,3] *[1]University of Oxford, Oxford, United Kingdom, [2]Oak Ridge National Laboratory, Oak Ridge, United States, [3]Queen Mary University of London, London, United Kingdom*	**C1-3** **Optical Waveguide Switching Based on a Co-Integrated SMA Bimorph Actuator** Sanaz Rastjoo[1], Randy Fechner[1], Mirko Kötz[1], Manfred Kohl[1] *[1]Karlsruhe Institute Of Technology (kit) / Institute Of Microstructure Technology (imt), Eggenstein-Leopoldshafen, Germany*	**D1-4_INV** **Nanomedicine with Silicon Nanostructures** Nicolas Voelcker, Beatriz Prieto-Simo *Monash University, Melbourne Center for Nanofabrication, Australia*
11:45	**A1-5** **Displacement Talbot Lithography – an emerging technology for rapid nanopatterning on 8-inch scale** Konstantins Jefimovs[1,2], Matias Kagias[1,2], Joan Vila-Comamala[1,2], Zhitian Shi[1,2], Christian Dais[3], Harun Solak[3], Lucia Romano[1,2,4], Sijia Xie[1], Helmut Schift[1], Marco Stampanoni[1,2] *[1]Paul Scherrer Institut, Villigen , Switzerland, [2]Institute for Biomedical Engineering, University and ETH Zürich, Zürich, Switzerland, [3]Eulitha AG, Kirchdorf, Switzerland, [4]Department of Physics and CNR-IMM- University of Catania, Catania, Italy*	**B1-5** **Stable fabrication of anti-reflection with nano-structure for high-temperature application** Kazuma Kurihara[1], Ryohei Hokai[1], Kouji Miyake[1] *[1]National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*	**C1-4** **An optomechanical resonator with a plasmonic half bull's eye antenna and an aperture for wavelength detection** Reo Kometani[1], Kodai Tanaka[2], Shin'ichi Warisawa[1] *[1]The University Of Tokyo, Chiba, Japan, [2]The University Of Tokyo, Tokyo, Japan*	
12:00-13:00	**LUNCH BREAK**			

Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A2: **ETCHING** Chairs: J.A. Liddle, E. Gogolides	**SESSION B2:** **WETTING I** Chairs: K. Megaridis, K. Ellinas	**SESSION C2:** **SENSORS & ACTUATORS II** Chairs: R. Kometani, J. Gaspar	**SESSION D2:** **BIOSENSORS I** Chairs: S. Chatzandroulis, H. Brueckl
13:00	**A2-1** **Etch challenges on Single and Dual SOI fins patterning for CFET at 25nm fin pitch** BT Chan, Juergen Boemmels, Julien Ryckaert, Liping Zhang, Zheng Tao, Altamirano Sanchez, Jean-François de Marneffe *Imec, Leuven, Belgium*	**B2-1_INV** **What can and cannot be done with Superhydrophobic, or Omniphobic surfaces?** Alidad Amirfazli *York University, Canada*	**C2-1** **Micro fabricated electron optical systems** C.T.H. Heerkens, M.A.R. Krielaart, Ir. P. Kruit *[1]TUDelft faculty of applied sciences, Delft, Netherlands*	**D2-1** **Application of junctionless nanowire transistors as ultrasensitive biosensors** Yordan M. Georgiev[1,2], Nikolay Petkov[3], Ran Yu[3], Adrian M. Nightingale[4], Elizabeth Buitrago[5], Olan Lotty[3], John C. deMello[4], Adrian M. Ionescu[5], Justin D. Holmes[3] *[1]Institute of Ion Beam Physics And Materials Research, Helmholtz-Centrum Dresden-rossendorf (HZDR), Dresden, Germany, [2]Institute of Electronics at the Bulgarian Academy of Sciences, Sofia, Bulgaria, [3]Materials Chemistry & Analysis Group, School of Chemistry and Tyndall National Institute, University College Cork, Cork, Ireland, [4]Imperial College London, London, United Kingdom, 5Nanoelectronic Devices Laboratory (Nanolab), École Polytechnique Fédéral de Lausanne (EPFL), Lausanne, Switzerland*
13:15	**A2-2** **On the formation of Black Silicon in SF6-O2 plasma: BSi on Demand** Vy Thi Hoang Nguyen, Flemming Jensen, Jørg Hubner, Henri Jansen *Technical University of Denmark, Kongens Lyngby, Denmark*		**C2-2** **Silicon-based Micro Oscillating Heat Pipes for High Energy Physics and Space Applications** Timothée Frei[1,2,3], Diego Alvarez Feito[1], Grégoire Bourban[3], Andrea Catinaccio[1], Michel Despont[2], Volker Gass[3], Arno Hoogerwerf[2], Elisa Laudi[1], Alessandro Mapelli[1] *[1]CERN, Genève, Switzerland, [2]CSEM, Neuchâtel, Switzerland, [3]EPFL, Lausanne, Switzerland*	**D2-2** **Nanoplasmonic mid-IR biosensors for ultrasensitive molecular spectroscopy** Aurelian John-Herpin, Andreas Tittl, Maria Soler, Hatice Altug *Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland*

TUESDAY SEPTEMBER 24TH, 2019

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13:30	**A2-3_INV** **Applications of Atomic Layer Deposition (ALD) and Atomic Layer Etch (ALE) in Advanced Semiconductor Manufacturing** Michal Danek *Lam Research Corporation, USA*	**B2-2** **Fabrication of elastic metallic superhydrophobic surfaces** Seyed Mehran Mirmohammadi[1], Sasha Hoshian[1,2], Ville P. Jokinen[1], Sami Franssila[1] *[1]Aalto University, Espoo, Finland, [2]Advacam Ltd, Espoo, Finland*	**C2-3** **Multi-parameter paper sensor fabricated by inkjet-printed silver nanoparticle and PEDOT:PSS** Dimitris Barmpakos[1,2], Christos Tsamis[2], Grigoris Kaltsas[1] *[1]microSENSES Laboratory, Department of Electrical and Electronic Engineering, University of West Attica, [2]Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research "Demokritos"*	**D2-3** **Non-invasive bladder cancer detection based on localized surface plasmon resonance sensing approach** Zi-Yi Yang[1], Yi-Chun Chiu[2], Wen-Huei Chang[3], Chun-hung Lin[1] *[1]National Cheng Kung University, Tainan, Taiwan, [2]Taipei City Hospital, Taipei, Taiwan, [3]National Pingtung University, Pingtung, Taiwan*
13:45		**B2-3** **Fully Organic and Biodegradable, Cellulose-based, Superhydrophobic Materials** Athanasios Milionis[1], Chander Shekhar Sharma[1], Raoul Hopf[1], Michael Uggowitzer[1], Ilker S. Bayer[2], Dimos Poulikakos[1] *[1]ETH Zurich, Zurich, Ελβετία, [2]Istituto Italiano di Tecnologia, Genova, Italy*	**C2-4** **Spatially controlled 3D origami MEMS actuation using focused electron beam exposure and polymer densification** Robert Kirchner[1], Sebastian Killge[1], Karola Richter[1], Dimitrios Kazazis[2], Ran Zhang[1], Johann Wolfgang Bartha[1] *[1]TU Dresden, Dresden, Germany, [2]Paul Scherrer Institute, Villigen PSI, Switzerland*	**D2-4** **Silicon-based Monolithic Spectroscopic Circuit for Label-free Point-of-Need Diagnostics** Konstantinos Misiakos[1], Eleni Makarona[1], Marcel Hoekman[2], Romanos Fyrogenis[3], Kari Tukkiniemi[4], Gerhard Jobst[5], Panagiota S. Petrou[6], Sotirios E. Kakabakos[6], Alexandros Salapatas[1], Dimitrios Goustouridis[3], Mikko Harjanne[4], Paivi Heimala[4], Andrzej Budkowski[7], Michele Lees[8], Ioannis Raptis[1] *[1]Institute Of Nanoscience and Nanotechnology, NCSR Demokritos, Athens, Greece, [2]LioniX BV, Enschede, The Netherlands, [3]ThetaMetrisis S.A., Peristeri, Attikis, Greece, [4]VTT, Espoo, Finland, [5]Jobst Technologies GmbH, Freiburg, Germany, [6]Institute of Nuclear & Radiological Sciences and Technology, Energy & Safety, NCSR Demokritos, Aghia Paraskevi, Attiki, Greece, [7]Jagellonian University, Krakow, Poland, [8]EUROFINS, Nantes, France*
14:00	**A2-4** **Self-limiting Atomic Layer Etching of SiO2 using Low Temperature Cyclic Ar/CHF3 Plasma** Stefano Cabrini[1], Stefano Dallorto[1,2,3], Andy Goodyear[2], Mike Cooke[2], Scott Dhuey[1], Julia Szornel[1], Adam Schwartzberg[1], Ivo Rangelow[3] *[1]Lawrence Berkeley National Laboratory, Berkeley, United States, [2]Oxford Instruments Plasma Technology, Bristol BS49 4AP, United Kingdom, [3]Ilmenau University of Technology, Ilmenau D-98684, Germany*	**B2-4** **Fabrication and Characterization of Anti-Fogging Surfaces Templated from Block-Copolymer Self-Assembly** Nikolaj Kofoed Mandsberg[1], Agnieszka Telecka[2], Emil Ludvigsen[2], Rafael Taboryski[2] *[1]DTU Health Tech, Kongens Lyngby, Denmark, [2]DTU Nanolab, Kongens Lyngby, Denmark*	**C2-5** **Fabrication and characterization of SMA thick film actuator array for high power tactile display** Jiale Xu[1], Yusuke Kimura[1], Kazuki Tsuji[1], Konomu Abe[2], Tomomi Shimizu[2], Hiroyasu Hasegawa[2], Takashi Mineta[1] *[1]Yamagata University, Yonezawa, Japan, [2]Tokai Rika CO. LTD, Niwa, Japan*	**D2-5** **Cost-Effective Three-Dimensional Plasmonic SERS Papers for Rapid Paraquat Poisoning Diagnosis with Portable Raman Spectrometer** Yu-Hsuan Chen[1], Sih-Wei Chang[2], Aileen Y. Sun[1], Hsuen-Li Chen[2], Dehui Wan[1] *[1]National Tsing Hua University, Hsinchu, Taiwan, [2]National Taiwan University, Taipei, Taiwan*

14:15-16:15	**POSTER SESSION I (Even Numbers)**

	JUPITER HALL
	Chairs: J. Gaspar, N. Kehagias
16:15-17:00	**Plenary 3** **Emerging Technologies for Biohybrid Devices** Shoji Takeuchi *Tokyo University, Japan*
17:00-17:45	**Keynote Lecture on Innovation** **Innovation Mindset: the top 10 critical insights every technology entrepreneur should know** Fotis Filippopoulos *Curious Inc. and International Hellenic Univ., Greece*

17:45-18:00	**SHORT BREAK**

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	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A3: MODELING & METROLOGY Chairs: D. Maas, A. Vekinis	**SESSION B3: NANOFABRICATION & NANODEVICES** Chairs: T. Ernst, N. Vainos	**SESSION C3: FLEXIBLE & WEARABLES** Chairs: J.-W. Choi, E. Makarona	**SESSION D3: CELL & ORGAN -ON-CHIP I** Chairs: S. Franssila, M. Kitsara
18:00	**A3-1** **Deep Learning Nanometrology of Line Edge Roughness** Eva Giannatou[3,5], Vassilios Constantoudis[1,5], George Papavieros[1,4,5], Evangelos Gogolides[1,5], Harris Papageorgiou[3], Gian Lorusso[2], V. Rutigliani[2], F. Van Roey[2] *[1]Institute of Nanoscience and Nanotechnology (INN), N.C.S.R. Demokritos, Agia Paraskevi, Greece, [2]IMEC, Leuven, Belgium, [3]Institute for Language and Speech Processing (ILSP), Athena R.C., Maroussi, Greece, [4]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, [5]Nanometrisis P.C., Agia Paraskevi, Greecee*	**B3-1** **Super-resolution fabrication of surface relief structures by contractive scaling of nanoporous monoliths** A. Papademetriou, Nikolaos Vainos, K. Papachristopoulou, V. Karoutsos *University Of Patras, Dept Materials Science, Patras, Greece*	**C3-1_INV** **Printed flexible electronics for wearable applications** Zheng Cui *Suzhou Institute of Nanotechnology, Chinese Academy of Sciences, China*	**D3-1** **A method for the multiple direct imaging by TEM, AFM, and SERS of ion channels on plasma membranes suspended on super-hydrophobic surfaces** Manola Moretti[1], Tania Limongi[2], Maria Teresa De Angelis[3], Elvira I. Parrotta[3], Gianluca Santamaria[3], Marco Allione[1], Sergei Lopatin[4], Bruno Torre[1], Peng Zhang[1], Andrea Giugni[1], Monica Marini[2], Angelica Bigo[5], Patrizio Candeloro[6], Giovanni Cuda[3], Enzo Di Fabrizio[1] *[1]King Abdullah University of Science and Technology, SMILEs Lab, Jeddah, Saudi Arabia, [2]Dipartimento di Scienza Applicata e Tecnologia, Politecnico di Torino, Torino, Italy, [3]Laboratory of Stem Cell Biology, Department of Experimental and Clinical Medicine, University Magna Graecia, Catanzaro, Italy, [4]King Abdullah University of Science and Technology, Imaging and Characterization Core lab, Thuwal-Jeddah, Saudi Arabia, [5]Dipartimento di Scienze AgroAlimentari, Ambientali e Animali, Università di Udine, Udine, Italy, [6]BIONEM lab, Department of Experimental and Clinical Medicine, University Magna Graecia, Catanzaro, Italy*

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18:15	**A3-2** **Modeling the Resolution Limits of Scanning Electron Microscope Roughness Metrology** Chris Mack *Fractilia, LLC, Austin, United States*	**B3-2** **Sub-15 nm multilayer nanopillar patterning for hybrid SET/CMOS integration** Marie-Line Pourteau[1], Ahmed Gharbi[1], Pierre Brianceau[1], Jacques-Alexandre Dallery[2], Fabien Laulagnet[1], Guido Rademaker[1], Raluca Tiron[1], Johannes von Borany[3], Karl-Heinz Heinig[3], Hans-Juergen Engelmann[3], Mathias Rommel[4], Leander Baier[4], Wilfried Lerch[5], Jürgen Niess[5] *[1]CEA-LETI, F-38054 Grenoble, France, [2]Vistec Electron Beam GmbH, D-07743 Jena, Germany, [3]Helmholtz-Zentrum Dresden-Rossendorf, D-01328 Dresden, Germany, [4]Fraunhofer IISB, D-91058 Erlangen, Germany, [5]HQ Dielectrics GmbH, D-89160 Dornstadt, Germany*		**D3-2** **Microwave radars in unlabelled, non-destructive Cell detection** Arda Secme[1], Dilara Uslu[1], Tufan Erdogan[1], Hadi Sedaghat Pisheh[1], M. Selim Hanay[1,2] *[1]Department of Mechanical Engineering, Bilkent University, ANKARA, Turkey, [2]National Nanotechnology Research Center (UNAM), Bilkent University, ANKARA, Türkiye*
18:30	**A3-3** **A Validation of UV Imprint Process Simulation using a Thermo-viscoelastic Constitutive Model** Ryunosuke Yamashita[1], Yuki Onishi[1], Kenji Amaya[1], Yoshihiko Hirai[2] *[1]Tokyo Institute Of Technology, Tokyo, Japan, [2]Osaka Prefecture University, Osaka, Japan*	**B3-3** **Time-efficient fabrication of Sierpiński-fractal bow-tie nanostructures with a focused helium ion beam and their spectral characterization** Florian Laible, Lisa Seitl, Simon Dickreuter, Dieter P. Kern, Monika Fleischer *University of Tübingen Institute for Applied Physics, Tübingen, Germany*	**C3-2** **Ormocomp-Based Printed Circuit Board Technology for Body-Implantable Applications** Gianmario Scotti, Sue-Yuan Fan, Yi Chiu *National Chiao Tung University, Hsin Chu, Taiwan*	**D3-3** **Extracellular matrix protein micropatterning technology for whole cell cryogenic electron microscopy studies** Leeya Engel[1], Guido Gaeitta[2], Liam P. Dow[1,3], Mark F. Swift[2], Gaspard Pardon[1], Niels Volkmann[2], William I. Weis[4], Dorit Hanein[2], Beth L. Pruitt[1,3] *[1]Department of Bioengineering, Stanford University, Stanford, USA, [2]Immunity and Pathogenesis Program, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA, [3]Departments of Mechanical Engineering and Molecular, Cellular, and Developmental Biology, University of California, Santa Barbara, Santa Barbara, USA, [4]Departments of Structural Biology and Molecular Cellular Physiology, Stanford University School of Medicine, Stanford, USA*

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18:45	**A3-4** **Modeling, monitoring and future projection of stochastic defects in EUV lithography** Hiroshi Fukuda *Hitachi High-Technologies Corporation, Tokyo, Japan*	**B3-4** **Pathways to laser generated nano patterns for functional surfaces** L. Gemini, Rainer Kling, G. Mincuzzi, M. Fauçon *Alphanov, Talence, France*	**C3-3** **Cell compatibility study of SU-8 microneedles based wearable dry electrodes for electroencephalogram** G. Kaklamani[1], G. Stavrinidis[1], K. Michelakis[3], V. Kontomitrou[1], K. Tsagaraki[1], N. Kornilios[2], G. Konstantinidis[1] *[1]Microelectronics Research Group, IESL-FORTH, Vassilika Vuton, Heraklion, Greece, [2]Greek Mediterranean University, Estavromenos, Heraklion, Greece, [3]Stewart Blusson Quantum Matter Institute, The University of British Columbia, Vancouver Campus, Vancouver BC, Canada*	**D3-4** **Polymer microfluidic chip with integrated thermoformed microcavity array for exposure of 3D cell aggregates to gradients of soluble factors** Philipp Maurer, Mireille Sthijns, Jasia King, Timo Rademakers, Pamela Habibović, Clemens van Blitterswijk, Vanessa LaPointe, Stefan Giselbrecht, Roman Truckenmüller *MERLN Institute for Technology-Inspired Regenerative Medicine, Maastricht University, Maastricht, Netherlands*

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	JUPITER HALL
	Chairs: E. Gogolides, M de Vittorio
08:45-09:30	**Plenary 4** **Intelligent and precise flow control for next-generation microfluidic POC diagnostics** Emmanuel Delamarche *IBM Research Zurich, Switzerland*
09:30-10:15	**Plenary 5** **The Revolution of Silicon Photonics** Michal Lipson *Columbia University, USA*
10:15-10:45	**COFFEE BREAK**

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Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A4: **3D LITHOGRAPHIES** Chairs: C. Vieu, A. Olziersky	**SESSION B4:** **WETTING II** Chairs: A. Tserepi, A. Milionis	**SESSION C4:** **PHYSICAL SENSORS** Chairs: F. Murano, P. Dimitrakis	**SESSION D4:** **LAB-ON A CHIP TECHNOLOGIES** Chairs: S. Pang, S. Park
10:45	**A4-1** **Emergent Magnetic Monopoles in a Macroscopically Degenerate 3D Artificial Spin Ice** Scott Dhuey[1], Alan Farhan[2,7], Charlotte Petersen[3], Michael Saccone[4], Noah Kent[4], Rajesh Chopdekar[2], Yen-Lin Huang[5], Zuhuang Chen[5], Mikko J. Alava[3], Thomas Lippert[7,8], Andreas Scholl[2], Sebastiaan van Dijken[6] *[1]Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, United States, [2]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, United States, [3]COMP Centre of Excellence, Department of Applied Physics, Aalto University, Aalto, Finland, [4]Physics Department, University of California - Santa Cruz, Santa Cruz, USA, [5]Dept of Materials Science and Engineering, University of California - Berkeley, Berkeley, United States, [6]Nanospin, Dept. of Applied Physics, Aalto University, Aalto, Finland, [7]Lab for Multiscale Materials Experiments, Paul Scherrer Institute, Villigen, Switzerland, [8]Dept of Chemistry and Applied Biosciences, Lab of Inorganic Chemistry, ETH Zurich, Zurich, Switzerland*	**B4-1_INV** **Wettability-Patterned Surfaces for Pumpless Handling of Fluid Microvolumes: Lab-on-Chip and Heat Transfer Applications** Constantine Megaridis *University of Illinois at Chicago*	**C4-1** **Suspended intracellular pressure sensor with a reference cavity** María Isabel Arjona[1,2], Ana Sanchez[1], Marta Duch[1], Rodrigo Gómez-Martínez[1], Teresa Suárez[3], Jose Antonio Plaza[1] *[1]Instituto De Microelectrónica De Barcelona (IMB-CNM CSIC), Cerdanyola Del Valles (Barcelona), Spain, [2]Departamento de Electrónica y Tecnología de los Computadores, Facultad de Ciencias, Universidad de Granada, Granada, Spain, [3]Centro de Investigaciones Biológicas (CIB) CSIC, Madrid, Spain*	**D4-1** **A Novel Micro Free-Flow Electrophoresis 3D printed Lab on a Chip for exosomes separation** Federica Barbaresco[1], Matteo Cocuzza[1,2], Fabrizio Candido Pirri[1], Simone Luigi Marasso[1,2] *[1]Politecnico Di Torino, Torino, Italy, [2]CNR-IMEM, Parma, Italy*

11:00	**A4-2** **Fabrication of 3D scaffolds reproducing intestinal epithelium topography by high-resolution 3D stereolithography** Justine Creff[1,2], Rémi Courson[1], Thomas Mangeat[2], Julie Foncy[1], Sandrine Souleille[1], Christophe Thibault[1], Arnaud Besson[2], Laurent Malaquin[1] *[1]LAAS CNRS, Toulouse, France, [2]LBCMCP, Toulouse, France*		**C4-2** **Microfabrication of a MEMS accelerometer with two-thick functional layers** Inês Sofia Garcia[1], Eurico E. Moreira[1,2], Rosana A. Dias[1], João Gaspar[1], Filipe S. Alves[1], Luis Alexandre Rocha[1,2] *[1]INL - International Iberian Nanotechnology Laboratory, Braga, Portugal, [2]CMEMS-UMinho, Guimarães, Portugal*	**D4-2** **Loading of biodegradable microcontainers with budesonide for local treatment of inflammatory bowel disease** Zarmeena Abid[1,2], Francesca Andreoli[1,2], Maja Nørgaard Kristensen[1,3], Ritika Singh Petersen[1,2], Anette Müllertz[1,3], Anja Boisen[1,4], Stephan Sylvest Keller[1,2] *[1]The Danish National Research Foundation and Villum Foundation's Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics (IDUN), Kgs. Lyngby, Denmark, [2]National Centre for Nano Fabrication and Characterization, DTU Nanolab, Technical University of Denmark, Kgs. Lyngby, Denmark, [3]Department of Pharmacy, Faculty of Health and Medical Sciences, University of Copenhagen, 2100 Copenhagen, Denmark, [4]Department of Health Technology, DTU Health Tech, Technical University of Denmark, Kgs. Lyngby, Denmark*

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	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A4: **3D LITHOGRAPHIES** Chairs: C. Vieu, A. Olziersky	**SESSION B4:** **WETTING II** Chairs: A. Tserepi, A. Milionis	**SESSION C4:** **PHYSICAL SENSORS** Chairs: F. Murano, P. Dimitrakis	**SESSION D4:** **LAB-ON A CHIP TECHNOLOGIES** Chairs: S. Pang, S. Park
11:15	**A4-3** **Novel and versatile prototyping routes for polymeric hybrid and biconvex micro-optics** Johannes Wolf[1], Susanne Grützner[1], Margit Ferstl[2], Marko Vogler[1], Jan Jasper Klein[1], Anja Voigt[1], Manuel Thesen[1], Anett Kolander[1], Markus Guttmann[3], Madeleine Nuck[2], Arne Schleunitz[1], Gabi Grützner[1] *[1]Micro resist technology GmbH, Berlin, Germany, [2]Fraunhofer Heinrich Hertz Institute, HHI, Berlin, Germany, [3]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**B4-2** **Towards long-lasting underwater superhydrophobicity of micro-nano textured surfaces: Plastron thickness observation using white light reflectance spectroscopy** Athanasios Smyrnakis, Dimosthenis Ioannou, Kosmas Ellinas, Aggeliki Tserepi, Evangelos Gogolides *Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi, Greece*	**C4-3** **Simple fabrication of highly sensitive capacitive pressure sensors using a porous dielectric layer with cone-shaped patterns** Yeongjun Kim, Juwon Hwang, Je Hoon Oh *Department of Mechanical Engineering, Hanyang University, Ansan,South Korea*	**D4-3_INV** **Acoustofluidics - A sound approach to liquid biopsies** Thomas Laurell *Lund University, Sweden*
11:30	**A4-4_INV** **Laser-based 3D printing at the nanoscale** Maria Farsari *Foundation for Research & Technology Hellas, Greece*	**B4-3** **Biomimetic architectures for entrapping air underwater using wetting materials** Ratul Das, Sankara Arunachalam, Zain Ahmad, Jamilya Nauruzbayeva, Himanshu Mishra *King Abdullah University of Science and Technology (KAUST), Water Desalination and Reuse Center (WDRC), Thuwal, Saudi Arabia*	**C4-4** **The effect of cracked alumina substrate on high sensitive Pt nanoparticles strain sensor** Evangelos Aslanidis[1], Lampros Patsiouras[1], Evangelos Skotadis[1], Konstantinos Giannakopoulos[2], Dimitris Tsoukalas[1] *[1]National Technical Univercity of Athens, Athens, Greece, [2]NCSR Demokritos, ATHENS, Greece*	
11:45		**B4-4** **Engineering of nanostructured polymer surfaces with enhanced wetting properties** Rafael Taboryski, Nikolaj Mandsberg, Agnieszka Telecka, Nastasia Okulova, Emil Ludvigsen *Technical University of Denmark, Kgs Lyngby, Denmark*	**C4-5** **Development of Microscale Magnetic Actuators** Jizhai Cui[1,2], Paolo Testa[1,2], Anja Weber[1,2], Laura J. Heyderman[1,2] *[1]Laboratory for Mesoscopic Systems, Department of Materials, ETH Zurich, Zurich, Switzerland, [2]Laborabory for Multiscale Materials Experiments, Paul Scherrer Institute, Villigen, Switzerland*	**D4-4** **Imprinted nanoparticles with magnetic and plasmon-optical properties for biomolecular diagnostics** Astrit Shoshi[1], Michael -J. Haslinger[2], Tina Mitteramskogler[2], Michael Mühlberger[2], Stefan Schrittwieser[3], Jörg Schotter[3], Hubert Brückl[1] *[1]Department for Integrated Sensor Systems, Danube University Krems, [2]PROFACTOR GmbH, [3]AIT Austrian Institute of Technology*

12:00-13:00	LUNCH BREAK

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A5: NOVEL PATTERNING APPLICATIONS Chairs: JF de Marneffe, V. Constantoudis	**SESSION B5: INDUSTRIAL** Chairs: R. Taboryski, A. Milionis	**SESSION C5: ENERGY HARVESTING DEVICES** Chairs: C. Tsamis, G. Murillo	**SESSION D5: CELLS & ORGAN-ON-CHIP II** Chairs: R. Luttge, JM. Quero
13:00	**A5-1** **Fabrication of 3D anisotropic dry adhesive microstructures based on 2PP for application in space** Jan F. Busche, Gereon Starke, Saskia Knickmeier, Andreas Dietze *Institute of Microtechnology, TU Braunschweig, Braunschweig, Germany*	**B5-1_INV** **Patterned Structures and Nanolaminate Hybrid Architectures from Plant-sourced Nanocellulose for Optoelectronics** Tekla Tammelin *VTT Technical Research Center, Finland*	**C5-1** **Enhanced responsivity of PN junction solar cells through graphene modification layer** Bo Feng,Tianyu Wang, Jingyuan Zhu, Yifang Chen *Fudan University, Shanghai, China*	**D5-1** **Influence of 3D microenvironment on cancer cells growth and invasion** Sara Sergio[1,2], Addolorata Maria Luce Coluccia[2], Enrico Domenico Lemma[3], Barbara Spagnolo[1], Daniele Vergara[2,4], Michele Maffia[2,4], Massimo De Vittorio[1,5], Ferruccio Pisanello[1] *[1]Istituto Italiano di Tecnologia, Center for Biomolecular Nanotechnologies, Arnesano, Italy, [2]Dipartimento di Scienze e Tecnologie Biologiche e Ambientali, Università del Salento, Lecce, Italy, [3]Karlsruher Institut für Technologie, Zoologisches Institut, Abteilung Zell- und Neurobiologie , Karlsruhe, Germany, [4]Laboratory of Clinical Proteomic, Giovanni Paolo II Hospital, Lecce, Italy, [5]Dipartimento di Ingegneria dell'Innovazione, Università del Salento, Lecce, Italy*
13:15	**A5-2** **Cleanroom in an SEM: in-situ pattern transfer** Gaudhaman Jeevanandam, Ruud van Tol, Youp van Goozen, Pieter Kruit, Cornelis W. Hagen *Charged Particle Optics group, Dept. Imaging Physics, Delft University of Technology, Delft, Netherlands*		**C5-2** **Piezoelectric AlN-based fiber-optic devices for sensing and energy harvesting** Massimo Mariello[1,2], Francesco Guido[2], Luciana Algieri[3], Vincenzo Mariano Mastronardi[2], Francesco Rizzi[2], Antonio Qualtieri[2], Ferruccio Pisanello[2], Massimo De Vittorio[1,2] *[1]Dipartimento di Ingegneria dell'Innovazione, Università del Salento, Lecce, Italy, [2]Center for Biomolecular Nanotechnologies, Istituto Italiano di Tecnologia, Arnesano, Lecce, Italy, [3]Piezoskin S.r.l, Arnesano, Lecce, Italy*	**D5-2** **Biomimetic aligned nanofibrous PVDF scaffolds for cardiac tissue engineering** Maria Kitsara[1], Chau Le[1], Alexandre Simon[1], Onnik Agbulut[1], Vincent Hublot[2], Gaëlle Revet[1], Thierry Dufour[3] *[1]Sorbonne Université, Institut de Biologie Paris-Seine, Paris, France, [2]Sorbonne Université, Laboratoire de Réactivité de Surface UMR CNRS, Paris, France, [3]Sorbonne Université, Laboratoire de Physique des Plasmas, UMR CNRS , Paris, France*

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	SESSION A5: NOVEL PATTERNING APPLICATIONS Chairs: JF de Marneffe, V. Constantoudis	**SESSION B5: INDUSTRIAL** Chairs: R. Taboryski, A. Milionis	**SESSION C5: ENERGY HARVESTING DEVICES** Chairs: C. Tsamis, G. Murillo	**SESSION D5: CELLS & ORGAN-ON-CHIP II** Chairs: R. Luttge, JM. Quero
13:30	**A5-3** **Protein Amyloid Fibrils Formation and Growth in Droplet with Confined Convection Flow on Super-hydrophobic Surface** Peng Zhang[1], Manola Moretti[1], Marco Allione[1], Javier Ordonezloza[2], Mani Sarathy[2], Enzo Di Fabrizio[1] *[1]SMILEs Lab, Physical Science and Engineering (PSE) and Biological and Environmental Science and Engineering (BESE) Divisions, King Abdullah University Of Science And Technology, Thuwal, Saudi Arabia, [2]Clean Combustion Research Center, Physical Science and Engineering (PSE) Division, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*	**B5-2** **Directed Assembly-based Printing of Nano and Microscale Electronics and Sensors** Ahmed Busnaina *Northeastern University, Boston, United States*	**C5-3** **Metal Oxide Interlayers for High Performance Inverted Perovskite Solar Cells** Stelios Choulis *Cyprus University of Technology, Limassol, Cyprus*	**D5-3_INV** **From Cells-on-Chip to Chips-in-Cell: our fantastic "voyage"** Plaza, José Antonio *Instituto de Microelectrónica de Barcelona-CNM, Spain*
13:45	**A5-4** **A fully integrated tapered fiber optrode for simultaneous multipoint optical control and electrical readout of neural activity** Antonio Balena[1,2], Alessandro Rizzo[1,2], Leonardo Sileo[1], Barbara Spagnolo[1], Filippo Pisano[1], Marco Pisanello[1], Francesco De Nuccio[3], Domenico Lofrumento[3], Enrico Domenico Lemma[1,2], Bernardo Luis Sabatini[4], Massimo De Vittorio[1,2], Ferruccio Pisanello[1] *[1]Istituto Italiano Di Tecnologia, Center For Biomolecular Nanotechnologies, Arnesano, Italy, [2]Department of Innovation Engineering, Università del Salento, Lecce, Italy, [3]Lab Human Anatomy and Neuroscience, Department of Biological and Environmental Technologies and Sciences. Università del Salento, Lecce, Italy, [4]Department of Neurobiology, Howard Hughes Medical Institute, Harvard Medical School, Boston, Italy*	**B5-3** **Proto-MIP – A Novel Route for MIP Fabrication** Sandra Haas, Leo Schranzhofer, Brittany Roberts *Profactor, Steyr-Gleink, Austria*	**C5-4** **Fabrication of electrospun polyimide nanofibers and their application in triboelectric nanogenerators** Yeongjun Kim, Xinwei Wu, Je Hoon Oh *Department of Mechanical Engineering, Hanyang University, Ansan, South Korea*	

14:00	**A5-5** **Grayscale e-beam lithography for the fabrication of 3D microfluidic devices** Thomas Mortelmans[1,2,3], Dimitrios Kazazis[1], Vitaliy A. Guzenko[1], Celestino Padeste[1], Xiaodan Li[1], Thomas Braun[2], Henning Stahlberg[2], Yasin Ekinci[1] *[1]Paul Scherrer Institute, 5232 Villigen, Switzerland, [2]Center for Cellular Imaging and NanoAnalytics (C-CINA), 4058 Basel, Switzerland, [3]Swiss Nanoscience Institute, 4056 Basel, Switzerland*	**B5-4** **Antireflective Moth-Eyes Structures on Freeform Surfaces fabricated by Nanoimprint Lithography** Michael J. Haslinger, Amiya Ranjan Moharana, Daniel Fechtig, Michael Mühlberger *Profactor Gmbh., Steyr-Gleink, Austria*		**D5-4** **Combination of a biopolymer and UV-casting for production of a peripheral nerve implant containing an internal aligned microchannels array** Santos Merino[1], Ruth Diez - Ahedo[1], Maria del Carmen Marquez - Posadas[1], Iban Quintana[1], Francisco Javier Rodríguez[2], John W. Haycock[3], Allan Glen[3], Begoña Castro[4], Eva González[4], Patrick Duffy[5], Wenxin Wang[6] *[1]Ik4-Tekniker, Eibar, Spain, [2]Hospital Nacional de Parapléjicos, Toledo, Spain, [3]University of Sheffield, Sheffield, England, [4]Histocell S.L, Derio, Spain, [5]Ashland Specialties Ireland, Synergy Centre, Dublin, Ireland, [6]University College Dublin, Charles Institute of Dermatology, Dublin, Ireland*
14:15-16:15	**POSTER SESSION II (Odd Numbers)**			

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Scientific Program

	JUPITER HALL
	Chair: C. Tsamis
16:15-17:00	**Plenary 6** **Nanogenerators for self-powered systems and sensors** Zhong Lin Wang *Georgia Tech, USA*

Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A6: **NIL & NOVEL LITHOGRAPHIES** Chairs: Y. Hirai, M. Farsari	**SESSION B6:** **NANOFAB FOR BIOAPPLICATIONS** Chairs: A. Maan, S. Franssila	**SESSION C6:** **PHOTONIC STRUCTURES** Chairs: S. Choulis, L. Businaro	**SESSION D6:** **INDUSTRIAL** Chairs: A. McMillan, A. Tserepi
17:00	**A6-1** **High throughput direct metal oxide nanopatterning by sol-gel soft-NIL in controlled atmosphere, and related applications** David Grosso[1], Thomas Bottein[1], Simona Checcucci[2], Marco Faustini[3], Mario Gurioli[2], Luc Favre[1], Marco Abbarchi[1] *[1]Im2np / Aix Marseille University, Marseille Cedex 20, France, [2]European Laboratory for Nonlinear Spectroscopy (LENS), Sesto Fiorentino, Italy, [3]Laboratoire de Chimie de la Matière Condensée de Paris - LCMCP Sorbonne Université, Paris, France*	**B6-1** **Direct Photoreduction of Gold Nanoparticles on SU-8 nanostructures** Yi-Jui Chen[1], Prof. Wen-Huei Chang[2], Chun-hung Lin[1] *[1]National Cheng Kung University, Tainan, Taiwan, [2]National Pingtung University, Pingtung, Taiwan*	**C6-1** **Stretchable plasmonic rulers: Reversibly tuning the coupling strength of individual plasmonic nano-bowties on flexible substrates** Florian Laible[1,2], Dominik A. Gollmer[1,2], Simon Dickreuter[1,2], Dieter P. Kern[1,2], Monika Fleischer[1,2] *[1]Institute for Applied Physics, University of Tuebingen, Tuebingen, Germany, [2]Center LISA+, University of Tuebingen, Tuebingen, Germany*	**D6-1** **Label-free imaging platform for rapid analysis of biomarkers** Luc Dümpelmann[1], Roland A. Terborg[1], Josselin Pello[1], Illaria Mannelli[1], Filiz Yesilkoy[2], Alexander Belushkin[2], Yasaman Jahani[2], Nuria Fabri-Faja[3], Priyanka Dey[3], Olallo Calvo-Lozano[3], M.-Carmen Estevez[3], Anna Fàbrega[4], Juan J. González-López[4], Laura M. Lechuga[3], Hatice Altug[2], Valerio Pruneri[1] *[1]ICFO - Institut de Ciències Fotòniques, Castelldefels, Spain, [2]EPFL - École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [3]ICN2 – Institute of Nanoscience and Nanotechnology, Barcelona, Spain, [4]Hospital Universitari Vall d'Hebron, Barcelona, Spain*
17:15	**A6-2** **Sub-micron silver wires on non-flat polymer substrates fabricated by thermal imprint and back injection molding** Helmut Schift[1], Sijia Xie[1], Barbara Horváth[1], Jerome Werder[2] *[1]Paul Scherrer Institut (PSI), Villigen PSI, Switzerland, [2]FHNW University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland*	**B6-2** **Micro-and nanostructures for ultrasoft neural interfaces** Bekim Osmani[1], Tino Töpper[1], Helmut Schift[2], Raphael Guzman[3], Magnus Kristiansen[4], Rowena Crockett[5], Bert Müller[1] *[1]Biomaterials Science Center, Department of Biomedical Engineering, University of Basel, Allschwil, Switzerland, [2]Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen, Switzerland, [3]Department of Neurosurgery, University Hospital Basel, Basel, Switzerland, [4]Institute of Polymer Nanotechnology, FHNW University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland, [5]Coating Competence Center, Empa, Dübendorf, Switzerland*	**C6-2** **Enhancement of Photodetection Performance of Graphene by Photoreceptor Protein** Jing Tong[1,2], Yi Wang[3,4], Yuelin Wang[1], Tie Li[1] *[1]SIMIT, CAS, Shanghai, China, [2]UCAS, Beijing, China, [3]Beijing Institute of Lifeomics, Beijing, China, [4]NERCPD, Beijing, China*	**D6-2** **A sensitive Lab-on-a-chip for pathogen detection using a simple DNA amplification reaction** Georgia Kaprou[1], Katerina Tsougeni[1,2], Athina S. Kastania[2], Christos-Moritz Loukas[1], Athanasios Smyrnakis[1], Kosmas Ellinas[1,2], Evangelos Gogolides[1,2], Angeliki Tserepi[1,2] *[1]NCSR Demokritos, Athens, Greece, [2]Nanoplasmas P.C., Athens, Greece*

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Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A6: **NIL & NOVEL LITHOGRAPHIES** Chairs: Y. Hirai, M. Farsari	**SESSION B6:** **NANOFAB FOR BIOAPPLICATIONS** Chairs: A. Maan, S. Franssila	**SESSION C6:** **PHOTONIC STRUCTURES** Chairs: S. Choulis, L. Businaro	**SESSION D6:** **INDUSTRIAL** Chairs: S. Park, A. McMillan
17:30	**A6-3** **Hydrogen Depassivation Lithography Exposure Physics** John Randall, James H.G. Owen, Ehud Fuchs, Michael Schantz, Robin Santini, Cyndi Delgado, Joseph H. Lake *Zyvex Labs, Richardson, United States*	**B6-3** **BioBots: Light-controlled microtools for biological applications** Ada-Ioana Bunea[1], Einstom Engay[2], Alexandre Wetzel[1], Rafael Taboryski[1] *[1]DTU Nanolab, Kongens Lyngby, Denmark, [2]DTU Fotonik, Kongens Lyngby, Denmark*	**C6-3** **Micro-lens array superpositions for level-line moirés** Thomas Walger[1], Roger D. Hersch[2], Juergen Brugger[1] *[1]Microsystems Laboratory - Epfl, Lausanne, Switzerland, [2]School of Computer and Communication Sciences - EPFL, Lausanne, Switzerland*	**D6-3** **Dimple structure to enable highly accurate microdroplet manipulation** Katsuo Mogi[1], Shungo Adachi[1], Naoki Takada[2], Tomoya Inoue[2], Tohru Natsume[1] *[1]Molecular Profiling Research Center For Drug Discovery, National Institute Of Advanced Industrial Science And Technology, Tokyo, Japan, [2]Research Center for Ubiquitous MEMS and Micro Engineering, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan*
17:45	**A6-4** **Hard mask nanopatterns integrated into semiconductor manufacturing: A facile block copolymer methodology** Tandra Ghoshal, Michael Morris *Surface And Interface Chemistry, Department Of Chemistry, AMBER And CRANN, Trinity College Dublin, Dublin, Ireland, Dublin, Ireland*	**B6-4** **Fabrication Methodology for Personalised Biodegradable Microneedle Array** Libo Wu[1], Nobuyuki Takama[1], Beomjoon Kim[1] *[1]Institute of Industrial Science, The University of Tokyo, Tokyo, Japan*	**C6-4** **Nonplanar nanostructuring of tapered optical fibers for plasmonic neural interfaces** Filippo Pisano[1], Antonio Balena[1,2], Marco Grande[3], Marco Pisanello[1], Tiziana Stomeo[1], Antonio Qualtieri[1], Marco Bianco[1,2], Leonardo Sileo[1], Antonella D'Orazio[3], Massimo De Vittorio[1,2], Ferruccio Pisanello[1] *[1]Fondazione Istituto Italiano Di Tecnologia-CBN, Arnesano, Italy, [2]Dipartimento di Ingegneria dell'Innovazione, Università del Salento, Lecce, Italy, [3]Dipartimento di Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Bari, Italy*	**D6-4** **Platform for High Throughput manufacturing of Microfluidic Devices** Martin Smolka[1], Anja Haase[1], Stephan Ruttloff[1], Johannes Götz[1], Pelin Tören[1], Markus Rumpler[2], Barbara Stadlober[1], Jan Hesse[1], Sascha Geidel[2], Jörg Nestler[2], Ingo Katzmayr[3], Max Sonnleitner[3], Suhit Hemanth[4], Jan Kafka[4], Isbaal Ramos[5], Mirko Lohse[6], Manuel Thesen[6], Georgios Kokkinis[7], Günther Kriechhammer[7], Martin Horn[8], Wilfried Weigel[8], Nerea Briz Iceta[9], Goran Bijelic[9] *[1]JOANNEUM RESEARCH - MATERIALS Institute, Weiz, Austria, [2]JOANNEUM RESEARCH - HEALTH Institute, Graz, Austria, [3]Biflow Systems GmbH, Chemnitz, Germany, [4]GENSPEED Biotech GmbH, Rainbach, Austria, [5]Inmold A/S, Hørsholm, Denmark, [6]Innoprot, Derio, Spain, [7]micro resist technology GmbH, Berlin, Germany, [8]Pessl Instruments GmbH, Weiz, Austria, [9]Scienion AG, Berlin, Germany, [10]Tecnalia Research and Innovation, Donostia - San Sebastian, Spain*
19:30-22:00	**GALA DINNER** Including best poster awards, micrograph contest awards and lecture/performance on art and nanotechnology "-Sky am: Mythologies & methodologies of a nanoartist" by Prof. Ioannis Michaloudis			

Scientific Program

	JUPITER HALL
	Chairs: G. Grützner, D. Kern
08:45-09:30	**Plenary 7** **MNE Fellow Award & Lecture** **More than name print-replication and combination** Hella-Christin Scheer *University of Wuppertal, Germany*
09:30-10:00	**Young Investigator Award** **Chips and gadgets for miniaturized assays** Yuksel Temiz *Ibm Research, Zurich, Switzerland*
10:00-10:15	**Award Ceremony**
10:15-10:45	**COFFEE BREAK**

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Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A7: ELECTRON AND ION BEAM LITHOGRAPHY Chairs: S. Cabrini, A. Olziersky	**SESSION B7: NANOSTRUCTURES FOR PHOTONICS** Chairs: M. Muhlberger, S. Dhuey	**SESSION C7: MATERIALS & DEVICES FOR NANOELECTRONICS** Chairs: Z. Durrani, D. Tsoukalas	**SESSION D7: MICRO & NANO FLUIDICS** Chairs: P. Petrou, L. Malaquin
10:45	**A7-1** **A single integrated fiberoptrode for optogenetic stimulation and electrical recording of neural activity** Barbara Spagnolo[1], Leonardo Sileo[1], Rui Peixoto[2], Marco Pisanello[1], Filippo Pisano[1], Emanuela Maglie[1,3], Bernardo L. Sabatini[2], Massimo De Vittorio[1,3], Ferruccio Pisanello[1] *[1]Istituto Italiano di Teconologia, Center for Biomolecular Nanotechnologies, Arnesano, Lecce, Italy, [2]Department of Neurobiology, Howard Hughes Medical Institute, Harvard Medical School, U.S.A., United States, [3]Università del Salento, Dipartimento di Ingegneria dell'Innovazione, Italy, Italy*	**B7-1** **Fabrication of Vivid, Wide Area Transmission Holograms in Plastic Substrates using Nanoimprint Lithography** Keith Morton, Liviu Clime, Gaétan Veilleux, Luke Lukic, Matthew Shiu, Teodor Veres *National Research Council Canada, Montreal, Canada*	**C7-1_INV** **Merging Computing and Sensing for Low power and Sustainable Edge Applications** Thomas Ernst *CEA-LETI, Grenoble, France*	**D7-1** **3D coaxial liquid injection and extraction system by 2-photon-polymerization** Peer Erfle[1,2], Andreas Dietzel[1,2] *[1]Technische Universität Carolo-wilhelmina Zu Braunschweig, Braunschweig, Germany, [2]Technische Universität Braunschweig, Center of Pharmaceutical Engineering, Braunschweig 38106, Germany*
11:00	**A7-2** **Cs and Rb Ion Coldbeam Suitability for Circuit Edit** Yuval Greenzweig[1], Richard Livengood[2], Roy Hallstein[2], Yariv Drezner[1], Minh Ly[2], Shida Tan[2], Amir Raveh[1] *[1]Intel Israel, Haifa, Israel, [2]Intel Corporation, Santa Clara, USA*	**B7-2** **Fabrication of Gold on glass photonic nanostructures.** Richard B. Cousins[1], Shakila Naznin[2], Hamed Pezeshki[2], Matt Clark[2], Christopher Mellor[3] *[1]nmRC, [2]Electrical and electronic enginering, [3]Phsyics and Astronomy*		**D7-2** **Fabrication of a µ-fluidic device by two-photon lithography using a positive tone resist** Gijs Van Der Velden, Daniel Fan, Urs Staufer *Delft University Of Technology, Delft, Netherlands*

Scientific Program

11:15	**A7-3** **The Marriage of the Ions and Chemistry to Fulfill Semiconductor devices Preparation** Gregory Goupil[1], Pascal Gounet[2], Christian Hollerth[3], Frank Altmann[4], Sebastian Brand[4], Anne Delobbe[1] *[1]Orsay Physics, Fuveau, France, [2]ST Microelectronics, Grenoble, France, [3]Infineon Technologies, Neubiberg, Germany, [4]Fraunhofer IMWS, Halle, Germany*	**B7-3_INV** **Biomimetics of photosynthetic photonic structures. How natural light harvesting could become an inspiration for nanotechnology** Martin Lopez *International Iberian Nanotechnology Laboratory-INL, Portugal*	**C7-2** **Vertical field-effect transistors based on 3D GaN nanostructure arrays** Klaas Strempel[1,2], Feng Yu[1,2], Hendrik Spende[1,2], Jana Hartmann[1,2], Friedhard Römer[3], Bernd Witzigmann[3], Andrey Bakin[1,2], Hergo-Heinrich Wehmann[1,2], Hutomo Suryo Wasisto[1,2], Andreas Waag[1,2] *[1]Institute Of Semiconductor Technology (IHT), TU Braunschweig, Braunschweig, Germany, [2]Laboratory of Emerging Nanometrology (LENA), TU Braunschweig, Braunschweig, Germany, [3]Computational Electronics and Photonics (CEP), Kassel University, Kassel, Germany*	**D7-3** **A Precise, Low-Power, Electrokinetically Actuated Micropumping Mechanism** Alexander Eden, Farnaz Lorestani, Sean MacKenzie, Stephen Minne, David Huber, Carl Meinhart, Sumita Pennathur *University of California, Santa Barbara, Santa Barbara, United States*
11:30	**A7-4** **Excitation power density dependence of photocurrent from InGaN photocathode** Daiki Sato[1,2], Tomohiro Nishitani[2,3], Atsushi Koizmi[2], Yoshio Honda[3], Hiroshi Amano[3] *[1]Department of Electronics, Nagoya University, Nagoya, Japan, [2]Photo electron Soul Inc., Nagoya, Japan, [3]Center for Integrated Research of Future Electronics, Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*		**C7-3** **Design and simulation of planar nano vacuum channel transistors (pNVCT)** Marco Turchetti, Phillip D. Keathley, Yujia Yang, Alberto Nardi, Luca Daniel, Karl K. Berggren *Massachusetts Institute of Technology, Cambridge, United States*	**D7-4_INV** **Design and Fabrication of Plastic Nanofluidic Devices for Single Molecule Detection** Sunggook Park *Louisiana State University, USA*
11:45	**A7-5** **Nanofabrication and imaging characterization of 30 nm resolution charts with vertical sidewalls** Jingyuan Zhu[1], Sichao Zhang[1], Shanshan Xie[1], Yifang Chen[1], Biao Deng[2], Lijuan Zhang[2] *[1]Nanolithography and Application Research Group, State key lab of ASIC and, Shanghai, China, [2]Shanghai Synchrotron Radiation Facility, Shanghai Institute of Applied Physics, Shanghai, China*	**B7-4** **Monolayer graphene direct transfer on silicon for Schottky photodiode fabrication** Yiming Wang[1,2], Alberto Ballesio[2], Matteo Parmeggiani[2,3], Alessio Verna[2], Matteo Cocuzza[2,4], Candido Fabrizio Pirri[2,3], Simone Luigi Marasso[2,4], Shuming Yang[1] *[1]State Key Laboratory for Manufacturing System Engineering, Xi'an Jiaotong University, [2]Chilab - Materials and Microsystems Laboratory, DISAT, Politecnico di Torino, [3]Center for Sustainable Future Technologies, Italian Institute of Technology, [4]CNR-IMEM*	**C7-4** **Integration of 2D MoS2 with InAlAs/InGaAs heterojunction for dual color detection in both visible and near-infrared band** Jianan Deng, Mingsai Zhu, Yuying Xie, Lingyi Zong, Wenzhong Bao, Yifang Chen *Fudan University, Shanghai, China*	

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12:00-13:00	LUNCH BREAK

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A8: INDUSTRIAL I Chairs: I. Raptis, M. Chatzichristidi	**SESSION B8: WETTING III** Chairs: K. Ellinas, A. Amirfasli	**SESSION C8: MATERIALS FOR NANOELECTRONICS II** Chairs: A. Busnaina, D. Tsoukalas	**SESSION D8: DEVICES FOR DNA STUDIES** Chairs: G. Kaltsas
13:00	**A8-1_INV** **The path to Roll to Roll Imprint Technology, an Enabling Technology** John Maltabes *Applied Materials, Germany*	**B8-1** **A scalable process for manufacturing hierarchical superhydrophobic structures on aluminium: promotion of stable dropwise condensation for tropical air conditioning** Kristyn Kadala, Soochan Chung, Hayden Taylor *UC Berkeley, BERKELEY, United States*	**C8-1** **Suitability of HSQ as fabrication material for vertical devices at nano-scale** Esteve Amat[1], Alberto del Moral[1], Hans-Jürgen Engelmann[2], Ahmed Gharbi[3], Guido Rademaker[3], Marie-Line Porteau[3], Raluca Tiron[3], Joan Bausells[1], Francesc Perez-Murano[1] *[1]Institute of Microelectronics of Barcelona, Bellaterra, Spain, [2]Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany, [3]CEA-LETI, Grenoble, France*	**D8-1** **Ultrafast Phage-Long DNA Size Profiling Using Optonanofluidic Device** Chia Fu Chou[1], Jia Wei Yeh[1], Yii Lih Lin[1,2], K. K. Sriram[1,2] *[1]Institute of Physics, Academia Sinica, Taipei, Taiwan, [2]Chemical Biology Division, Chalmers University of Technology, Gothenburg, Sweden*
13:15		**B8-2** **Superhydrophobic and superoleophobic properties enhancement on PDMS microstructure using simple flame treatment method** Nithi Atthi[1], Tanawat Janseng[2], Apidech Maneesong[2], Natthapol Kongto[2], Witsaroot Sripumkhai[1], Pattaraluck Pattamang[1], Oraphan Thongsook[1], Saranya Suntalelat[1], Jirawat Jantawong[1], Apichart Rodchanarowan[2], Nipapan Klunngien[1], Wutthinan Jeamsaksiri[1] *[1]Thai Microelectronics Center (TMEC), National Electronics and Computer Technology Center (NECTEC), Chachoengsao, Thailand, [2]Department of Materials Engineering, Faculty of Engineering, Kasetsart University, Bangkok, Thailand*	**C8-2** **Memristive behaviour of electrodeposited thermoelectric materials** Ian Mihailovic, Katrina Klösel, Christofer Hierold *Micro and Nanosystems, ETH Zürich, Zürich, Switzerland*	**D8-2** **Nanomechanical DNA resonator for DNA structural alterations studies** Monica Marini[1,2], Stefano Stassi[1], Marco Allione[2], Sergei Lopatin[3], Domenico Marson[4], Erik Laurini[4], Sabrina Pricl[4], Bruno Torre[2], Andrea Giugni[2], Manola Moretti[2], Peng Zhang[2], Candido Fabrizio Pirri[1], Carlo Ricciardi[1], Enzo Di Fabrizio[2] *[1]DISAT, Polytechnic of Turin, Turin, Italy, [2]SMILEs Lab, KAUST, Thuwal, Kingdom of Saudi Arabia, [3]Imaging and Characterization Core Lab, KAUST, Thuwal, Kingdom of Saudi Arabia, [4]DEA, University of Trieste, Trieste, Italy*

13:30	**A8-2** **Flexpol: Developing a bactericide adhesive film** Nikos Kehagias *Catalan Institute Of Nanoscience And Nanotechnology, Bellaterra, Barcelona, Spain*	**B8-3** **Design, fabrication and characterisation strategies for large area bactericidal polymer films** Francone A.[1], Retolaza A.[2], Ramiro J.[2], Merino S.[2], Vieira De Castro J.[3], Neves N.[3], Arana A.[4], Marimon J.[4], Sotomayor Torres C.[1,5], Kehagias N.[1] *[1]ICN2 - Catalan Institute of Nanoscience and Nanotechnology, [2]IK4-Tekniker, [3]Research Institute of Biomaterials, Biodegradables and Biomimetics, [4]University Hospital-Biodonostia Health Research Institute, [5]Institucio Catalana de Recerca i Estudis Avancats (ICREA), Spain*	**C8-3** **Electrostatically-coupled dopant atom quantum dot transistor measurement at room-temperature** Faris Abualnaja[1], Chen Wang[1], Vlad-Petru Veigang-Radulescu[1], Jonathan Griffiths[2], Aleksey Andreev[3], Mervyn Jones[1], Zahid Durrani[1] *[1]Imperial College London, London, United Kingdom, [2]University of Cambridge, Cambridge, United Kingdom, [3]Hitachi Cambridge, Cambridge, United Kingdom*	**D8-3** **Controlling DNA translocation in nanofluidic devices using topography** Franziska Esmek, Irene Fernandez-Cuesta *Hamburg University, Hamburg, Germany*
13:45	**A8-3** **Full-Scale Manufacturing of 200mm/300mm Wafers on a Fully Integrated Nanoimprint Lithography System** Wiesbauer H.[1], Chouiki M.[1], Thanner C.[1], Berger G.[1], Martens S.[2], Treiblmayr D.[1], Hartbaum J.[2], Eibelhuber M.[1] *[1]EVGroup, [2]Insitut für Mikroelektronik Stuttgart (IMS CHIPS), Germany*		**C8-4** **Sputtered ZnO nanostructure homojunctions fabricated on room temperature pre-patterned substrates** Deligeorgis G.[1], Kampylafka V.[2], Kostopoulos A.[3], Modreanu M.[4], Schmidt M.[5], Gagaoudakis E.[6], Tsagaraki K.[7], Kontomitrou V.[8], Konstantinidis G.[9], Kiriakidis G.[10], Aperathitis E.[11] *[1]Forth/iesl, [2]FORTH/IESL, [3]FORTH/IESL, [4]Tyndall National Institute, [5]Tyndall national Institute, Iceland [6]FORTH/IESL, [7]FORTH/IESL, [8]FORTH/IESL, [9]FORTH/IESL, [10]FORTH/IESL, [11]FORTH/IESL, Greece*	
14:00-14:15	**COFFEE BREAK**			

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	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A9: INDUSTRIAL II Chairs: T. Stomeo, Y. Georgiev	**SESSION B9: NANOFABRICATION** Chairs: N. Vainos, JH Oh	**SESSION C9: MATERIALS FOR PHOTONICS** Chairs: S. Merino, M. Lopez	**SESSION D9: LAB & ORGAN ON-CHIP** Chairs: K. Tsougeni, S. Keller
14:15	**A9-1** **All integrated mix & match direct-write nano- and microlithography platform based on local heat induced sublimation of polyphthalaldehyde resist** Felix Holzner[1], Achim Jehle[2], Diethard Peter[2], Samuel Bisig[1], Simon Bonanni[1], Philip Paul[2], Urs Duerig[1] *[1]Swisslitho AG, Zurich, Switzerland, [2]Heidelberg Instruments, Heidelberg, Germany*	**B9-1** **Materials characterization of gas assisted etch and deposition of focused Cs+ ion beam** Yariv Drezner[1], DYuval Greenzweig[1], Roy Hallstein[2], Rick Livengood[2], Amir Raveh[1], Adam Steele[3], Brenton Knuffman[3], Andrew Schwarzkopf[3] *[1]Intel Israel, Haifa, Israel, [2]Intel Corporation, Santa Clara, United States, [3]zeroK Nanotech, Gaithersburg, United States*	**C9-1** **Tuning Fluorophores Concentration and Their Residence Time in Zero-Mode Waveguides** Andrea Barbaglia[1,2], Michele Dipalo[1], Francesco Tantussi[1], Andrea Toma[1], Francesco De Angelis[1] *[1]Istituto Italiano di Tecnologia, Genova, Italy, [2]Dipartimento di Fisica, Università degli Studi di Genova, Genova, Italy*	**D9-1** **Lensless imaging strategies for micro-particles and bacterial colonies counting** Alexis Maire[1,3], Tona Yescas Gonzalez[1], Olivier Lecarme[2], Marc Zelsmann[1], Emmanuel Picard[3], Pierre Marcoux[4], David Peyrade[1] *[1]Univ. Grenoble Alpes, CNRS, LTM, Grenoble, France, [2]Smart Force Technologies, c/o LTM-CNRS CEA/LETI, Grenoble, France, [3]Univ. Grenoble Alpes, CEA, INAC, PHELIQS, SINAPS, Grenoble, France, [4]Univ. Grenoble Alpes, CEA, LETI, DTBS, SBSC, LCMI/LBAM, Grenoble, France*
14:30	**A9-2** **Advanced FIB Patterning Strategies for Photonic Devices** Achim Nadzeyka, Torsten Richter, Michael Kahl, Frank Nouvertné *Raith Gmbh, Dortmund, Germany*	**B9-2** **Lithium-Doping of ZnO: is it possible to chemically produce p-type ZnO?** George P. Papagergiou[1], Vassileios Psycharis[1], Maria Katsikini[2], Fani Pinakidou[2], Eleni Paloura[2], Eleni Makarona[1] *[1]Institute Of Nanoscience and Nanotechnology, NCSR Demokritos, Athens, Greece, [2]School of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece*	**C9-2** **Very High Refractive Index Transition Metal Dichalcogenide Photonic Conformal Coatings by Conversion of ALD Metal Oxides** Adam Schwartzberg, Christopher Chen, Jacopo Pedrini, Ashley Gaulding, Christoph Kastl, Scott Dhuey, Tevye Kuykendall, Giuseppe Calafiore, Francesca Toma, Stefano Cabrini, Shaul Aloni *The Molecular Foundry, Lawrence Berkeley National Labs, Berkeley, United States*	**D9-2** **On chip reconstitution of complex biological systems: a bridge between biology and mathematical models** Adele De Ninno[1], Francesca Romana Bertani[1], Annamaria Gerardino[1], Roberto Natalini[4], Elishan C. Braun[4], Gabriella Bretti[4], Giovanna Schiavoni[2], Fabrizio Mattei[2], Eugenio Martinelli[3], Arianna Mencattini[3], Luca Businaro[1] *[1]CNR - Institute Of Photonics And Nanotechnologies, [2]Istituto Superiore di sanità, [3]Università di Tor Vergata, Department of Electronic Engineering, [4]CNR-Istituto per le Applicazioni del Calcolo*

14:45	**A9-3** **New high etch resistant high resolution silsesquioxane based resist for DUV/EUV and e-beam lithography as long shelf-life and more sensitive alternative for HSQ** Franziska Grüneberger[1], Maik Gerngroß[1], Matthias Schirmer[1], Frank Heyroth[2], Georg Schmidt[2,3], Nicolas Pyka[4], Lothar Hahn[5] *[1]Allresist GmbH, Strausberg, Germany, [2]Institut für Physik, Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), Germany, [3]Interdisziplinäres Zentrum für Materialwissenschaften, Martin-Luther-Universität Halle-Wittenberg, Halle , Germany, [4]Raith GmbH, Dortmund, Germany, [5]Institute of Microstructure, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	**B9-3** **Development of van der Waals force based microscale joint for microscale assembly** Ki-hwan Jang[1], Min-Soo Kim[2], Jong Hyuk Im[1], Sung-Hoon Ahn[1,3] *[1]Department of Mechanical and Aerospace Engineering, Seoul National University, Seoul, South Korea, [2]Soft Robotics Research Center, Seoul National University, Seoul, South Korea, [3]Institute of Advanced Machines and Design, Seoul National University, Seoul, South Korea*	**C9-3** **Fabrication and novel applications of GaN-based microLED arrays** Jan Gülink[1,2], Michael Fahrbach[1,2], Hendrik Spende[1,2], Klaas Strempel[1,2], Tony Granz[1,2], Syed Asad Ali Zaidi[1], Hutomo Suryo Wasisto[1,2], Andreas Waag[1,2] *[1]Institute of Semiconductor Technology (IHT), TU Braunschweig, Braunschweig, Germany, [2]Laboratory for Emerging Nanometrology (LENA), TU Braunschweig, Braunschweig, Germany*	**D9-3** **3D structuration of porous PDMS by emulsion templating for the fabrication of cell culture scaffolds** Roberto Riesco[1,2], Louisa Boyer[1], Sarah Blosse[1,2], Pauline Lefebvre[3], Pauline Assemat[3], Thierry Leichle[1], Angelo Accardo[1], Laurent Malaquin[1] *[1]LAAS-CNRS, Toulouse, France, [2]INSA, Toulouse, France, [3]IMFT, Toulouse, France*
15:00	**A9-4** **Multiscale Position Correction for Automated Device-scale STM Lithography** James Owen, Joseph Lake, Ehud Fuchs, Robin Santini, John Randall *Zyvex Labs, Richardson, United States*	**B9-4** **Electrically controlled modification of polymer film structure of semiconductor – insulator composites casted by horizontal-dipping** Kamil Awsiuk[1], Jakub Rysz[1], Mateusz M. Marzec[2], Paweł Dąbczyński[1], Andrzej Budkowski[1] *[1]M. Smoluchowski Institute Of Physics, Jagiellonian University, Łojasiewicza 11, 30-348 Kraków, Poland, Krakow, Poland, [2]Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Krakow, Poland*	**C9-4** **Magnetic Dipole Resonance Induced Visible Luminescence from Hundred Nanometers of Silicon Particles** Sih Wei Chang, Yi-Chuan Tseng, Yang-Chun Lee, Hsuen-Li Chen *Nation Taiwan University, Taipei, Taiwan*	
15:15-15:30	**SHORT BREAK**			

THURSDAY SEPTEMBER 26TH, 2019

Scientific Program

	NEFELI HALL	DELPHI HALL	JUPITER HALL	ATHENA HALL
	SESSION A10: RESISTS Chairs: T. Watanabe, Y. Georgiev	**SESSION B10: MICROFABRICATION** Chair: N. Kehagias, V. Vamvakas	**SESSION C10: SENSORS & MEMS** Chairs: H. Nishikawa, P.Dimitrakis	**SESSION D10: CHEM. SENSORS & BIOSENSORS II** Chairs: K. Misiakos, P. Petrou
15:30	**A10-1** **New PDMAEMA based block copolymers for emerging nanotechnologies** Anastasia Nika[1,2], Theodore Manouras[3], Panagiotis Argitis[2], Maria Vamvakaki[3,4], Margarita Chatzichristidi[1] *[1]National And Kapodistrian University Of Athens, [2]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", [3]Department of Materials Science and Technology, University of Crete, [4]Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas*	**B10-1** **Manufacturing of local defined nano- and microstructures for semiconductor devices by dewetting phenomena** Owen Ernst[1], Katharina Eylers[1], Felix Lange[1,2], Jörn Bonse[3], Jörg Krüger[3], Torsten Boeck[1] *[1]Leibniz-Institut für Kristallzüchtung (IKZ), Berlin, Germany, [2]Brandenburgische Technische Universität Cottbus-Senftenberg (BTU CS), Senftenberg, Germany, [3]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany*	**C10-1** **Highly sensitive and selective NO2 gas sensor using patterned FTO electrodes** Yoojong Kim[1], So-Young Bak[1], Jeongseok Lee[1], Se-Hyeong Lee[1], Kyoungwan Woo[1], Sanghyun Lee[2], Moonsuk Yi[1] *[1]Department Of Electronics Engineering, Pusan National University, Geumjunggu, South Korea, [2]Department of Smart Hybrid Engineering, Pusan National University, Geumjunggu, South Korea*	**D10-1** **Engineering light collection volumes with microstructured tapered optical fibers for optical readout of neural activity monitoring** Emanuela Maglie[1,2], Marco Pisanello[1], Filippo Pisano[1], Antonio Balena[1,2], Marco Bianco[1,2], Barbara Spagnolo[1], Bernardo L Sabatini[3], Massimo De Vittorio[1,2], Ferruccio Pisanello[1] *[1]Istituto Italiano di Tecnologia, Center for Biomolecular Nanotechnologies, Arnesano, Italy, [2]Dipartimento di Ingegneria dell'Innovazione, Università del Salento, Lecce, Italy, [3]Department of Neurobiology, Howard Hughes Medical Institute Harvard Medical School, Boston, USA*
15:45	**A10-2** **Evaluation of RE-650 as a positive tone resist for electron beam lithography with high plasma etch durability** Mingsai Zhu[1], Meichong Yu[2], Jianan Deng[1], Yuying Xie[1], Yifang Chen[1] *[1]Nanolithography and application research group, School of Information Science and Technology, FUDAN, China, [2]Han-Top Photo-materials C*	**B10-2** **Templated dewetting of ultra-long wires for a Si-based circuit** Monica Bollani[1], Marco Salvalaglio[2], Abdennacer Benali[3], Mohammed Bouabdellaoui[3,4], Alexey Fedorov[1], Axel Voigt[2], Luc Favre[3], Jean Benoit Claude[3], David Grosso[2], Antoine Ronda[3], Isabelle Berbezier[3], Marco Abbarchi[3] *[1]Institute of Photonics and Nanotechnologies of CNR (IFN -CNR), Como, [2]Institute of Scientific Computing, Technische Universitat, Dresden, [3]IM2NP of CNRS, Marseille, [4]Laboratory of Physics of Condensed Matter and Renewable Energy, Hassan II University of Casablanca, Mohammedia, Morocco*	**C10-2** **Single-Mode Polymer Ridge Waveguide Integration of Organic Thin-Film Laser** Marko Cehovski[1,3], Jing Becker[2], Ouacef Charfi[1,3], Pascal Porten[1], Hans-Hermann Johannes[1,3], Claas Müller[2], Wolfgang Kowalsky[1,3] *[1]TU Braunschweig, IHF, Braunschweig, Germany, [2]University of Freiburg, FIT, Freiburg, Germany, [3]Cluster of Excellence PhoenixD , Hannover, Germany*	**D10-2** **Electrochemical Sensing Based on Inkjet-Printed Reduced Graphene Oxide on a Flexible Substrate** Hamed Shamkhalichenar[1], Jin-Woo Choi[1,2] *[1]Louisiana State University, Baton Rouge, United States, [2]Center for Advanced Microstructures and Devices Louisiana State University, United States*

16:00	**A10-3** **Environmentally friendly nanofabrication with cellulose and water** Dore C[1], Osmond J[2], Mihi A[1] *[1]ICFO-The Institute of Photonic Sciences, [2]Institut de Ciència de Materials de Barcelona, Spain*	**B10-3** **Deposition and optimization of Schottky junctions by Atomic Layer Deposition for piezotronic strain sensors** Raoul Joly[1,2], Stéphanie Girod[1], Noureddine Adjeroud[1], Tai Nguyen[1,2], Kevin Menguelti[1], Mohamed El Hachemi[1], Patrick Grysan[1], Sébastien Klein[1], Jérôme Polesel[1] *[1]Luxembourg Institute of Science and Technology (LIST), Belvaux, Luxembourg, [2]University of Luxembourg, Limpertsberg Campus, Luxembourg*	**C10-3** **A MEMS based capacitive resonator designed for the detection of the target analyte** Serdar Tez *Pamukkale University, Engineering Faculty, Department of Electric And Electronics Engineering, Denizli, Turkey*	**D10-3** **Microelectrode Arrays with Integrated Pneumatic Cavities for Electrode Position Control in Retinal Prosthesis** Yuanhao Xu, Stella W. Pang *City University of Hong Kong, Kowloon Tong, Kowloon, Hong Kong*
16:15	**A10-4** **Synthesis and Photolithographic Characterization of Phenolic Molecular Resists under Electron-beam and Extreme UV Irradiation** Jin-Kyun Lee[1], Jeong-Seok Mun[1], Hyun-Taek Oh[1], Kanghyun Kim[2], Sangsul Lee[2] *[1]Inha University, Incheon, South Korea, [2]Pohang Accelerator Laboratory, Postech, Pohang, South Korea*	**B10-4** **Patterning Platinum using CMP and plasma etching industrially compatible processes** Adham Elshaer, Romain Stricher, Maxime Darnon, Dominique Drouin, Serge Ecoffey *LN2, CNRS, Université de Sherbrooke, 3IT, Sherbrooke, Canada*	**C10-4** **Integration of piezoelectric nanostructures with MEMS by inkjet printing** Marc Gomez, Christina Martinez, Marcos Duque, Ana Moya, Gonzalo Murillo *Microelectronics Institute of Barcelona, Bellaterra, Spain*	**D10-4** **Effects of the Acid-base property of the Dopant on the SnO2 Gas Sensor** Zhenyu Yuan, Rui Li, Liangyu Fu, Wenhui Chuai, Zhongming Guo, Zhaoyin Tu, Fanbo Kong *Northeastern University, China, Shenyang, China*
16:30-16:35	**SHORT BREAK**			

THURSDAY SEPTEMBER 26TH, 2019

Scientific Program

	JUPITER HALL
	Chairs: P. Dimitrakis, E. Gogolides
16:35-17:20	**Plenary 8** **New Materials and Devices for Interfacing with the Brain** George Malliaras *University of Cambridge, UK*

17:20-17:30	**ANNOUNCEMENTS AND CLOSING REMARKS**

Poster Sessions

45th International Conference on MNE 2019

Poster Session

Wednesday, 25th, 2019 (Odd Numbers)

PA – Nanopatterning

PA01
Efficient Fabrication of Soft Polymer Microcantilevers from Dry Film Photoresist for Chemical Sensor Applications
Madeleine Nilsen[1], Steffen Strehle[2]
[1]Ulm University, [2]Ilmenau University of Technology

PA05
Comparative study of theoretical contrast between extreme ultraviolet and electron beam lithography
Kanghyun Kim[1], Byeong-Gyu Park[2], Hyun-Taek Oh[3], Jin-Kyun Lee[3], Geunbae Lim[1], Sangsul Lee[2]
[1]Postech, [2]Pohang Accelerator Laboratory(PAL), [3]Inha University

PA07
Machine learning based technique towards smart laser fabrication of CGH
Aggeliki Anastasiou[1], Evangelia Zacharaki[2], Dimitris Alexandropoulos[1], Konstantinos Moustakas[2], Nikolaos Vainos[1]
[1]Dept. of Material Science, University Of Patras, [2]Dept. of Electrical and Computer Engineering, University Of Patras

PA09
Fabrication of Holographic Optical Elements on Silver by Nanosecond IR Laser Source
Dimitris Alexandropoulos[1], Simone Mazzucato[2], Vaggelis Karoutsos[1], Christina (Tanya) Politi[3], Nikos Vainos[1]
[1]Dept. of Material Science, University Of Patras, [2]SISMA S.p.A., [3]Dept. of Informatics and Telecommunications, University of Peloponnese

PA11
Localized Laser Pyrolysis of SU-8 by Addition of Absorber
Emil Ludvigsen[1], Nina Ritter Pedersen[1], Xiaolong Zhu[2], Rudolphe Marie[2], David M. A. Mackenzie[3], Dirch H. Pedersen[3], Anders Kristensen[2], Jenny Emnéus[4], Stephan Sylvest Keller[1]
[1]DTU Nanolab, Technical University Of Denmark, [2]DTU Health Tech, Technical University of Denmark, [3]DTU Physics, Technical University of Denmark, [4]DTU Bioengineering, Technical University of Denmark

PA13
E-beam lithography (EBL) with conductive layer between resist and sapphire substrate
Silvia Diewald, Gernot Goll
Center for Functional Nanostructures – Nanostructure Service Laboratory (CFN-NSL), Karlsruhe Institute of Technology (KIT)

PA15
Comparison of positive and negative high resolution e-beam processes for the fabrication of nanoconstrictions
Maik Gerngroß[3], Franziska Grüneberger[3], Stephanie Lake[1], Philip Dürrenfeld[1], Frank Heyroth[2], Matthias Schirmer[3], Georg Schmidt[1,2]
[1]Institut für Physik, Martin-Luther-Universität Halle-Wittenberg, [2]Interdisziplinäres Zentrum für Materialwissenschaften, Martin-Luther-Universität Halle-Wittenberg, [3]Allresist GmbH

Tuesday, 24th, 2019 (Even Numbers)

PA – Nanopatterning

PA02
AquaSAVE™: Antistatic Agent for Electron Beam Lithography
Takahiro Mori, Akira Yamazaki
Mitsubishi Chemical Corporation

PA04
Novel Lift-off Process for DUV Displacement Talbot Lithography
Mariusz Graczyk, Victor J. Gómez, Maria Huffman, Ivan Maximov
Solid State Physics, University of Lund

PA06
SU-8 alternative - Atlas 46 and enhanced processing for electroplating applications
Franziska Grüneberger[1], Maik Gerngroß[1], Matthias Schirmer[1], Bozena Matuskova[2], Martin Eibelhuber[2], Tobias Zenger[2], Thomas Uhrmann[2], Martin Weinhart[2]
[1]Allresist GmbH, [2]EV Group

PA08
Laser printing of Cu electrical circuits on glass substrates
Konstantina Tourlouki, Dimitris Alexandropoulos
Dept. of Material Science, University of Patras

PA10
High-throughput DTL/optical-hybrid lithography for fabricating high-density silicon nanopillar arrays for field emission
Dirk Jonker[1], R. M. Tiggelaar[3], J. W. Berenschot[1], N. R. Tas[1], A. van Houselt[2], H. J. W. Zandvliet[2], J. G. E. Gardeniers[1]
[1]Mesoscale Chemical Systems group, University of Twente, [2]Physics of Interfaces and Nanomaterials group, University of Twente, [3]NanoLab cleanroom, University of Twente

PA12
Nanofabrication of thick zone plates for hard X-ray optics using SML resist
Wang Zhuangzhuang, Shanshan Xie, Jingyuan Zhu, Yifang Chen
Fudan University

PA14
Recent advances in ice lithography for 3D nanofabrication
Ding Zhao[1], Anna Elsukovaa[1], Marietta Batzer[2], Brendan Shields[2], Patrick Maletinsky[2], Marco Beleggia[1], Anpan Han[3]
[1]DTU Nanolab, Technical University of Denmark, [2]Department of Physics, University of Basel, [3]Department of Mechanical Engineering, Technical University of Denmark

PA16
HSQ alternative Medusa 82 for gray-scale lithography
Maik Gerngroß[1], Franziska Grüneberger[1], Matthias Schirmer[1], Paul Voigt[2], Uwe Hübner[2]
[1]Allresist GmbH, [2]Leibniz-Institute of Photonic Technology

Wednesday, 25th, 2019 (Odd Numbers)

PA17
An optimal dosage test in electron beam lithography for GaN nanoLEDs fabrication

Syed Asad Ali Zaidi[1], Tony Granz[1,2], Jan Gulink[1,2], Klaas Strempel[1,2], Hutomo Suryo Wasisto[1,2], Andreas Waag[1,2]

[1]Institute Of Semiconductor & Technology, [2] Laboratory for Emerging Nanometrology

PA19
High throughput Mix and Match nano lithography based on Scanning Laser Beam -, Field-Emission Scanning Probe-, and Nano Imprint Lithography

Martin Hofmann[1], Laura Weidenfeller[2], Shraddha Supreeti[3], Johannes Kirchner[2], Mathias Holz[4], Christoph Reuter[4], Stephan Mechold[1], Eberhard Manske[2], Ivo W. Rangelow[1]

[1]Ilmenau University of Technology, Department of Micro- and Nanoelectronic Systems, Gustav-Kirchhoff-Str. 1, 98693 Ilmenau, Germany, [2]Ilmenau University of Technology, Institute for Process Measurement and Sensor Technology, Gustav-Kirchhoff_-Str. 1, 98693 Ilmenau, Germany, [3]Ilmenau University of Technology, Department of Microsystems Technology, Max-Plack-Ring 12, 98693 Ilmenau, Germany, [4]Nanoanalytik GmbH, Ehrenbergstr. 1, 98693 Ilmenau, Germany

PA21
Power-law short-range point-spread function in electron-beam lithography

Marcus Albrechtsen[1], Søren Stobbe[1,2]

[1]Department of Photonics Engineering, DTU Fotonik, Technical University Of Denmark, [2]Beamfox Technologies ApS

PA23
Sub40 nm planar Al nanowires using two-layer resis stacks

Fotis Kalaitzakis[1], George Papageorgiou[1], V. Ryazanov[2], K. Arutunov[3], Pascal Normand[1], Panagiotis Dimitrakis[1]

[1]Institute of Nanoscience & Nanotechnology, NCSR "Demokritos", [2]Institute of Solid State Physics, Russian Academy of Sciences, [3]Institute for Electronics and Mathematics, High School of Economics

PA25
Fluorescent ionic liquid structures fabricated by e-beam lithography

Dominik Kowal[1], Krzysztof Rola[1], Joanna Cybinska[1,2], Marcin Skorenski[1], Adrian Zajac[3], Marcin Smiglak[3], Slawomir Drobczynski[4], Katarzyna Komorowska[1,4]

[1]Lukasiewicz Research Network - PORT Polish Center For Technology Development, [2]Faculty of Chemistry, University of Wroclaw, [3]Poznan Science and Technology Park, [4]Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology

PA27
Impact of plasma treatment on the pattern fidelity of nanostructured polymer surfaces

Martin Eibelhuber[1], Anna Dudus[1], Jacek Gasiorowski[1], Ruxandra-Aida Barb[1], Christine Thanner[1], Stephan Martens[2], Julian Hartbaum[2]

[1]Evgroup, [2]Insitut für Mikroelektronik Stuttgart (IMS CHIPS)

Tuesday, 24th, 2019 (Even Numbers)

PA18
Magnetic skyrmions in thin Co/Pt/Au multilayer nanodots inspected by a tailored magnetic probe

Jan Soltys, Iuliia Vetrova, Tomas Scepka, Michal Mruczkiewicz, Jan Derer, Stefan Gazi, Vladimir Cambel

Institute of Electrical Engineering

PA20
Preparation of Micro- and Nanostructures by Ion or Electron Beam Lithography and Following Selective Wet Etching

Tomáš Šamořil[1], T. Šikola[2]

[1]Central European Institute of Technology, [2]Institute of Physical Engineering, Brno University of Technology

PA22
Resistless SixN patterns fabrication by e-beam lithography

Kornelia Indykiewicz, Bogdan Paszkiewicz, Regina Paszkiewicz

Wroclaw University of Science and Technology

PA26
Fabrication and application of high-performance flexible transparent nanomesh electrodes

Sung-il Chung[1], Pan Kyeom Kim[1], Tae-gyu Ha[1], Eung Sug Lee[2], Kwang Young Kim[2]

[1]Korea Electrotechnology Research Institute, [2]Korea Institute of Machinery & Materials

PA28
Transfer durability of line-patterned replica mould made of high hardness UV-curable resin

Tetsuma Marumo, Jun Taniguchi

Tokyo University of Science

PA30
Fabrication of composite-electrode for SOFC via ultra violet nanoimprint lithography

Ryota Akama[1], Takao Okabe[1], Kazuyoshi Sato[2], Naoki Shikazono[3], Jun Taniguchi[1]

[1]Tokyo University of Science, [2]Gunma University, [3]Institute of Industrial Science, The University of Tokyo

PA32
Blue light nanoimprint lithography for patterning a positive-tone EB resist

Takao Okabe, Haruki Matsumoto, Jun Taniguchi

Tokyo University of Science

PA34
Hot punching: A versatile tool to fabricate microparticles

Ritika Petersen[1,2], Stephan Keller[1,2], Anja Boisen[2]

[1]DTU Nanolab, Technical University of Denmark, [2]DNRF and Villum Fonden Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics, IDUN, DTU Health Tech

Poster Session

Wednesday, 25th, 2019 (Odd Numbers)

PA29
Fabrication of microchannel via UV-NIL and EBL using UV curable positive-tone EB resist

Haruki Matsumoto, Takao Okabe, Professor Jun Taniguchi
Tokyo University of Science

PA31
Moth-eye structured mould using sputtered glassy carbon layer for large scale application

Tomoya Yano[1], Hiroyuki Sugawara[2], Jun Taniguchi[1]
[1]Tokyo University of Science, [2]GEOMATEC Co., Ltd.

PA33
Analysis of surface cracks in VUV-hardened PDMS by means of video evaluation

Miriam Leifels, Andre Mayer, Patrick Görrn, Hella-Christin Scheer
University Of Wuppertal

PA39
Magnetic- plasmonic nanoparticles fabricated with high throughput step and repeat nanoimprint lithography

Michael Haslinger[1], Tina Mitteramskogler[1], Astrit Shoshi[2], Stefan Schrittwieser[3], Joerg Schotter[3], Hubert Brueckl[2], Michael Muehlberger[1]
[1]Profactor Gmbh., [2]Danube University Krems, Department for Integrated Sensor Systems, [3]AIT Austrian Institute of Technology, Molecular Diagnostics

PA41
Computational study on molecular size dependence on pressing and de-molding process in nanoimprint lithograph

Reo Sakata[1], Masaaki Yasuda[1], Yuya Miyashita[1], Kazuhiro Tada[2], Masamitsu Shirai[1], Hiroaki Kawata[1], Yoshihiko Hirai[1]
1Osaka Prefecture University, 2National Institute of Technology, Toyama College

PA43
Displacement Talbot Lithography for Fabrication of Large Area Nanoimprint Stamps

Mariusz Graczyk, Muhammad Asif, Ivan Maximov
Lund University

PA45
A novel process to realize 4H-SiC nanowire arrays

Maria Androulidaki[2], Maximilien Cottat[1], Antonios Stavrinidis[2], Cecile Gourgon[1], Camille Petit-Etienne[1], Edwige Bano[3], George Konstantinidis[2], Jumana Boussey[1], Konstantinos Zekentes[2,3]
[1]Laboratoire des Technologies de la Microélectronique, [2]MRG-IESL/ FORTH, Vassilika Vouton, PO Box 1385 Heraklion, Greece, [3]Grenoble-INP, IMEP-LAHC

PA49
STM imaging enhancements for better features identification

Ehud Fuchs, Joseph Lake, James Owen, John Randall
Zyvex Labs

Tuesday, 24th, 2019 (Even Numbers)

PA36
Imprint-induced grain growth in perovskite layers

Andre Mayer, Neda Pourdavoud, Tobias Haeger, Ralf Heiderhoff, Miriam Leifels, Johannes Rond, Johannes Staabs, Patrik Görrn, Thomas Riedl, Hella-Christin Scheer
University of Wuppertal

PA38
Shear force measurement of actuated, gecko-inspired adhesion elements with hierarchical PDMS pattern

Joachim Zajadacz[1], Klaus Zimmer[1], Pierre Lorenz[1], Andre Mayer[2], Marc Papenheim[2], Hella-Christin Scheer[2]
[1]Leibniz-Institute of Surface Engineering, [2]School of Electrical, Information and Media Engineering, University of Wuppertal,

PA40
Combining Multilayer Multimaterial Nanoimprinting and Inkjet Printing

Michael Mühlberger, Amiya Ranjan Moharana, Helene Außerhuber, Sonja Kopp, Tina Mitteramskogler, Daniel Fechtig
PROFACTOR GmbH

PA42
Molecular simulation study of demolding process in UV nanoimprint

Masanori Koyama, Keisuke Nakajima, Masamitsu Shirai, Hiroaki Kawata, Yoshihiko Hirai, Masaaki Yasuda
Osaka Prefecture University

PA44
Nanoimprint Lithography as New Route towards 3-dimensionally structured substrates for in-vitro cell cultures

Patrick Schuller[1], M. Rothbauer[1], Peter Ertl[1], A. Moharana[2], Michael Muehlberger[2], E. Bertagnolli[1], Heinz Wanzenboeck[1]
[1]TU Wien - Vienna University of Technology, [2]Profactor GmbH

PA46
Flexible Fabrication Method of Waveguide Integrated Laser Source by CNP Process

Jing Becker[1,4], Marko Čehovski[2,3], Reinhard Caspary[2,3], Hans-Hermann Johannes[2,3], Wolfgang Kowalsky[2,3], Claas Mueller[1,4]
[1]Freiburger Zentrum für interaktive Werkstoffe und bioinspirierte Technologien (FIT), Albert-Ludwigs-Universität Freiburg, [2]Institut für Hochfrequenztechnik, Technische Universität Braunschweig, [3]Cluster of Excellence PhoenixD (Photonics, Optics, and Engineering – Innovation Across Disciplines), [4]Servicecenter Mechanische Mikrofertigung, IMTEK, Albert-Ludwigs-Universität Freiburg

PA48
Towards faster self-assembly in block copolymer films: the use of plasma treatment

Elsa Giraud[1,2], Tandra Ghoshal[1,2], M.A. Morris[1]
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PA53
Modified fluorous developer solutions with additives for Orthogonal Photolithography of organic light emitting diode displays

Jongchan Son[1], Han Young Shin[2], Yu Min Choi[2], Jin-Kyun Lee[1], Byung Jun Jung[2]

[1]Inha University, [2]University of Seoul

PA55
Brilliant Fluorescent Resists for E-beam and Photolithographic Applications

Franziska Grüneberger[1], Maik Gerngroß[1], Matthias Schirmer[1], Thomas Steglich[2], Philipp Bastian[3], Marita Steffen[3], Michael Kumke[3]

[1]Allresist GmbH, [2]Präzisionsoptik Gera GmbH, [3]Physical Chemistry, Institute of Chemistry, University of Potsdam

PA57
In-situ monitoring of development step of high-resolution e-beam resists

Theodora Mpatzaka[1], Grigoris Zisis[1,2], George Papageorgiou[2], Dimitrios Goustouridis[1,3], Ioannis Raptis[1,2]

[1]ThetaMetrisis SA, Athens, Greece, [2]INN, NCSR 'Demokritos', Athens, Greece, [3]Dept. Electrical & Electronics Eng., University of West Attica, Athens, Greece

PA59
Electron beam direct writing of polymer microstructures using a solvent-free ionic liquid as a resist

Krzysztof Rola[1], Adrian Zajac[2], Andrea Szpecht[2,3], Joanna Cybinska[1,4], Marcin Smiglak[2], Katarzyna Komorowska[1,5]

[1]LUKASIEWICZ Research Network – PORT Polish Center For Technology Development, [2]Poznan Science and Technology Park, [3]Faculty of Chemistry, Adam Mickiewicz University, [4]Faculty of Chemistry, University of Wroclaw, [5]Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology

PA61
Vertical High Aspect Ratio Silicon Via Etching for TSV Applications

Stokeley K[1], Ren Z[1]

[1]Oxford Instruments, Bristol, United Kingdom

PA63
Surface functionalization by patterning and etching of metals using chlorine plasmas

Guillaume Le Dain[1], Feriel Laourine[2], Ahmed Rhallabi[1], Aurelie Girard[1], Christophe Cardinaud[1], Thierry Czerwiec[2], Stephane Guilet[3], Daniel Turover[4], Gregory Marcos[2]

[1]Institut Des Materiaux Jean Rouxel, Cnrs, [2]Institut Jean Lamour, [3]Centre de Nanosciences et Nanotechnologies, [4]SILSEF

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PA52
Process optimization of Medusa 82 resist by electron beam lithography

Th. Mpatzaka[1], Grigorios Konstantinos Zisis[1,2], Vasilis Vamvakas[2], Ioannis Raptis[1,2], George Papageorgiou[2], C. Kaiser[3], T. Mai[3], Mr. Matthias Schirmer[3], Maik Gerngroß[3]

[1]ThetaMetrisis SA, [2]NCSR "Demokritos", [3]Allresist GmbH

PA54
Time- and cost-effective fabrication of micro-structured sample holders for serial crystallography experiments

Miriam Barthelmess[1], Ville Nissinen[2], Petri Karvinen[2], Pontus Fischer[1], Tim Pakendorf[1], Karol Bustos[1], Gisel Peña[1], Henry N. Chapman[1], Alke Meents[1,2]

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PA56
A new specifically tailored resist for UV-NIL using gas permeable soft stamp and a study of its etching behaviour on fused silica substrates

Shuhao Si[1], Martin Messerschmidt[2], Manuel Thesen[2], Arne Schleunitz[2], Gabi Grützner[2], Stefan Sinzinger[1]

[1]Technische Universität Ilmenau, [2]micro resist technology GmbH

PA60
Deep reactive ion etching of grass-free widely spaced periodic 2D structure

Chantal Myrielle Silvestre, Henri Jansen, Ole Hansen

Technical University of Denmark, DTU Nanolab

PA62
Fabrication of decorated nanopillar arrays for silicon light trapping enhancement in solar cell applications

Jordi Llobet[1], Carlos Calaza[1], Mariana Antunes[1], Helder Fonseca[1], Sofia Martins[1], Yevgeny Faingold[2], Shay Fadida[2], Ashish Prajapati[2], Gil Shalev[2], João Gaspar[1]

[1]International Iberian Nanotechnology Laboratory, [2]Ben-Gurion University of the Negev

PA64
Cryogenic etching for large area pattern transfer into silicon of Mix-and-Match structured resist layers

Laura Weidenfeller[1], Martin Hofmann[2], Johannes Kirchner[1], Mathias Holz[3], Christoph Reuter[3], Stephan Mechold[2], Eberhard Manske[1], Ivo W. Rangelow[2]

[1]Ilmenau University of Technology, Institute for Process Measurement and Sensor Technology, [2]Ilmenau University of Technology, Department of Micro- and Nanoelectronic Systems, 3Nanoanalytik GmbH

PA66
Low-temperature etching of porous low-k dielectrics in C2F4Br2 plasma

Andrey Miakonkikh[1,2], Askar Rezvanov[2,3], Alexey Vishnevskiy[4], Konstantin Rudenko[1,2]

[1]Valiev Institute For Physics And Techology of Russian Academy of Sciences, [2]Moscow Institute of Physics and Technology (MIPT), [3]Molecular Electronics Research Institute (JSC MERI), [4]MIREA – Russian Technological University (RTU MIREA)

Poster Session

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PA65
A short post-processing method for high aspect ratio trenches after Bosch etching
Henk-Willem Veltkamp[1], Yiyuan Zhao[1], Meint de Boer[1], Remco Wiegerink[1], Joost Lötters[1,2]
[1]University of Twente, [2]Bronkhorst High-Tech BV

PA67
Cobalt subtractive etch for advanced interconnects
Alexander Rogozhin, Andrey Miakonkikh, Andrey Tatarintsev, Konstantin Rudenko
Valiev Institute of Physics and Technology Of Russian Academy of Sciences

PA69
A study of the effect of bilayer resist sensitivity difference on the T shape gate profiles
Yuying Xie, Zhiqiang Chen, Jianan Deng, Mingsai Zhu, Yifang Chen
Nanolithography and Application Research Group, Fudan University

PA71
Direct Monte-Carlo simulation of dry e-beam etching of resist
Alexander Rogozhin[1], Fedor Sidorov[1,2], Mark Bruk[1], Eugene Zhikharev[1]
[1]Valiev Institute of Physics and Technology of Russian Academy of Sciences, [2]Moscow Institute of Physics and Technology

PA73
AFM integrated with a SEM for correlative imaging, 3D-metrology and nanofabrication
Martin Hofmann[1], Mathias Holz[2], Alexander Reum[2], Laura Weidenfeller[3], Stephan Mechold[1], Eberhard Manske[3], Tzvetan Ivanov[1], Ivo W. Rangelow[1]
[1]Department of Micro- and Nanoelectronic Systems, [2]Nanoanalytik GmbH, [3]Institute for Process Measurement and Sensor Technology

PA75
AFM tip shape characterization and measurement correction through the use of e-beam nanopillar standards with optimized sharpness
George Papageorgiou[1], V. Constantoudis[1,2], R. Koops[3], P. Dimitrakis[1]
[1]NCSR "Demokritos", [2]Nanometrisis p.c., [3]VSL

PA77
A hybrid modeling framework for the investigation of roughness formation during plasma etching of polymeric surfaces
George Memos[1,2], Elefterios Lidorikis[2], George Kokkoris[1]
[1]Institute of Nanoscience and Nanotechnology NCSR "Demokritos", [2]Department of Materials Science and Engineering, University of Ioannina

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PA68
Anisotropic plasma etching of Silicon in gas chopping process by alternating steps of oxidation and etching
Andrey Miakonkikh, Sergey Averkin, Konstantin Rudenko, Vladimir Lukichev
Valiev Institute for Physics and Techology of Russian Academy of Sciences

PA70
Optimum design of a 740 mm-long lens mount for fast line-beam proximity exposure process producing fine patterns with 5 μm width
ChangKyu Lee[1], Hyeondong Yang[1], Sang Gil Ryu[2], Je Hoon Oh[1]
[1]Hanyang University, [2]Philoptics Co. Ltd

PA72
High throughput AFM wafer inspection with parallel active cantilevers
Mathias Holz[2], Christoph Reuter[2], Ahmad Ahmad[2], Martin Hofmann[1], Alexander Reum[2], Tzvetan Ivanov[1], Stephan Mechold[1], Ivo W. Rangelow[1]
[1]Department of Micro- and Nanoelectronic Systems, [2]Nanoanalytik GmbH

PA74
Improving the accuracy of Line Edge Roughness measurement using Hidden Markov Models
George Papavieros[1,2,4], Vassilios Constantoudis[1,2], Ioannis Kontoyiannis[3], Eva Giannatou[2], Evangelos Gogolides[1,2]
[1]NCSR Demokritos/ Institute of Nanoscience and Nanotechnology, [2]Nanometrisis P.C., [3]University of Cambridge, [4]Aristotle University of Thessaloniki, Thessaloniki

PA76
SEM Inspection of Nanowire Devices: Contact Inspection, Resistance and Capacitance Measurement and Buckling Evaluation
Takeyoshi Ohashi[1], Kazuhisa Hasumi[2], Masami Ikota[2], Gian Lorusso[3], Hans Mertens[3], Liesbeth Witters[3], Naoto Horiguchi[3]
[1]Hitachi, Ltd., [2]Hitachi High-Technologies Corporation, [3]imec

PA78
Titanium Nitride Plasmonic Surfaces via Nanosphere Lithography
Spyros Kassavetis[1], S. Panos[2], D. Tselekidou[1], A. Theodosiou[1], P. Patsalas[2]
[1]Nanotechnology Lab LTFN, Physics Department, Aristotle University of Thessaloniki, Thessaloniki, [2]Physics Department, Aristotle University of Thessaloniki, Thessaloniki

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PB – Nanofabrication

PB01
Selective Area Deposition via Polymer Brush Films
Ross Lundy, Pravind Yadav, Michael A. Morris
School of Chemistry, AMBER@CRANN, Trinity College Dublin

PB03
Novel Fabrication Method for Diamond-Shaped Silicon Nanowires on (100)-Oriented Single Crystal Silicon
Yunqian He[1,2], Yi Yang[1,2], Yuelin Wang[1], Tie Li[1]
[1]SIMIT, CAS, [2]UCAS

PB05
Design and fabrication of hierarchical multi-scale structures on curved surface
Na Eun Yeo[1], Doo-in Kim[2], Young-Ho Ha[3], Myung Yung Jeong[1,4]
[1]Department of Cogno-mechatronics Engineering, Pusan National University, [2]Opto-mechatronics Engineering Research Institute, Pusan National University, [3]Nano Convergence Center, Gyeongnam Technopark, [4]Department of Opto-mechatronics Engineering, Pusan National University

PB07
Engineering the Oxide/Metal interface through the insertion of a buffer layer: self-organized formation of CoO nanostructures on Fe(001)
Alberto Brambilla, Andrea Picone, Dario Giannotti, Marco Finazzi, Lamberto Duò, Franco Ciccacci
Dipartimento Di Fisica, Politecnico Di Milano

PB09
Fabrication of metal-nanopillar nanostructures for plasmomechanical applications
Zubair Buch, Pedram Sadeghi, Silvan Schmid
TU Wien

PB11
Selective electrochemical wet etching for 3D Ni/Cu electrode
Seon-Yong Hwang, Hyeong-Ho Park, Ji Hwang Lee, Chang-Hwan Kim, Keun-Woo Lee, Ho Kwan Kang
Korea Advanced Nanofab Center

PB13
Evaluation of etching characteristics on titanium-assisted chemical vapor etching of silicon dioxide
Hironobu Nishida, Warisawa Shinichi , Kometani Reo
Graduate School Of Frontier Sciences, The University Of Tokyo

PB15
Emerging ultrafast-laser-assisted and conductive nanofiber fabrication on flexible graphene-based substrate for gas detection
Tien-li Chang[1], Cheng-Ying Chou[1], Ya-Wei Lee[2], Jing-Yi Yang[1]
[1]Department of Mechatronic Engineering, National Taiwan Normal University, [2]Department of Mechanical and Aerospace Engineering, Chung Cheng Institute of Technology, National Defense University

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PB – Nanofabrication

PB02
Nanostructure fill with conductive transparent oxide with supercritical CO2 intending to applying to porous Si-based light emitting devices
Eiichi Kondoh[1], Akemi Shioda[1], Lianhua Jin[1], Bernard Gelloz[2]
[1]University of Yamanashi, [2]Nagoya University

PB04
Towards Faster EBID Growth Using MeCpPtMe3 in a Desktop SEM
Aya Mahgoub, C.W Hagen
Tu Delft

PB08
Silicon Oxide Compatible Etching Process For Oxynitride And Silicon Nitride
Irina Kiryushina, Andrey Islyaykin, Yury Ozerin
MERI JSC

PB10
Study on X-ray radiolysis-induced-chemical reaction at interface between liquid and substrate for additive manufacturing process
Akinobu Yamaguchi[1], Ikuya Sakurai[2], Ikuo Okada[2], Mari Ishihara[3], Takao Fukuoka[1], Kelvin Elphick[4], Edward Jackson[4], Atsufumi Hirohata[4], Yuichi Utsumi[1]
[1]University of Hyogo, [2]Nagoya University, [3]Hyogo Prefectural Institute of Technology, [4]University of York

PB12
Surface Effect on the Operation of a NEMS Switch
Sepeedeh Shahbeigi Roudposhti[1], Sertac Guneri Yazgi[1], Martin Hofmann[2], Mahmut Bicer[1], Mohammad Nasr Esfahani[3], Ivo W. Rangelow[2], B. Erdem Alaca[1,4]
[1]Dept. of Mechanical Engineering, Koc University, [2]Dept. Micro- and Nanoelectronics Systems, Ilmenau University of Technology, [3]WMG, University of Warwick, [4]KUYTAM, Surface Science and Technology Center, Koc University

PB16
Metallic ink composed of nickel-silver core-shell nanoparticles for preparation of conductive coating
Anna Pajor-świerzy[1], Robert Socha[1], Radosław Pawłowski[2], Piotr Warszyński[1], Krzysztof Szczepanowicz[1]
[1]Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, [2]Abraxas Jeremiasz Olgierd

PB18
Optimal fabrication and characterization of YAG:Ce nanopowders for LED lighting
Ya-Wei Lee[1], Tien-Li Chang[2], Su-Hsen Wu[1]
[1]National Defense University, [2]National Taiwan Normal University, [3]National Defense University

PB20
Hybrid Plasmonic Nanostructures via Block Copolymer Nanopatterning
Andrew Selkirk[1], Cian Cummins[2], Niall McEvoy[1], Mick Morris[1], Parvaneh Mokarian-Tabari[1]
[1]Trinity College, The University of Dublin, [2]Université de Bordeaux

Poster Session

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PB17
Transparent Super Water-Repellent Surface using ZnO Nanorod
Hwa-Min Kim[1], Changhyun Lee[1], Jiseon Kwon[1], Sunyoung Sohn[2], Jongjae Kim[1], Chanseob Cho[3], Bonghwan Kim[1]
1Daegu Catholic University, 2Pohang University of Science and Technology, 3Kyungpook National University

PB19
Effective Growth of Pure Long-straight Boron Nitride Nanowires strain and application as humidity sensor
Dr Ling Li, Cuicui Zhuang, Xiangqian Jiang
Harbin Institute of technology

PB21
The Path to Molecularly Precise Self-Assembly
Michael Zwolak, Jacob Majikes, James Alexander Liddle
NIST

PB23
Study of the fabrication of vertical GaN nanowire transistors
George Doundoulakis[1,2], Adam Adikimenakis[1,2], Antonios Stavrinidis[2], Katerina Tsagaraki[2], Maria Androulidaki[2], Fabrice Iacovella[2], George Deligeorgis[2], George Konstantinidis[2], Alexandros Georgakilas[1,2]
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PB25
Substrate effects in selective area growth of GaN nanowires by plasma-assisted molecular beam epitaxy
Adam Adikimenakis[1,2], George Doundoulakis[1,2], Savvas Eftychis[1,2], Katerina Tsagaraki[1], Maria Androulidaki[1], Alexandros Georgakilas[1,2]
[1]FORTH, [2]University of Crete

PB27
Complicated micro-, nanostructure of fine crystalline spots in thin amorphous films formed by e-beam
Vladimir Kolosov
Ural Federal University

PB29
3D greyscale e-beam lithography for the template of a round shape Kinoform lens in X-ray
Zhiqiang Chen[1], Jingyuan Zhu[1], Xudi Wang[2], Yifang Chen[1]
[1]220 Handan Rd., Yangpu District, [2]School of Mechanical and Automobile Engineering, Hefei University of Technology

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PB22
Investigation of morphological and structural properties of hot-wire deposited molybdenum sulphide thin films
Giorgos Papadimitropoulos, A. Balliou, Dimitris Davazoglou, Dimitris N. Kouvatsos
NCSR Demokritos

PB24
Subtractive Plasma Nano-Assembly: A New Method for Precision Control of Surface Nanotopography
Angelos Zeniou[1,2], Evangelos Gogolides[1], Vassilios Constantoudis[1]
[1]INN, NCSR Demokritos, [2]Department of Physics, University of Patras

PB26
Ion beam implanted Germanium nanowires
Ahmad Echresh[1,2], Yufang Xie[1], Slawomir Prucnal[1], Lars Rebohle[1], Yordan M. Georgiev[1,3]
[1]Institute of Ion Beam Physics and Materials Research, HZDR, [2]International Helmholtz Research School for Nanoelectronic Network, HZDR, [3]Institute of Electronics at Bulgarian Academy of Sciences

PB28
HD-DVD Based Microscale 3D Printer
Tien-Jen Chang, Lukas Vaut, Martin Voss, Line Hagner Nielsen, En-Te Hwu, Anja Boisen
The Danish National Research Foundation and Villum Foundation's Center for Intelligent Drug Delivery and Sensing Using Microcontainers and Nanomechanics (IDUN), Department of Health Technology, Technical University of Denmark

PB30
FIB-induced Origami Assembling Diverse 3D Micro/nanostructures
Junjie Li[1,2], Changzhi Gu[1,2], Ruhao Pan[1,2]
[1]Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, [2]School of Physical Sciences, CAS Key Laboratory of Vacuum Physics, University of Chinese Academy of Sciences

PB32
3D-microfabrication of pyrolytic carbon electrodes combining additive manufacturing and UV lithography
Jesper Yue Pan[1], Babak Rezaei[1], Thomas Aarøe Anhøj[1], Niels Bent Larsen[2], Stephan Sylvest Keller[1]
[1]Technical University of Denmark, [2]DTU Healthtech, Department of Health Technology

PB34
The high sensitive sensor of refractive index based on 3D metamaterials fabricated by ion beam irradiation
Changzhi Gu, Haifang Yang, Junjie Li
Chinese Academy of Sciences

Wednesday, 25th, 2019 (Odd Numbers)

PB31
Combination of two-photon 3D printing and inkjet printing for steroid coating drug-eluting implant

Jongmoon Jang[1], Christopher Tse[1], Jeong Hun Jang[2], Hongsoo Choi[3,4], Jürgen Brugger[1]

[1]Microsystem Laboratory, École Polytechnique Fédérale De Lausanne (EPFL), [2]Dep't of Otolaryngology, Ajou University School of Medicine, [3]Dep't of Robotics Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST), [4]DGIST-ETH Microrobot Research Center, DGIST

PB35
Large-scale 3D plasmonic sub-10 nm-gap arrays based on stress-induced nanocrack

Ruhao Pan[1,2], Junjie Li[1,2], Changzhi Gu[1,2]

[1]Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, [2]School of Physical Sciences, CAS Key Laboratory of Vacuum Physics, University of Chinese Academy of Sciences

PB37
Growth of porous nanofiber structure via layer-by-layer self-assembly under ionic effects for antireflective and antifogging coatings

Kengo Manabe[1,2], Seimei Shiratori[2]

[1]Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology, [2]Center for Material Design Science, School of Integrated Design Engineering, Keio University

PB39
Fabrication of robust PDMS microstructure with hydrophobic properties

Nithi Atthi, Witsaroot Sripumkhai, Pattaraluck Pattamang, Oraphan Thongsook, Saranya Suntalelat, Jirawat Jantawong, Rattanawan Meananeatra, Jakrapong Supadech, Nipapan Klunngien, Wutthinan Jeamsaksiri

Thai Microelectronics Center (TMEC), National Electronics and Computer Technology Center (NECTEC)

PB41
Fabrication of metamaterial structure with morpho butterfly effect using standing wave effect

Tomoki Nishino[1], Hiroshi Tanigawa[2], Atsushi Sekiguchi[2], Hiroyuki Mayama[3]

[1]Ritsumeikan University, [2]The Research Organization of Science and Technology, Ritsumeikan University, [3]Department of Chemistry, Asahikawa Medical University

PB43
Nanoporous Ag Films for Surface-Enhanced Raman Scattering for Biosensors

Sungho Yun[1,2], HyeongJu Kim[1], Dongin Lee[3], Bonghwan Kim[4], Chanseob Cho[1]

[1]Kyungpook National University, [2]Kwang-Lim Precision, [3]Yeungnam University, [4]Daegu Catholic University

PB45
Putting Cassie under Pressure

Sankara Narayana Moorthi Arunachalam, Ratul Das, Zain Ahmad, Jamilya Nauruzbayeva, Himanshu Mishra

King Abdullah University Of Science & Technology

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PB38
Patterning and Pattern Transfer of Antireflective Nanostructures for Optical Glasses based on self-organized block copolymer masks

Florian Schlachter[1], Jens Bolten[1], Gaulthier Rydzek[2], Parvaneh Mokarian[2], Max Christian Lemme[1,3]

[1]Amo Gmbh, [2]AMBER and School of Chemistry, CRANN Institute, Trinity College Dublin, [3]Electronic Devices, RWTH Aachen University

PB40
Pedestal-Shaped Microfluidic Nozzles to facilitate Contact Line Pinning during Electrohydrodynamic processing of Liquids

Bjorn T.H. Borgelink, Erwin J.W. Berenschot, Cristian S. Deenen, Remco G.P. Sanders, Niels R. Tas, Han J.G.E. Gardeniers

Mesoscale Chemical Systems, University of Twente

PB42
High Fidelity and Sustainable Anti-Reflective Moth-eye Nanostructures and Large Area Sub-Wavelength Applications

Shuhao Si[1], Martin Hoffmann[2]

[1]Technische Universität Ilmenau, [2]Ruhr-Universität Bochum

PB44
Silicon surface modification for covalent attachment of molecules via strain-promoted azide-alkyne click chemistry reaction

Fotini Vrettou[1,2], Panagiota Petrou[2], Sotirios Kakabakos[2], Panagiotis Argitis[3], Margarita Chatzichristidi[1]

[1]National And Kapodistrian University Of Athens, [2]Immunoassay/Immunosensors Lab, INRASTES, NCSR Demokritos, [3]Institute of Nanoscience and Nanotechnology, NCSR Demokritos

PB46
Surface modification and microfabrication of piezoelectric fluorinated polymers by proton beam writing

Yoshitaka Nojiri[1], Yoshikazu Koike[1], Yasuyuki Ishii[2], Hiroyuki Nishikawa[1]

[1]Shibaura Insititute of Technology, [2]Institutes for Quantum and Radiological Science and Technology

PB48
Iodine - based etching solution for mercury cadmium telluride material

Olga Markowska[1], Jarosław Rutkowski[1], Jerzy Ciosek[2]

[1]Institute of Applied Physics, Military University of Technology, [2]Institute of Optoelectronics, Military University of Technology

PB50
Polyelectrolyte multilayer nanosystems for biomedical application

Krzysztof Szczepanowicz[1], Tomasz Kruk[1], Wiktoria Tomal[1], Aud Bouzga[2], Christian Simon[2], Piotr Warszyński[1]

[1]Jerzy Haber Institute Of Catalysis And Surface Chemistry, Polish Academy Of Sciences, [2]SINTEF Material and Chemistry

Poster Session

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PB47
Scalable Perfluorocarbon-free Gas Entrapping Surfaces/Membranes

Zain Ahmad, Ratul Das, Sankara Arunachalam, Ulrich Buttner, Himanshu Mishra

Kaust

PB49
Nanostructured surfaces for improvement of Laser Transfer process

Javier Bravo, Javier Clemente

Naitec

PB51
Nanoporous activated carbon cloth for H2 adsorption, selective CO2/CH4 separation and supercapacitor energy storage

Nikolaos Kostoglou[1], Christian Koczwara[1], Christian Prehal[2], Biljana Babic[3], Christos Tampaxis[4], Georgia Charalambopoulou[4], Theodore Steriotis[4], Kyriaki Polychronopoulou[5], Georgios Constantinides[6], Oskar Paris[1], Claus Rebholz[7], Christian Mitterer[1]

[1]Montanuniversität Leoben, [2]Graz University of Technology, [3]University of Belgrade, [4]National Center for Scientific Research Demokritos, [5]Khalifa University of Science and Technology, [6]Cyprus University of Technology, [7]University of Cyprus

PB53
Atmospheric plasma etching of nanocomposite materials for fabrication of superhydrophobic, antireflective and antibacterial surfaces

Panagiotis Dimitrakellis[1], Georgia Kaprou[1], Dimitrios Mastellos[2], Angeliki Tserepi[1], Evangelos Gogolides[1]

[1]Institute of Nanoscience And Nanotechnology, NCSR 'Demokritos', [2]Institute of Nuclear & Radiological Sciences & Technology, Energy & Safety, NCSR 'Demokritos'

PB55
Antifogging and optically switching, micro-nano structured surfaces

Maria-Martha Tzianou, Giannis Thomopoulos, Dimitris Nioras, Kosmas Ellinas, Nikos Vourdas, Evaggelos Gogolides

Institute of Nanoscience and Nanotechnology NCSR Demokritos

PB57
Fabrication of functional separator via graphene oxide induced surface modification for lithium ion battery

Ju Young Kim, Dong Ok Shin, Kwang Man Kim, Jimin Oh, Jumi Kim, Seok Hun Kang, Myeong Ju Lee, Young-Gi Lee

Electronics and Telecommunications Research Institute

PB59
Impedance spectroscopy of diamond based nanomaterials and nanostructures

Ruoying Zhang[1], Aude Cumont[1], Dongyu Li[1], Nikolaos Kehagias[2], Haitao Ye[1]

[1]University of Leicester, [2]Catalan Institute of Nanoscience and Nanotechnology

Tuesday, 24th, 2019 (Even Numbers)

PB52
Dew water harvesting from micro-nanotectured surfaces

Dimitris Nioras, Giannis Thomopoulos, Maria Tzianou, Nikos Vourdas, Kosmas Ellinas, Evangelos Gogolides

Institute of Nanoscience and Nanotechnology, NCSR Demokritos

PB54
Ultra-low friction droplet motion on micro-nanostructured superhydrophobic surfaces

Panagiotis Sarkiris[1], Kosmas Ellinas[1], Dimitris Gkiolas[2], Dimitrios Mathioulakis[2,3], Evangelos Gogolides[1]

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PB58
A novel bio-inspired Triple hierarchical Superhydrophobic Surface (TriSS)

Soochan Chung, Cameron Riley, Hayden Taylor

University of California, Berkeley

PB60
Cyclic deformation behaviour of Ti alloys by using micro-sized specimens

Takashi Nagoshi, Hajime Kishimoto, Akihisa Harada

National Institute of Advanced Industrial Science and Technology

PB62
First-principles study on different types of 2D-MoS2-based nanocatalysts for the oxygen reduction reaction

Jiamu Cao[1,2], Junyu Chen[1], Jing Zhou[1], Shaoxuan Zhong[1,2], Luwen Zhang[1], Junfeng Liu[1]

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PB64
Dominating role of Rapid Heating rate on the Pt/rGO Nanocatalysts Synthesised by microwave assistant for Highly Enhanced Catalytic Properties

Jing Zhou[1], Jiamu Cao[1,2], Junyu Chen[1], Junfeng Liu[1], Yufeng Zhang[1,2]

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PB66
Combining bottom-up and top-down approaches with micro X-ray fluorescence spectroscopy for controllable fabrication of periodic ZnO nanostructures

George P. Papageorgiou[1,2], Andreas Karydas[3], Vassiliki Kantarelou[3], George Papageorgiou[1], Eleni Makarona[1]

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PB63
Sensing of Hydrogen by two-dimensional doped-2H MoS2 and pristine-1T MoS2: A first-principles study

Junyu Chen[1], Jing Zhou[1], Jiamu Cao[1,2], Shaoxuan Zhong[1,2], Luwen Zhang[1], Junfeng Liu[1], Yufeng Zhang[1,2]

[1]MEMS Center, Harbin Institute of Technology, [2]Key Laboratory of Micro-systems and Micro-Structures Manufacturing, Ministry of Education

PB65
Formation of MoS2 nanostructure arrays using anodic aluminium oxide template

Takaki Okamoto[1], Tomohiro Shimizu[1], Takeshi Ito[1], Koichi Takase[2], Shoso Shingubara[1]

[1]Kansai University, [2]Nihon University

PB67
Temperature Dependent (83-533 K) Raman Spectroscopy Analysis of MoS2 Monolayers on Si/SiO2 and Glass Substrates

Merve Öper, Hüseyin Şar, Feridun Ay, Nihan Kosku Perkgoz

Eskisehir Technical University

PB69
Mapping of charge distribution by Kelvin probe force microscopy on graphene field effect transistor at controlled relative humidity

Vojtěch Švarc[1,2], Miroslav Bartošík[1,2], Martin Konečný[1,2], Jakub Sadílek[1], Tomáš Šikola[1,2]

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PB71
Stacked electrophoretic deposited graphene supercapacitors

Laigui Hu, Muhammad Zaheer, Ran Liu

Fudan University

PB73
Growth and characterization of nanocrystalline and nanoparticle Hafnium films

Menelaos Tsigkourakos[1], Athanasios Housiadas[1], Thomas Kehagias[2], Philomela Komninou[2], Dimitris Tsoukalas[1]

[1]National Technical University of Athens, [2]Aristotle University of Thessaloniki

PB77
Study on nanoimprint technology of plant structure with super water repellent structure

Atsushi Sekiguchi[1,2], Tomoki Nishino[1], Hitoshi Tanigawa[1], Hiroko Minami[2], Japan Yoko Matsumoto[2]

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PB79
Subwavelength transmissive surface-relief gratings for spiral phase-contrast microscopy

Einstom Engay[1], Larissa Vertchenko[1], Dewang Huo[1,2], Alexandre Wetzel[3], Ada-Ioana Bunea[3], Andrei Lavrinenko[1]

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Tuesday, 24th, 2019 (Even Numbers)

PB68
Engineered bottom-up fabrication of Tin Selenide Nanostructures: ranging from 2D to 1D

Subhajit Biswas[1,2], Fionan Davitt[1,2], Gillian Reid[3], Justin D. Holmes[1,2]

[1]School of Chemistry, University College Cork (ucc), [2]AMBER@CRANN, Trinity College Dublin, [3]School of Chemistry, University of Southampton

PB70
Single layer reduced graphene oxide transferred by Langmuir–Blodgett and patterned by Electron Beam Lithography at wafer scale

Adrian Martinez-Rivas[1], Aldo Armando Rosales Hernández[2], Narcizo Muñoz-Aguirre[3], Donato Valdez-Pérez[2]

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PB76
Study of laparoscopic scope camera lens with antifouling function using metamaterial structure

Tomoki Nishino[1], Hiroshi Tanigawa[2], Atsushi Sekiguchi[2], Hiroyuki Mayama[3], Akinari Hinoki[4], Hiroo Uchida[4]

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PB78
Optical properties of aluminum nanosquare structures

Grigoris Zisis[1,2], Evangelos Almpanis[1], Emmanouil Panagiotidis[1], Ioannis Raptis[1,2], Nikos Papanikolaou[1]

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PB80
Optical characterization of printed silver nanocluster wires

Ryohei Hokari, Kazuma Kurihara, Eiji Higurashi

National Institute of Advanced Industrial Science And Technology (AIST)

PB82
Measuring the complexity of nanostructured surfaces

Athanasios Arapis[1,3], Vassilios Constantoudis[1,2]

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PB84
The Structure and Micro-mechanical Properties of Cobalt Electrodeposited by Micro-compression Test

Xun Luo[1,2], Tso-Fu Mark Chang[3], Masato Sone[3]

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Poster Session

Wednesday, 25th, 2019 (Odd Numbers)

PB81
Controlling light wavefronts with dielectric meta-surfaces

Emmanouil Panagiotidis[1,2], Evangelos Almpanis[1,2], Nikolaos Papanikolaou[1], Grigorios Konstantinos Zisis[1]

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PB83
Dip-in and measure: An alternative approach for the fabrication of metal-coated AFM probes for Tip-Enhanced Raman Spectroscopy

Diana Davila

IBM Research - Zurich Lab

PB85
Ultra-sensitive interferometric microscope for material analysis and defect detection

Luc Dümpelmann, Roland A. Terborg, Josselin Pello, Illaria Mannelli, Valerio Pruneri

Icfo

PB87
Investigation of Pt/C freestanding nanowires fabricated in focused electron beam deposition technology

Piotr Kunicki[1], Krzysztof Kwoka[1], Tomasz Piasecki[1], Sebastian Eberle[2], Cosmin Roman[2], Christofer Hierold[2], Teodor Gotszalk[1]

[1]Wroclaw University of Technology, [2]Swiss Federal Institute of Technology in Zurich

PB89
Three-dimensional silicon nanostructures for photonic applications

Bingdong Chang, Flemming Jensen, Jörg Hübner, Henri Jansen

Technical University of Denmark, Kongens Lyngby, Denmark

Tuesday, 24th, 2019 (Even Numbers)

PB86
When should we consider the effect of tip size and shape in AFM measurements?

Andrew A. Vekinis, Vassilis Constantoudis

Institute of Nanoscience and Nanotechnology, NCSR Demokritos

PB88
Nanometrological Characterization of CuO and NiO Nanostructures of Non-conventional Morphologies: A symmetry-based approach

Vassilios Constantoudis[1,4], Ioannis Ioannou-Sougleridis[1,3], A. Dimou[1,2], A Ninou[1,2], M. Chatzichristidi[2], E. Makarona[1]

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Wednesday, 25th, 2019 (Odd Numbers)

PC – Devices & MEMS

PC01

Analysis on the Effect of Flake thickness on Photocurrent Efficiency and Photoresponsivity of ReS2 Field-effect Transistors

Ji-Hoon Shon, Young-Sun Moon, Soo-Jin Kim, Gyu-Tae Kim

Korea University

PC03

Design of multi-layer single-electron circuit mimicking behavior of bubble film for solving Steiner tree problem

Nobuhiko Kurata, Takahide Oya

Graduate School Of Engineering Science, Yokohama National University

PC05

Suppression of E-field crowding in gate oxide of 1.2 kV SiC trench MOSFETs using double p-base structure

Ogyun Seok[1], Min-Woo Ha[2], In Ho Kang[1], Hyoung Woo Kim[1], Wook Bahng[1]

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PC07

Performance Improvement of Ge pFinFETs by Post-Fin-Fabrication Annealing

Wataru Mizubayashi[1], Hiroshi Oka[1], Takahiro Mori[1], Yuki Ishikawa[1], Seiiji Samukawa[2], Kazuhiko Endo[1]

[1]AIST, [2]Tohoku Univ.

PC09

Electrical characterisation of Sm-, Nb-co-doped TiO2 thin films

Mariko Murayama[1,2], Iain Crowe[2], Simon Hammersley[2], Vladimir Markevich[2], Matthew Halsall[2], Anthony Peaker[2], Kenji Sato[1], Shogo Iwana[1], Keita Shiraishi[1], Shuji Komuro[3], Masashi Ishii[4], Xinwei Zhao[1]

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PC13

Ferromagnetic/Ferroelectric heterojunction-induced modulation of magnetic properties of artificial magnets

Akinobu Yamaguchi[1], Ryo Nakamura[1], Shunya Saegusa[1], Keisuke Yamada[2], Tsunemasa Saiki[3], Aiko Nakao[1], Yuichi Utsumi[1], Takeshi Ogasawara[4], Masaki Oura[5], Takuo Ohkouchi[6]

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PC15

Fabrication and Characterization of Reconfigurable Field Effect Transistors

Bilal Khan[1,2], Slawomir Prucnal[1], René Hübner[1], Artur Erbe[1], Yordan M. Georgiev[1,3]

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Tuesday, 24th, 2019 (Even Numbers)

PC – Devices & MEMS

PC02

Impact of Roughness of TiN bottom electrode on the forming voltage of HfO2 based Resistive Memories

Christelle Charpin-Nicolle[1], Marceline Bonvalot[2], Romain Sommer[1], Alain Persico[1], Maryline Cordeau[1], Samia Belahcen[2], Brice Eychenne[2], Philippe Blaise[1], Sébastien Martinie[1], Sophie Bernasconi[1], Eric Jalaguier[1], Etienne Nowak[1]

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PC04

Effects of Negative Bias Stress on Electrical Characteristics of 4H-SiC MOSFETs

Hojun Lee[1], Taeeun Kim[1], Ogyun Seok[2], Jeong Hyun Moon[2], Wook Bahng[2], Dong-Won Kang[3], Yong-Sang Kim[4], Min-Woo Ha[1]

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PC08

Wet Etching of ZnO thin films for Transparent Electronic Network

Ben Daniel Rowlinson[1], Nor Azlin Ghazali[2], Joshua Akrofi[1], Wira Sinuraya[1], Martin Ebert[1], Jamie Dean Reynolds[1], Harold M H Chong[1]

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PC10

Metallization technique for drain/ source electrodes for complementary organic and ZnO nanoparticle inverter circuits

Julia Reker[1], Thorsten Meyers[1], Fábio F. Vidor[2], Ulrich Hilleringmann[1]

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PC12

Improved NBIS of IGZO TFTs by Novel Fluorine Doping Technique

Kyung-Mo Jung, Jongsu Oh, Kyung Rae Kim, Yong-Sang Kim

Department Of Electrical And Computer Engineering, Sungkyunkwan University

PC14

Synaptic properties of HfOx and TaOy-based resistive switching multilayer devices

Dionisis Sakellaropoulos, Panagiotis Bousoulas, Georgios Nikas, Dimitris Tsoukalas

Department of Applied Physics, National Technical University of Athens

PC16

Defect incorporation techniques for oxide-based memristive devices

Alexander Rogozhin[1], Andrey Miakonkikh[1], Olga Permyakova[1,2], Konstantin Rudenko[1]

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Poster Session

Wednesday, 25th, 2019 (Odd Numbers)

PC17
Hydrothermally-developed ZnO pn-homojunctions on Si for optoelectronic applications

Eleni Makarona, George Papageorgiou

Institute Of Nanoscience And Nanotechnology, Ncsr "demokritos"

PC19
Photogating-based position-sensitive detectors with organic semiconductors

Wei Jin, Zhi-Jun Qiu, Chunxiao Cong, Ran Liu, Laigui Hu

Fudan University

PC21
Red colored electrochromic device

Juhee Song, Hojun Ryu, JiSu Han, Tae-Youb Kim, Chihun Sung, Seong M. Cho, Sujung Kim, Chi-Sun Hwang, Chil Seong Ah

Electronics and Telecommunications Research Institute

PC23
Electrochemical Deposition as a Tool for Fabrication of Organic and Hybrid Photovoltaics

Ouacef Charfi[1,3], Markus Frericks[2,4], Marko Cehovski[1,3], Hans-Hermann Johannes[1,3], Wolfgang Kowalsky[1,3,4]

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PC25
Fabrication and evaluation of synaptic device with 2-D array of MnO2 nanoparticles

Takahiko Ban[1], Yukiharu Uraoka[2], Shin-ichi Yamamoto[1]

[1]Ryukokou University, [2]Nara Institute of Science and Technology

PC27
Fabrication of plasmonic circuits comprising waveguides, multiplexer, demultiplexer, and detector-integrated MOSFETs

Mitsuo Fukuda, Yuta Tonooka, Tomohiro Hirano, Masashi Ota, Yasuhiko Ishikawa

Toyohashi University Of Technology

PC29
A long-range plasmonic waveguide with integrated reflector for perpendicular optical interconnect applications

Laurent Markey, Christian Vernoux, Jean-Claude Weeber, Kamal Hammani, Juan Arocas, Alain Dereux

Laboratoire Interdisciplinaire Carnot de Bourgogne

PC31
Fabrication of Void-free Ternary Chalcogenide Microlens Arrays Using PDMS Stamps

Hoa Xiong, Yunfan Shi, Qian Wang, Dong Wu, Liyang Pan, Zheyao Wang

Tsinghua University/institute Of Microelectronics

Tuesday, 24th, 2019 (Even Numbers)

PC18
Experimental and modeling study of FinHEMT transistors based on AlN/GaN/AlN heterostructure

George Doundoulakis[1,2], Adam Adikimenakis[1,2], Antonios Stavrinidis[2], Katerina Tsagaraki[2], Maria Androulidaki[2], George Deligeorgis[2], George Konstantinidis[2], Alexandros Georgakilas[1,2]

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PC20
Improving Stability of Zinc Oxide Nanowire Field Effect Transistors Operating in High Ionic Phosphate Buffered Solution

Joshua Akrofi, Martin Ebert, Jamie Reynolds, Kai Sun, Ruoyo Hu, Maurits de Planque, Harold Chong

1University of Southampton

PC24
Electromigration for memristive devices

Joseph Lombardo[1], Simon Collienne[1], Adrien Petrillo[1], Emile Fourneau[2], Ngoc Duy Nguyen[2], Alejandro V. Silhanek[1]

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PC26
Hot Electron Nanoscopy and spectroscopy (HENs): from probe design to real applications

Bruno Torre, Andrea Giugni, Marco Allione, Xinyu Zhang, Enzo Di Fabrizio

King Abdullah University Of Science and Technology

PC28
Grating integration technologies for edge emitting AlGaAs diode lasers

Olaf Brox, Jörg Fricke, Hans Wenzel, Pietro Della Casa, Andre Maaßdorf, Markus Weyers, Mathias Matalla, Andrea Knigge

Ferdinand-Braun-Institut, Leibniz-institut für Höchstfrequenztechnik

PC30
Experimental and numerical investigation of biosensors plasmonic substrates induced by different fabrication techniques, e-beam, soft and hard UV-NIL

Jean-Francois Bryche[1,2,3], Frédéric Hamouda[2], Mondher Besbes[3], Philippe Gogol[2], Julien Moreau[3], Marc Lamy de la Chapelle[4], Michael Canva[1], Bernard Bartenlian[2]

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PC33
Nanofabrication of fan-shaped photonic crystal spectrometers with ultrahigh resolution in SOI for the infrared range

Bo Feng, Xunya Jiang, Yifang Chen

Fudan University

PC37
Fabrication of metallo-dielectric metamaterials integrating nano-imprinted PMMA pillars

Tiziana Stomeo[1], Armando Casolino[2], Francesco Guido[1], Antonio Qualtieri[1], Michael Scalora[3], Antonella D'Orazio[2], Marco Grande[2], Massimo De Vittorio[1,4]

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PC39
An 1800 nm microcavity semiconductor laser

Fangyuan Meng[1,2,3], Hongyan Yu[1,2,3], Xuliang Zhou[1,2,3], Yajie Li[1,2,3], Pengfei Wang[1,2,3], Wenyu Yang[1,2,3], Guangzhen Luo[1,2,3], Weixi Chen[1], Jiaoqing Pan[1,2,3]

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PC41
Fabrication of SU-8 thick microstructures and integrated optics fabrication by e-beam lithography

Luca Businaro, Francesca Romana Bertani, Adele De Ninno, Giorgio Pettinari, Francesco Martini, Annamaria Gerardino

CNR-IFN, Institute for Photonics and Nanotechnologies

PC43
Electrochromic window based on the polymer substrate with long term stability for smart auto-vehicle application

Hojun Ryu, Chi-Seong Ah, Ju-Hee Song, Sang-Hoon Cheon

ETRI

PC45
Highly efficient surface micromachined infrared absorber with dual-band characteristic for thermoelectric radiation sensors

A. Ihring, G. Zieger, P. Lorenz, S. Stanca, F. Haenschke, D. Blaschke, H. Schmidt

Leibniz Institute of Photonic Technology

PC47
Photothermal analysis of direct-write gold nanostructures – How purity and conductivity affect the plasmonic properties?

Mostafa Moonir Shawrav[1], Miao-Hsuan Chien[1], Zubair Buch[1], Philipp Taus, Heinz D. Wanzenboeck[2], Silvan Schmid[1]

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Tuesday, 24th, 2019 (Even Numbers)

PC32
Generalized Two-Temperature Fitting Algorithm for Ultrashort Laser Heating of Metal Film and Nanoparticles to spatially and temporally study heat propagation

Paul Bresson1,2,3, Jean-françois Bryche[1,2], Julien Moreau[3], Mondher Besbes[3], Paul-Ludovic Karsenti[1,2], Denis Morris[1,2], Paul Charette[1,2], Michael Canva[1,2]

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PC34
Refractometric Sensing Using Gradient Plasmonic Nanostructures: Mapping Spectral Information to Spatial Patterns

Siyi Min[1,2], Shijie Li[1], Zhouyang Zhu[1], Chuwei Liang[1], Jingxuan Cai[1], Xing Cheng[2], Wen-Di Li[1]

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PC36
Filament-doped thin film electrodes for high-efficiency light-emitting and detecting devices

Tae Geun Kim, Tae Ho Lee, Yong Woon Kim

Korea University

PC38
Silicon nitride nanoantennas for wireless on-chip optical networks

Tiziana Stomeo[1], Andrea Toma[2], Antonio Qualtieri[1], Giovanna Calò[3], Badrul Alam[3], Vincenzo Petruzzelli[3], Gaetano Bellanca[4], Ali Emre Kaplan[4], Massimo De Vittorio[1,5]

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PC42
Reversed electrochromic device with blue color in neutral states

Chil Seong Ah, Juhee Song, Hojun Ryu, Tae-Youb Kim, Seong M. Cho, Sujung Kim, Sanghoon Cheon, Joo Yeon Kim, Chi-Sun Hwang1

Electronics And Telecommunications Research Institute (ETRI)

PC44
Structured light with angular momentum for excitation of near field hot spots

Marco Allione, Andrea Giugni, Bruno Torre, Enzo Di Fabrizio

Physical Science and Engineering Division, KAUST

PC46
Principles for selecting quantum dots with high intrinsic quantum efficiency

Søren Stobbe

Department Of Photonics Engineering, Technical University Of Denmark

Poster Session

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PC49
Rapid and precise wavelength determination approach based on visually patterned integrated narrow bandpass filters

Zhiyi Xuan[1,2,3], Ying Zhi[1,3], Yi Zhang[1,3], Shaowei Wang[1], Wei Lu[1,2,3]

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PC51
Performance of white-light Ce:Y3Al5O12 composite emitters for visible light optical communications

Th. Kamalakis[1], D. Alexandropoulos[2], Yongzheng Fang[3], Yufeng Liu[3], S. Couris[4], Jingshan Hou[3], Nikolaos Vainos[1]

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PC53
Transferrable dielectric DBR membranes for versatile GaN-based polariton and VCSEL technology

Emmanouil Amargianitakis[1,2], Stelios Kazazis[2,3], George Doundoulakis[2,3], George Stavrinidis[2], George Konstantinidis[2], Eric Delamadeleine[4], Eva Monroy[4], Nikolaos Pelekanos[1,2]

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PC55
Transition metal-based 2D MXenes thin films for plasmonic photodetection

Dhinesh Babu Velusamy, Jehad K. El-Demellawi, Ahmed M. El-Zohry, Andrea Giugni, Sergei Lopatin, Mohamed N. Hedhili, Ahmed E. Mansour, Enzo Di Fabrizio, Omar F. Mohammed, Husam N. Alshareef

Kaust - King Abdullah University Of Science and Technology

PC57
A novel contact-enhanced low-g inertial switch with low-stiffness fixed electrode

Ke Zhai, Liqun Du, Min Han, Weitai Wang, Ming Zhao

Dalian University of Technology

PC59
Processing of piezotronic microstrain sensors on flexible substrates

Stéphanie Girod[1], Raoul Joly[1,2], Noureddine Adjeroud[1], Kevin Menguelti[1], Mohamed El Hachemi[1], Patrick Grysan[1], Sébastien Klein[1], Jérôme Polesel[1]

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PC61
Ultra-high sensitive humidity detection using surface enhanced microcantilevers

S. Balasubramanian, K. Prabakar, S. R. Polaki

Indira Gandhi Centre for Atomic Research

Tuesday, 24th, 2019 (Even Numbers)

PC48
Ultrashort-pulse laser dicing of Glass-Phosphor-glass sheets

Sandra Stroj[1], Giovanni Piredda[1], Wolfgang Plank[2], Martin Muendlein[2], Matthias Domke[1]

[1]Vorarlberg University of Applied Sciences / Research Center for Microtechnology, [2]ESCATEC Switzerland AG

PC50
Ce:Y3Al5O12 phosphor / polymer nanocomposite coatings on microstructures and micromachines by pulsed laser deposition

E. Bagiokis[1], K. Papachristopoulou[1], V. Karoutsos[1], A. Lorusso[2], Yongzheng Fang[3], Jingshan Hou[3], Yufeng Liu[3], A. Perrone[2], Nikolaos Vainos[1]

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PC52
Computer generated plasmonic holographic structures for toxin sensing

Nikolaos Vainos[1], E. Bagiokis[1], K. Papachristopoulou[1], J. Jermann[1], E. Smyrnioti[1], C. Stathopoulos[2], D. Papaioannou[3]

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PC54
Nano-photonic structures for a silicon optical phased array capable of wide-angle and highly-efficient beam-forming operation

Jong-Bum You[1], Dong-Eun Yoo[1], Dong-Wook Lee[1], Young Su Kim[1], Kyoungsik Yu[2], Hyo-Hoon Park[2]

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PC56
Ultra miniaturized InterDigitated Electrodes as a platform for sensing applications

Z. Wang[1], A. Syed1, S. Bhattacharya[1], X. Chen[1], U. Buttner[1], G. Ioardache[1], K. Salama[2], E. Valamontes[2], P. Oikonomou[3], I. Raptis[1,3], A. Botsialas[3], M. Sanopoulou[3]

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PC58
Flow sensor and stent integration for evaluating in-situ breathing property at airway in experimental animal

Hayato Noma[1], Yoshihiro Hasegawa[1], Kazuhiro Taniguchi[1], Miyoko Matsushima[2], Tsutomu Kawabe[2], Mitsuhiro Shikida[1]

[1]Hiroshima City University, [2]Nagoya University

PC60
Integration of carbon nanotube-based sensors to a flip-chip package for micro-strain detection in microelectronic package

Julien Pezard[1], Yosri Ayadi[1], Adham Elshaer[1], Eric Duchesne[2], Hélène Frémont[3], Dominique Drouin[1]

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PC63
Nanomaterial based Flow-sensor for easy microfluidic chip integration

Evangelos Skotadis[1], Lampros Patsiouras[1], Emmanouil Kousoulas Artouro Vargkas[1], Evangelos Aslanidis[1], Georgia Kaprou[2], Angeliki Tserepi[2], Dimitris Tsoukalas[1]

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PC65
Thermal flow sensor operated under 40 degrees Celsius for controlling small dosing rate in drip infusion system

Chihiro Shimohira[1], Yoshihiro Hasegawa[1], Kazuhiro Taniguchi[1], Miyoko Matsushima[2], Tsutomu Kawabe[2], Mitsuhiro Shikida[1]

[1]Hiroshima City University, [2]Nagoya University

PC67
Mode-Matched Single-Crystal Lithium Niobate Disk Resonator for High-Performance Gyroscope

Kazutaka Obitani[1], Toshiyuki Tsuchiya[1], Kazutaka Araya[2], Masanori Yachi[3]

[1]Department of Microengineering, Kyoto University, [2]TAMAGAWA SEIKI Co., Ltd., [3]TAMAGAWA MOBILE EQUIPMENT Co., Ltd.

PC69
A Highly Sensitive Pressure Sensor Based on Carbon Nanotubes and Polymer Composite

Tallis H. da Costa, Jin-Woo Choi

Louisiana State University

PC71
Electrochemical hydrogen sensors with wide detection ranges for hydrogen fuel cell vehicle application

Soon-Won Jung, Yoon-Ee Jo, Ms Hye Ryun Yoon, Seung-Yun Lee

Hanbat National University

PC73
Polymeric seed layer as a simple approach for nanostructuring of Ga-doped ZnO films for flexible piezoelectric energy harvesting

Mariya Aleksandrova

Technical University Of Sofia, Department Of Microelectronics

PC75
A novel polymer super capacitor with high aspect ratio 3D printed sub-millimetres structures

Giorgio Scordo[1], Valentina Bertana[1], Pietro Zaccagnini[1,2], Alberto Scalia[1], Andrea Lamberti[1,2], Stefano Romano[1], Luigi Simone Marasso[1,3], Carmelo Nicosia[1], Luciano Scaltrito[1], Sergio Ferrero[1], Fabrizio Pirri[1,2], Matteo Cocuzza[1,3]

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PC77
Fabrication of CIGS micro-concentrator solar cell devices

Pedro Anacleto[1], D. Siopa[2], P.J. Dale[2], S. Sadewasser[1]

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PC62
A thermal flow sensor and its signal processing circuit integration onto flexible copper on polyimide substrate

Ayami Kato[1], Iori Fujitsuna[1], Yoshihiro Hasegawa[1], Kazuhiro Taniguchi[1], Miyoko Matsushima[2], Tsutomu Kawabe[2], Mitsuhiro Shikida[1]

[1]Hiroshima City University, [2]Nagoya University

PC64
Design and performance analysis of a microgravity accelerometer with quasi-zero stiffness characteristic

Yuxing Duan[1], Xueyong Wei[1,2], Minghui Zhao[1], Ziming Ren[1], Huiying Zhao[1], Juan Ren[2]

[1]Xi'an Jiaotong University, [2]Chang'an University

PC66
Piezoresistive strain sensors based on aqueous dispersion of graphene nanoplatelets

Vasiliki Tsouti, Vasiliki Kekou, Meropi Sanopoulou, Stavros Chatzandroulis

NCSR Demokritos

PC68
Ceramic membrane based integrated systems for power generation and sensing

Nerea Alayo[1], Marco Bianchini[1], Francesco Chiabrera[1], Iñigo Garbayo[1], Marc Salleras[3], Luis Fonseca[3], Albert Tarancón[1,2]

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PC70
A 3D Printed Thermal Flow Sensor for Spirometry Applications

Tzoulian Koutsis, Alexios Psyrris, Grigoris Kaltsas

microSENSES Laboratory, Department of Electrical and Electronic Engineering, University of West Attica

PC72
Transparent Piezoelectric Ultrasonic Transducer for Optical Registered Photoacoustic Imaging

Ya-Han Liu, Fu-Sung Lin, Li-Xiang Chen, Yeong-Her Wang, Chih-Hsien Huang

National Cheng Kung University

PC74
An approach for nanostructuring of piezoelectric materials by template-assisted growth in porous aluminium oxide

Tsvetozar Tsanev[1], Maryia Aleksandrova[1], Boriana Tzaneva[2], Valentin Videkov[1]

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PC76
Ionic insulating polymer embedded light harvester for morphological control of perovskite solar cells

Seojun Lee[1], Saemon Yoon[1], Jun Ryu[1], Min-Woo Ha[2], Yong-Sang Kim[3], Dong-Won Kang[1]

[1]Chung-Ang University, [2]Myongji University, [3]Sungkyunkwan University

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PC81
Development of a novel low frequency magnetic eccentric pendulum vibration energy harvester for wireless oceanic nodes

Shaoxuan Zhong[1,2], Jiamu Cao[1,2], Junyu Chen[1], Jing Zhou[1], Luwen Zhang[1], Junfeng Liu[1]

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PC83
Influence of bi-functional catalyst nanostructures morphology on performances for rechargeable zinc-air battery

Chun-I Lee[1], Wen Sheng Chang[2]

[1]National Kaohsiung University of Science And Technology, [2]Industrial Technology Research Institute

PC87
Analysis on vertically aligned ZnO Nanorods as composite mechanical springs for an elastic and steady piezoelectric behavior at multiple frequencies

Oscar Gilberto Súchil Pérez, Selene Capula Colindres, Adrian Martinez Rivas, Marco Antonio Ramírez Salinas

Computing Research Center CIC-IPN

PC89
Shunt resistance effects in GaAs/InGaAs core-shell nanowire solar cells

Maria Androulidaki[1], Emmanouil Manidakis[1,2], Eleftheria Darivianaki[2], Zacharias Hatzopoulos[2], Siew-Li Tan[3,4], Nikos Pelekanos[1,2]

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PC91
Development of novel hydrogels using single-walled carbon nanotubes and phthalocyanine derivatives

Ryota Arakaki, Takahide Oya

Graduate School of Engineering Science, Yokohama National University

PC93
Investigation of laser-ablated flexible graphene film forming temperature sensors

Zhao-Chi Chen, Tien-li Chang, Pin-Chun Lin, Jing-Yi Yang

Department of Mechatronic Engineering, National Taiwan Normal University

PC95
Polyester Textile Based Graphene Pressure Sensor

Xiaoming Wu[1,2], Yifang Yang[1], Tianling Ren[1,2]

[1]Tsinghua University, [2]Beijing National Research Center for Information Science and Technology

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PC78
Nanoimprint Lithography for the Creation of Solar Thermal Absorbers

Tina Mitteramskogler[1], Michael J Haslinger[1], Ambiörn Wennberg[2], Iván F Martínez[2], Michael Muehlberger[1], Matthias Krause[3], Elena Guillén[1]

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PC80
Nanostructured passivation layers for improved efficiency of CIGS solar cells

Pedro Anacleto[1], E. Edoff[2], W-C. Chen[2], P.J. Bolt[3], W. van Boekel[3], J. van Deelen[3], Y. Zhou[4], S. Sadewasser[1]

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PC82
Demonstration of high temperature solid oxide fuel cell element based on nanohomogeneous yttria-stabilized zirconia microtubes

Andreas Nõlvak[1], Alexander Vanetsev[1,2], Gunnar Nurk[3], Aile Tamm[1], Glen Kelp[1], Tanel Tätte[1]

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PC84
Surface modification of triboelectric nanogenerators with ZnO nanoparticles

Vasiliki Prifti, Achilleas Bardakas, Ariadni P. Kerasidou, Christos Tsamis

Inst. of Nanoscience and Nanotechnology, NCSR "Demokritos"

PC86
A micro-structured micro capacitor on Si substrate having large capacitance for an integrated energy harvester

Hiroki Kuwano, V. Krikscikas, A. Sekiguchi, H. Oguchi

Tohoku University

PC88
Tuning of imprinting stamps for the fabrication of nano-electrodes for electrochemical CO2 reduction

Matthias Golibrzuch, Thomas Maier, Katharina Krischer, Markus Becherer

Technical University of Munich

PC90
One-Day Fast-Prototyping Process for Functionalized Membrane Array on Flexible Substrate

Thibault P. Delhaye[1], Chang Ge[2], Laurent A. Francis[1], Edmond Cretu[2], Denis Flandre[1]

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PC92
Beat-to-beat pulse wave velocity estimation by soft and flexible Aluminium Nitride based piezoelectric sensor

Lara Natta[1], Vincenzo Mariano Mastronardi[1], Prospero Lombardi[3], Francesco Guido[1,4], Luciana Algieri[1,4], Francesco Ciccirillo[5], Giuseppe Colonna[5], Marco Di Rienzo[3], Antonio Qualtieri[1], Massimo De Vittorio[1,2]

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PC97
Fabrication of a Flexible Meander Antenna for Saw Remote Sensing Applications

Leonardo Lamanna[1,2], Luigi Piro[1,2], Ilaria Marasco[3], Giovanni Niro[3], Francesco Guido[1], Luciana Algieri[1], Vincenzo M. Mastronardi[1], Antonio Qualtieri[1], Francesco Rizzi[1], Massimo De Vittorio[1,2], Antonella D'Orazio[3], Marco Grande[3]

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PC99
Ni-P/PET Fiber Prepared by Supercritical CO2 Catalyzation for Wearable Device Applications

Kenichi Tokuoka[1], Wan-Ting Chiu[3], Chun-Yi Chen[1], Tso-Fu Mark Chang[1], Akiko Saji[2], Hiromichi Kurosu[2], Masato Sone[1]

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PC101
Copper micro-electrode fabrication using laser printing and laser sintering processes for on-chip antennas on flexible integrated circuits

O. Koritsoglou[1], I. Theodorakos[1], F. Zacharatos[1], M. Makrygianni[1], D. Kariyapperuma[2], R. Price[2], B. Cobb[2], S. Melamed[3], A. Kabla[3], F. de la Vega[3], I. Zergioti[1]

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PC103
The Flexible/Stretchable Interconnection and TFT for AM Micro LED Display

Jae Bon Koo, Chan Woo Park, Jong-Heon Yang, Sung-Haeng Cho

Electronics and Telecommunications Research Institute (ETRI)

PC107
Ultrafast Laser Ablation of Flexible Graphene Micro-Heater for Wearable Application

Chien-ping Wang[1], Ming-Hong Xiao[1], Tien-Li Chang[2]

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PC111
An integrated fabrication method of micro RF coaxial transmitter on metal substrate combining positive and negative photoresist processes

Liqun Du[1], Min Han[2], Ming Zhao[1], Chengquan Du[1]

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PC94
Accumulated fluence methodology for selective metallic thin-film ablation from susceptible polymer substrate using femtosecond laser pulses

Chresten von der Heide, Andreas Dietzel

TU Braunschweig - Institute Of Microtechnology

PC96
Fabrication of stretchable supercapacitor using MnO2 nanoparticles and carbon nanotube on textile

Tae Gwang Yun, Seungmin Hyun, Chang Soo Woo

Korea Institute Of Machinery and Materials

PC98
Flash reduction of graphene oxide as cost effective fabrication technique for flexible micro-supercapacitors

Seok Hun Kang

Electronics and Telecommunications Research Institute

PC100
Aiming to improve gate controllability of paper transistors using carbon-nanotube-composite papers by using ionic liquid

Ryuji Iijima, Takahide Oya

Graduate School of Engineering Sciense, Yokohama National University

PC104
Fabrication of Nanopatterned PVDF-HFP Film Based Flexible Pressure Sensors

Jueun Kim, Hyungjun Lim, Jaejong Lee

Korea Institute of Machinery & Materials (KIMM)

PC108
Fabrication and Evaluation of Au-Cu Alloy 3D Structures toward MEMS Movable Components

Kyotaro Nitta[1], Haochun Tang[1], Chun-Yi Chen[1], Tso-Fu Mark Chang[1], Daisuke Yamane[1], Shinichi Iida[2], Katsuyuki Machida[1], Hiroyuki Ito[1], Kazuya Masu[1], Masato Sone[1]

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PC110
Polyimide foils with Au conductor traces for subretinal implants with long-term stability comparable to LCP

Ralf Rudorf[2], Anna Drzyzga[2], Martin Kokelmann[2], Claus J. Burkhardt[1], Alfred Stett[2]

[1]NMI Reutlingen, [2]Retina Implant AG

PC112
Effects of Fixed End Structure on Temperature Dependence of Structure Stability of Ti/Au Micro-Cantilever toward MEMS Application

Hitomi Watanabe[1], Masato Sone[1], Tso-Fu Mark Chang[1], Chun-yi Chen[1], Shinichi Iida[2], Daisuke Yamane[1], Hiroyuki Ito[1], Katsuyuki Machida[1], Kazuya Masu[1]

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PC113
Sample Geometry Effect on Mechanical Property of Electrodeposited Gold Evaluated by Micro-Bending Test

Kosuke Suzuki[1], Masato Sone[1], Ken Hashigata[1], Chun-Yi Chen[1], Takashi Nagoshi[2], Tso-Fu Mark Chang[1], Daisuke Yamane[1], Hiroyuki Ito[1], Katsuyuki Machida[1], Kazuya Masu[1], Keisuke Asano[1]

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PC115
Ultra-smooth Chip Scale Sensors for Adaptive Airfoil Control

Jan Niklas Haus, Martin Schwerter, Marcel Gäding, Monika Leester-Schädel, Andreas Dietzel

TU Braunschweig, Institut für Mikrotechnik

PC117
A facile method of direct stiffness measurement for AFM cantilevers

Lukas Avilovas, J.M.R Weaver, P.S. Dobson

The University Of Glasgow

PC119
In-situ TEM fatigue testing system for nanomaterials using an electrostatic actuator

Yan Cui[1], Yang Yang[1,2], Meng Liu[1], Tie Li[1], Yuelin Wang[1]

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PC121
Design, Fabrication and Characterization of Piezoelectric Cantilever MEMS for Underwater Application

Basit Abdul[1,2], Vincenzo Mariano Mastronardi[1], Antonio Qualtieri[1], Francesco Guido[1], Luciana Algieri[1], Francesco Rizzi[1], Massimo De Vittorio[1,2]

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PC123
Frequency control of bifurcation in the electrically coupled micromechanical resonator

Tian L[2], Wei X[1], Pu D[1], Jiang Z[1], Ren J[3]

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PC125
Adjustment method of MEMS dual-cantilever deflection using plastic deformation of metal thin film by thermal annealing

Masaru Tanaka[1,2], Y. Iijima[1], Y. Masuda[1], T. Sato[1], T. Mineta[1]

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PC114
High Efficient and Cost Effective Hybrid Aluminium Nitride Substrates for Power LED Modules

Chien-ping Wang[1], Yuan-Chun Huang[2], Hao-Qi Liu[1]

[1]Department of Mechanical Engineering, National Taipei University of Technology, [2]Department of Mechanical Engineering, Chung Yuan Christian University

PC116
A Novel High-performance RF-MEMS Resonator with Multiple Mode Generations

Zeji Chen[1,2,3], Xiao Kan[1,2,3], Tianyun Wang[1,2,3], Quan Yuan[1,2], Jinling Yang[1,2,3], Fuhua Yang[1,2,3]

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PC118
3D tactile microprobe with isotropic kinematics for industrial micro metrology

David Metz[1], Stephan Jantzen[2], Karin Kniel[2], Martin Stein[2], Andreas Dietzel[1]

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PC120
Electrodeposition of TiO2 Nanoparticle Reinforced High Strength Au Film for MEMS Applications

Yu-An Chien, Tso-Fu Mark Chang, Chun-Yi Chen, Daisuke Yamane, Hiroyuki Ito, Katsuyuki Machida, Kazuya Masu, Masato Sone

Institute of Innovative Research, Tokyo Institute Of Technology

PC122
Self-Aligned, High Resolution Conductive Lines for Micro Heaters Fabrication

Vito Matteo Di Pietro, H. M. Außerhuber, T. Mitteramskogler, P. Kulha, F. R. Tessarollo, M. Mühlberger

Profactor Gmbh

PC124
Dynamic performance of symmetric and asymmetric anti-spring structures

Yang Gao, Hongcai Zhang, Zhuangde Jiang, Xueyong Wei

Xi'an Jiaotong University

PC126
Fabrication and characterization of arrayed micro-structure with Ni film springs and photolithographed SU-8 micro-pins for Tactile Display Device

Kazuki Tuji[1], Jiale Xu[1], Konomu Abe[2], Tomomi Shimizu[2], Hiroyasu Hasegawa[2], Takashi Mineta[1]

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PC127
Large scanning range optical phased array with a compact and simple optical antenna

Pengfei Wang[1,2,3], Guangzhen Luo[1,2,3], Yajie Li[1,2,3], Wenyu Yang[1,2,3], Hongyan Yu[1,2,3], Xuliang Zhou[1,2,3], Yejin Zhang[1,2,3], Jiaoqing Pan[1,2,3]

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PC129
Full Electrostatic Control of Nanomechanical Buckling

Selcuk Oguz Erbil[1], Utku Hatipoglu[1], Cenk Yanık[2], Mahyar Ghavami[1], Atakan B. Arı[1], Mert Yuksel[1], Berke Demiralp[1], Mehmet Selim Hanay[1,3]

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PC131
Electromagnetical cantilevers for force spectroscopy Metrology-study of elecrothermal and electromagnectic actuation efficiency

Bartosz Pruchnik[1], Tomasz Piasecki[1], Karolina Orłowska[1], Wojciech Majstrzyk[1], Andrzej Sierakowski[2], Teodor Gotszalk[1]

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PC133
Parallel Tensile-mode Testing Of Single Crystal Silicon By Specimen Integrating Shear Strain Gauge

Yuki Yamazaki, Yoshikazu Hirai, Toshiyuki Tsuchiya, Osamu Tabata

Kyoto University

PC135
Novel Hybrid Silicon Microprobes for High-density Neural Activity Recording

Ashley Novais, Carlos Calaza, João Gaspar

International Nanotechnology Laboratory

PC137
Fire smoke detection with quartz crystal microbalance (QCM) oscillation sensor

Sumi Yoon, Dong-ki Hong, Hye-Lim Kang, Won-Hyo Kim, Woo Kyeong Seong, Kook-Nyung Lee

Korea Electronics Technology Institute(KETI)

PC139
Thermally Activated Discharging Mechanisms in SiNx Films with Embedded CNTs for RF MEMS Capacitive Switches

Matroni Koutsoureli[1], George Stavrinidis[2], Dimitrios Birmpiliotis[1], George Konstantinidis[2], George Papaioannou[1]

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PC141
Towards a Lab-on-Chip micro-calorimeter based on a fully-integrated CMOS-MEMS oscillator

Rafel Perelló-Roig, Jaume Verd, Dr. Jaume Segura

GSE-UIB / Universitat de les Illes Balears

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PC128
Nonlinear Nanomechanical Mass Spectrometry at the Single-Nanoparticle Level

Mert Yuksel[1], Ezgi Orhan[1], Cenk Yanik[2], Atakan B. Ari[1], Alper Demir[4], Ahmet Hakan Karakurt[1], Ramazan Tufan Erdogan[1], M. Selim Hanay[1,3]

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PC132
Towards Fabrication of Functionalised Polymer membranes

Nadezda Prochukhan, Abbie Keegan, Michael A. Morris

Trinity College Dublin, University Of Dublin

PC134
Highly-doped in-plane Si electrodes embedded between free-hanging microfluidic channels

Yiyuan Zhao[1], H.-W. Veltkamp[1], T.V.P. Schut[1], J. Groenesteijn[2], M. J. de Boer[1], R.J. Wiegerink[1], J.C. Lotters[1,2]

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PC136
Impedance spectroscopy of electrostatically driven MEMS resonators

Krzysztof Kwoka[1], Tomasz Piasecki[1], Karolina Orłowska[1], Paulina Szymanowska[1], Andrzej Sierakowski[2], Teodor Gotszalk[1]

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PC138
New method of monitoring the intrinsic strain during electrochemical deposition process using rosette gauge

Djaffar Belharet[1], Xavier Gabrion[2], Anthony Courtot[1], Laurent Robert[1], Samuel Queste[1], Gwenn Ulliac[1]

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PC140
INNOVATION-EL: The National Nanotechnology Infrastructure Network of Greece

Vasisileios Kilikoglou[1], Philomela Komninou[3], Spyridon H. Anastasiadis[2], Efstratios I. Kamitsos[4], Dimitrios Tsoukalas[5], Vassileios Bourganos[6], Michail Karakasidis[7], Eleni Makarona[1], Mirto Holiastou[8]

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PC143
Influence of the features deformation caused by cutting forces in micro end milling process for thin-walled copper electrode parts

Seok Jae Ha[1], Jeong Yeon Park[1], Gil Sang Yoon[1], Tae Sung Jung[2]

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PC145
Spectrum decomposition analysis of light-emitting diode with designed electrode and InGaN/GaN quantum wells as an active region

Yohei Nishidate[1], Irina Khmyrova[1], Yulia Kholopova[2], Anatoly Kovalchuk[2], Valery Zemlyakov[3], Ivan Maximov[4], Sergei Shapoval[2]

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PC147
FEM simulation for 3D self-folding using thermoplastic reflow of polymer actuators

Ran Zhang, Andreas Richter, Robert Kirchner

Technische Universität Dresden

PC149
A Novel Method for Depositing Patterned BCB using Spotter for Low Temperature Wafer Level Bonding

Shruti Jain, Michal M. Mielnik, Sigurd T. Moe

SINTEF Digital

PC151
Au/Ti double-layered films for bonding and residual gas gettering in MEMS encapsulation

Yuichi Kurashima[1], Takashi Matsumae[1], Eiji Higurashi[1], Shinya Yanagimachi[1], Hideki Takagi[1], Mr. Sudiyarmanto[2], Eiichi Kondoh[2]

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PC153
Reactive Bonding by Integrated Nanostructured Al/Pd Multilayer Thin Film Systems for MEMS Packaging Applications

El-mostafa Bourim, Il-Suk Kang, Hee Yeoun Kim

National NanoFab Center, Department of Nanostructure Technology

PC155
Basic study of position measurement system at tip of surgical forceps which is sensor fusion type

Tomoki Nishino[1], Hiroshi Tanigawa[2], Yakichi Higo[2], Takashi Furutsuka[2], Kyoichi Deie[3], Tetsuya Ishimaru[4], Tadashi Iwanaka[4]

[1]Ritsumeikan University, [2]The Research Organization of Science and Technology, Ritsumeikan University, [3]Kitasato University Children's Surgery, [4]Saitama Children's Medical Center Surgery

PC157
Evidence of Cation Selective Nano-Sized Conducting Filament Formation in Resistive Switching Memories

Dip Das, P. Johari, A. Kanjilal

Shiv Nadar University

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PC142
Large area Silicon-energy filters for ion implantation

Tamas Steinbach[1], Constantin Csato[2], Florian Krippendorf[2], Florian Letzkus[1], Michael Rüb[2,3], Joachim Burghartz[1]

[1]Institut Für Mikroelektronik Stuttgart (IMS-CHIPS), [2]mi2-factory GmbH, [3]Ernst-Abbe-Hochschule Jena

PC144
Improvement in IR absorption and thermal properties of a-Si based μ-bolometers by adopting the resistive hall-array pattern

Tae Hyun Kim[1], Jaeseob Oh[1], Jongcheol Park[1], Joo-Yun Jung[2], Daewon Hong[1], Hee Yeoun Kim[1], Jong-Kwon Lee[1]

[1]National Nanofab Center, [2]Korea Institute of Machinery and Materials

PC146
micro-Coriolis mass flow sensor with improved flow sensitivity through modelling of the sensor

Thomas V. P. Schut[1], Remco J. Wiegerink[1], Joost C. Lötters[1,2]

[1]University of Twente, [2]Bronkhorst High-tech BV

PC148
A stochastic model with IoT gas detector based on AI-enabled technique for predicting particulate matters of 2.5 μm and 10 μm

Ya-Wei Lee[1], Tien-Li Chang[2]

[1]National Defense University, [2]National Taiwan Normal University

PC150
Optimization of solder paste laser printing parameters for the assembly of electronic devices

Marina Makrygianni[1], Elena Margariti[1], Nikos Oikonomidis[2], Christos Spandonidis[2], Ioanna Zergioti[1]

[1]National Technical University of Athens, Physics Department, [2]Prisma Electronics SA

PC152
Electrical connection enhancement of conductive 3D printed parts based on PEDOT:PSS by metal plating

Valentina Bertana[1], Giorgio Scordo[1], Stefano Romano[1], Carmelo Nicosia[1], Simone Luigi Marasso[1,2], Matteo Cocuzza[1,2], Sergio Ferrero[1], Candido Fabrizio Pirri[1,3], Luciano Scaltrito[1]

[1]Chilab Laboratory, Department of Applied Science and Technology, Polito, [2]CNR-IMEM, [3]CSFT-IIT

PC154
On-chip beta spectrometry with absorber-embedded radionuclides

Patryk Krzysteczko[1], Michael Paulsen[1], Lina Bockhorn[2], Cornelia Aßmann[1], Erik Bork[1], Jörn Beyer[1]

[1]PTB, [2]PTB

PC156
Room-temperature direct bonding of LiTaO3 and SiC wafers for future SAW filter

Ryo Takigawa[1], Jun Utsumi[2]

[1]Kyushu University, [2]Mitsubishi Heavy Industries Machine Tool Co., Ltd

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PD – Lab-on-a-chip

PD01

Fabrication of free-hanging tubes for a high flow micro Coriolis mass flow meter

Jarno Groenesteijn[1], Meint de Boer[2], Jack van Putten[1], Wouter Sparreboom[1], Joost Lotters[1,2], Remco Wiegerink[2]

[1]Bronkhorst High-Tech BV, [2]MESA+ Institute or Nanotechnology, University of Twente

PD03

Performance of the electrochemical microactuator with a millisecond response time

Ilia V. Uvarov[1], Artem E. Melenev[1], Mikhail V. Lokhanin[2], Victor V. Naumov[1], Vitaly V. Svetovoy[3,4]

[1]Valiev Institute Of Physics And Technology Of Russian Academy Of Sciences, Yaroslavl Branch, 2P.G. Demidov Yaroslavl State University, [3]Zernike Institute for Advanced Materials, University of Groningen, [4]A.N. Frumkin Institute of Physical Chemistry and Electrochemistry RAS

PD07

Membrane integration for glass Organ-on-a-Chip systems using a reversible sealing technique

Eugen V. Koch, Andreas Dietzel

Institute of Microtechnology, Tu Braunschweig

PD09

Polymer supports for serial protein crystallography at X-ray free electron lasers

Celestino Padeste[1], Isabelle Martiel[1], Agnieszka Karpik[1,2], Per Magnus Kristiansen[2,1]

[1]Paul Scherrer Institut, [2]FHNW University of Applied Sciences and Arts Northwestern Switzerland

PD11

UV lithography based fabrication of SU-8 microneedles for drug delivery applications

Ajay Ap, Amitava DasGupta, Dhiman Chatterjee

Indian Institute of Technology Madras

PD13

Femtosecond Laser structuring with online control of polarization for advanced and buried microfluidic structures

Sven Meinen[1,2], Jonathan Kottmeier[1,2], Steffen Brinkmann[1,2], Andreas Dietzel[1,2]

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PD15

Soft X-Ray Compatible Liquid Cells

Alokik Kanwal[1], B. Robert Ilic[1], Subhrangsu Mukherjee[1], Eliot H. Gann[1], Cheng Wang[2], Isvar A. Cordova[2], Dean DeLongchamp[1], James Alexander Liddle[1]

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PD19

Compact platform for automated cell culture and stem cell differentiation

Gabriele Pitingolo[1], Yong He[1], Boxin Huang[1], Li Wang[2], Jian Shi[2], Yong Chen[1]

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PD – Lab-on-a-chip

PD02

A nanofluidic concentrator integrating long vertical nanotrenchetched with an optimized ICP-RIE process

Sokhna Mery Ngom[1], François-Damien Delapierre[2], Stephane Guilet[1], Edmond Cambril[1], Fatima Florès-Galicia[1], Jean Gamby[1], Antoine Pallandre[3], Isabelle Le Potier[1], Anne-Marie Haghiri-Gosnet[1]

[1]C2N - CNRS - U-Psud, [2]SPEC - CEA, [3]LCP - CNRS-Université Paris-Sud

PD04

Porous polymer coatings on SS microneedles (MNs) for glucose-responsive insulin delivery

Asad Ullah, Hye Jin Choi, Haroon Khan, Jin Ho Choi, Gyu Man Kim

Kyungpook National University

PD06

Investigation of Squeeze Flow Problem on a Nano-Scale

Sandrien Verloy[1,2], Han Gardeniers[1], Gert Desmet[2]

[1]University of Twente, [2]Vrije Universiteit Brussel

PD08

Biomimetic membranes manipulation in microfluidics: towards on-chip micropipette

Marianne Elias[1,2], Adrien Dutoya[1], Adrian Laborde[1], Aurelie Lecestre[1], Costanza Montis[2], Debora Berti[2], Barbara Lonetti[3], Clément Roux[3], Pierre Joseph[1]

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PD10

PID temperature control system based Microfluidic PCR chip for genetic analysis

Hyo Eun Kim[1], Hang-Beum Shin[2], Yong-Sang Kim[1]

[1]Department of Electrical and Computer Engineering, Sungkyunkwan University, [2]Corporate R&D, LG Chem

PD12

Rapid prototyping of a MEMS-based droplet dispenser using 3D printing

Ali Maziz[1], Remi Courson[1], Fabien Mesnilgrente[1], Elodie Bidal[2], Loic Leroy[2], Neso Sojic[3], Laurent Malaquin[1], Thierry Leichle[1]

1LAAS-CNRS, 2INAC-SyMMES, 3ISM

PD14

Open Microchannels filled with Nanoparticle Inks

Tina Mitteramskogler, Vito Matteo Di Pietro, Helene Ausserhuber, Michael Muehlberger

Profactor Gmbh

PD16

Parallel Ejection of pL-Droplets with Pneumatic Valve Integrated Micronozzle Array

Gaurav Pandey, Rohit Bhardwaj, Kentaro Tanagi, Azusa Kage, Takayuki Shibata, Moeto Nagai

Toyohashi University of Technology

Poster Session

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PD21
Design of microfluidic platforms for super resolution imaging of liver sinusoidal endothelial cell dynamics

Alessandra Dellaquila[1,2], Aurélie Vigne[1], Thomas Huser[2], Sasha Cai Lesher-Perez[1]

[1]Elvesys, [2]University of Bielefeld

PD23
Vapor Chamber / Heat Spreader with Wettability – Patterned Condenser

Theodoros P. Koukoravas, Georgios Damoulakis, Constantine Megaridis

University Of Illinois At Chicago

PD27
An amphiphilic copolymer-based chemocapacitor array for selective and sensitive sensing of volatile organic compounds

Anastasia Nika[1], Petros Oikonomou[2], Theodore Manouras[3], Panagiotis Argitis[2], Maria Vamvakaki[3,4], Merope Sanopoulou[2], Ioannis Raptis[2], Margarita Chatzichristidi[1]

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PD29
Microscale Modelling and Simulation of Gas Sensor Based on MoS2 Hollow Spheres

Zhenyu Yuan, Kaiyuan Zuo, Tong Wu, Junfeng Li, Xin Lin, Yichi Tong

Northeastern University, China

PD31
Atomic Gold Clusters Modified Polyaniline toward Highly Selective and Sensitive Electrochemical Sensor

Yu-An Chien[1], Parthojit Chakraborty[1], Wan-Ting Chiu[2], Chun-Yi Chen[1], Tso-Fu Mark Chang[1], Takamichi Nakamoto[1], Masato Sone[1]

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PD33
Point-of-care test based on an asymmetric optofluidic grating for buruli ulcer detection

Foelke Purr[1,2], Matthias Stehr[3], Mahavir Singh[3], Thomas P. Burg[2,4], Andreas Dietzel[1]

[1]Technische Universität Braunschweig, Institute of Microtechnology, [2]Max Planck Institute for Biophysical Chemistry, [3]Lionex Diagnostics & Therapeutics GmbH, [4]Technische Universität Darmstadt, Department of Electrical Engineering and Information Technology

PD35
Carbon nanogap electrode arrays for electrochemical sensors and biosensors

Stefan Partel, Volha Matylitskaya

Vorarlberg University of Applied Sciences

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PD18
Open and Closed Microfluidic Wall Modifications and in-situ Reactions via a new Atmospheric Plasma Apparatus

Angelos Zeniou[1,2], Dionysia Kefallinou[1], Nikos Vourdas[1], Angeliki Tserepi[1], Evangelos Gogolides[1]

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PD22
Novel Thermoplastic Fluoroelastomer for Rapid Fabrication of Chemically Compatible Microdevices

Alexander H. McMillan[1,2], Maarten B.J. Roeffaers[2], Sasha Cai Lesher-Perez[1]

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PD26
Fast and label-free procalcitonin determination with a White Light Reflectance Spectroscopy sensor

Dimitra Tsounidi[1], Georgios Koukouvinos[1], Dimitrios Goustouridis[2], Ioannis Raptis[2], Vassilios Tsaousis[3], Chrysanthos Mitropoulos[3], Sotirios Kakabakos[1], Panagiota Petrou[1]

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PD28
Magnetic design of multi-component nanoprobes for biomolecular diagnostics

Hubert Brueckl[1], Astrit Shoshi[1], Michael J. Haslinger[2], Tina Mitteramskogler[2], Michael Muehlberger[2], Joerg Schotter[3], Stefan Schrittwieser[3]

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PD30
Individually addressable two-electrode electrochemical cell array sharing a single reference/counter electrode for enzyme activity measurements

Manuel Gutiérrez-Capitán, Ángel Merlos, Antoni Baldi, César Fernández-Sánchez

Instituto de Microelectrónica de Barcelona (IMB-CNM), CSIC

PD32
Fast and Accurate Detection of Hydrogen Peroxide

Lisa-Marie Wagner[1], Matthias Pilecky[2], Karlheinz Kellner[1], Thomas Posnicek[1], Giulia Mazza[1], Martin Brandl[1]

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PD37
Label-free detection of biomolecules and cells by Localized Surface Plasmon Resonance

Santos Merino[1], Deitze Otaduy[1], Aritz Retolaza[1], Aritz Juarros[1], Angela I. Barreda[2], Francisco González[2], Fernando Moreno[2], Alfredo Franco[3], Jose Luis Fernández-Luna[3]

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PD39
Particle-based immunoassay: analysis of non-specific allergen-IgE interactions

Lacey Chunilal[1], Tonatiuh Yescas González[1], Victor Gaude[1], Annick Barre[2], Pierre Rougé[2], Lorna Garnier[3], Françoise Bienvenu[3], Jacques Bienvenu[3], Emmanuel Picard[4], David Peyrade[1]

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PD41
pH sensitivity evaluation of nanoFET sensor to extended sensing gate material

Hye-Lim Kang, Sumi Yoon, Dong-Ki Hong, Young Joo Kim, Sunga Song, Won-Hyo Kim, WooKyeong Seong, Kook-Nyung Lee

Korea Electronics Technology Institute (KETI)

PD45
Bridge type micro-platforms with sizes of membrane and bridge-width for low-powered micro gas sensor using MEMS techniques

Joon-shik Park[1], Kwang-Bum Park[1], Tae-Ho Hwang[1], Hyunsung Jung[2], Myoungpyo Chun[2]

[1]Korea Electronics Technology Institute, [2]Korea Institute of Ceramic Engineering & Technology

PD47
The improvement of solid-state pH sensor for a case study on neonatal urine monitoring

Lan Zhang, Jian Lu, Ryutaro Maeda

National Institute of Advanced Industrial Science and Technology

PD49
Towards integrated multi-sensor platform for monitoring of cell nutrient, metabolite, pH, viable cell mass, dissolved oxygen and temperature in bioreactors

Nurul Izni Rusli[1,2], Irene Pia Vincentini[3], Michael Kraft[1]

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PD34
NFC Antenna and Biosensor Electrode Fabrication on Intraocular Lens

Junhyoung Ahn[1], Kangho Lee[2], Daekyung Jung[1,3], Soongeun Kwon[1], Geehong Kim[1], Keebong Choi[1], Hyungjun Lim[1,3], JaeJong Lee[1,3]

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PD36
In vitro detection of pathogenic bacteria by phospholipase A activity for an integrated biosensor in domestic water systems

Sylvia Schneider, Jörg Ettenauer, Lisa Brandl, Martin Brandl

Department for Integrated Sensor Systems, Danube University Krems

PD38
Evaluation of various cancer cells lines by four-point probe measurements

Georgia Paivana[1,2], Dimitris Barmpakos[2], Sophie Mavrikou[1], Charalampos Karavasilis[2], Odysseus Tsakiridis[2], Grigoris Kaltsas[2], Spyridon Kintzios[1]

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PD40
Rapid detection of Salmonella typhimurium in drinking water samples by a White Light Reflectance Spectroscopy immunosensor

Michailia Angelopoulou[1], Panagiota Petrou[1], Konstantinos Misiakos[2], Ioannis Raptis[3], Sotirios Kakabakos[1]

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PD42
Synthesis of polymer-based nanoparticles for bio-nano application

Marta Szczęch, Krzysztof Szczepanowicz, Piotr Warszyński

Jerzy Haber Institute of Catalysis And Surface Chemistry, Polish Academy Of Sciences

PD44
Dielectrophoretically enhanced detection of E. coli cells by an integrated optical biosensor system

Dániel Petrovszki[1], Sándor Valkai[1], Evelin Gora[1], Martin Tanner[1], Anita Bányai[2], Péter Fürjes[2], András Dér[1]

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PD53
A silicon membrane-silver nanoparticles SERS chip for trace molecules detection

Kestutis Nemciauskas[1], Lina Traksele[2], Alvija Salaseviciene[2], Valentinas Snitka[1]

[1]Kaunas University of Technology, Research Center for Microsystems and Nanotechnology, [2]Kaunas University of Technology, Food Institute

PD55
Storage of protein coated beads on point-of-care microfluidic cartridges for immunoassay applications

Benita Johannsen[1], Lena Karkossa[1], Desirée Baumgartner[1], Lara Müller[1], Roland Zengerle[1,2], Konstantinos Mitsakakis[1,2]

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PD57
Thermal design of LoC-on-PCB

Francisco Perdigones, Miguel Cabello, Jose M. Quero

Escuela Superior de Ingeniería. Universidad de Sevilla

PD59
Versatile fabrication technology for microfluidic systems

Patrícia Sousa[1], Jordi Llobet[1], José Fernandes[1], Sara Vidal[2], Tamara Delgado[2], Perea Otero[2], Pablo Romero[2], João Gaspar[1]

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PD61
Effect of oxygen plasma micro/nanostructured PMMA plates on the adhesion and proliferation of normal and cancer cells

Anastasia Kanioura[1], Panagiota Petrou[1], Vassilios Constantoudis[2], Dimitris Kletsas[3], Angeliki Tserepi[2], Evangelos Gogolides[2], Margarita Chatzichristidi[4], Sotirios Kakabakos[1]

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PD63
A microfluidic device for live cells capturing and phenotyping using dielectrophoresis and metasurface-enhanced infrared reflection spectroscopy

Glen Kelp[1,2,3], Joy Li[3], Junlan Lu[3], Nicholas DiNapoli[3], Robert Delgado[3], Shourya Dutta-Gupta[3,4], Gennady Shvets[3]

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PD65
Circular continuous flow PCR on a PCB microchip

Panagiotis Skaltsounis, Georgia Kaprou, Angeliki Tserepi, George Kokkoris

Institute Of Nanoscience And Nanotechnology Ncsr "Demokritos"

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PD46
Patterning of Carbon Quantum Dots based thin films for electronic devices and sensors

Apostolos Segkos[1,2], Charalampia Kalogirou[2], Elias Sakellis[1], Nikolaos Boukos[1], Konstantinos Kordatos[2], Christos Tsamis[1]

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PD50
Authentication of bilberries by Surface Enhanced Raman Spectroscopy

Lina Traksele[1], Ceslovas Bobinas[2], Gitana Alencikiene[1], Alvija Salaseviciene[1], Valentinas Snitka[1]

[1]Kaunas University of Technology, Food Institute, [2]Lithuanian Research Centre for Agriculture and Forestry Institute of Horticulture

PD52
A plasmonic array of standing wires in the trigonal symmetric arrangement for broadband, polarization insensitive molecular sensing

Andrea Giugni, Marco Allione, Bruno Torre, Giovanni Marinaro, Jurgen Kosel, Enzo Di Fabrizio

Kaust - King Abdullah University Of Science and Technology

PD54
Evaporation-induced biosensing on superhydrophobic surface

Rokon Uddin, Ville Jokinen, Mehran Mohammadi, Sami Franssila

Aalto University

PD56
Controlled Dispensing and Mixing in Microfluidic Devices for Multiplex Genetic Diagnosis

Daigo Natsuhara[1], Keisuke Takishita[1], Kisuke Tanaka[1], Azusa Kage[1], Moeto Nagai[1], Yuko Mizukami[2], Norikuni Saka[2], Takayuki Shibata[1]

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PD58
Droplet-based fluid central processing platform and applications

Yaru Xing[1], Xianming Liu[2], Yu Liu[1], Rifei Chen[1], Xing Cheng[1]

[1]Southern University of Science and Technology, [2]Dalian Institute of Chemical Physics, Chinese Academy of Sciences

PD60
Fabrication of a drug delivery tool via Laser-Induced Forward Transfer

Agamemnon Kalaitzis[1], Christina Kryou[1], Chrysoula Chandrinou[1], Nikolaos Adamopoulos[2], Ioanna Zergioti[1]

[1]National Technical University of Athens, [2]Galenica S.A.

PD62
Reflow Process for Fabricating Curved Shaping Molds of PDMS Microchannels and Chambers

Shunya Okamoto[1,2], Yoshiaki Ukita[1]

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PD67
On-chip synthesis of ruthenium complex in a microchannel by microwave heating

Masaya Takeuchi[1], Mitsuyoshi Kishihara[2], Toshiro Kobayashi[3], Akinobu Yamaguchi[1], Takeko Matsumoto-inoue[4], Yuichi Utsumi[1]

[1]University of Hyogo, [2]Okayama Prefectural University, [3]National Institute of Technology, Tsuyama College, [4]Minerva Light Lab. Inc.

PD69
Development of an automated system for obstructive sleep apnea treatment based on machine learning and breath effort monitoring

A-I Kanaris[1], K. Tsoutis[2], K-N Kanellopoulou[1], S. Chatziandroulis[1], Vasiliki Tsouti[1]

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PD71
3D Scaffolds by soft lithography for retinal tissue reconstruction

Frédéric Hamouda[1], Stéphane Guilet[1], Etienne Herth[1], Elise Herardot[2], Lise Morizur[2], Karim Ben M'Barek[2], Christelle Monville[2]

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PD73
Internalization and viability studies of suspended nanowires silicon chips in HeLa cells

Sara Duran[1], Marta Duch[1], Rodrigo Gómez[1], Marta Fernández[1], Manuel Reina[2], Claudia Müller[2], Álvaro San Paulo[3], Jaume Esteve[1], Susana Castel[2], José Antonio Plaza[1]

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PD77
Nanosecond Laser Irradiation on Cells Using Titanium Thin Film for Massively Parallel Cell Intranuclear Delivery

Shin Sawai[1], Harsh Gupta[1], Tuhin Santra[2], Azusa Kage[1], Takayuki Shibata[1], Moeto Nagai[1]

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PD79
In vitro bone marrow tissue development in 3D microfluidic cell culture chambers towards bone marrow-on-a-chip

Dionysia Kefallinou[1], Maria Grigoriou[2], Angelos Zeniou[1], Dimitrios T. Boumpas[2,3], Evangelos Gogolides[1], Angeliki Tserepi[1]

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PD83
Sensitive and rapid PCB-based microfluidic platform for monitoring urinary tract infections

Myrto Filippidou[1], Georgia Kaprou[1], Sotiris Ntouskas[1], George Kokkoris[1], Panagiota Petrou[2], Dimitris Mastellos[2], Stavros Chatzandroulis[1], Angeliki Tserepi[1]

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PD64
Impulsion system for DNA amplification microdevice integrated on PCB

Dimitra Kouvara[1], Georgia Kaprou[1], Francisco Perdigones[2], José Manuel Quero[2], George Kokkoris[1], Angeliki Tserepi[1]

[1]NCSR Demokritos, Institute of Nanoscience & Nanotechnology, [2]University of Seville, School of Engineering

PD66
The Investigation of Water Disinfection by Deep Ultraviolet Light-Emitting Diodes Array

Prof Chien-ping Wang[1], Zong-Ru Yeb[2]

[1]National Taipei University of Technology, [2]Department of Mechanical Engineering, Chung-Yuan Christian University

PD68
Automated and versatile platform for cell culture and cardiac differentiation on engineered microsystems

Gabriele Pitingolo[1], Yong He[1], Boxin Huang[1], Li Wang[2], Yong Chen[1]

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PD72
Photocatalytic Nanofabrication and Intracellular Imaging of Living Cells Using Functionalized AFM Probe

Takayuki Shibata[1], Kazutaka Uchida[1], Junya Araki[1], Miho Ishii-Teshima[1], Terutake Hayashi[2], Moeto Nagai[1]

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PD74
Microfluidic channel with embedded monolayer nanofibers for cell culture and co-culture

Boxin Huang[1], Yong He[1], Li Wang[2], Jian Shi[2], Jie Hu[1], Elrade Rofaani[1], Ayako Yamata[1], Yong Chen[1]

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PD78
Cryo-FIB preparation of neuron cell interface

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PD82
Development of organ-on-chip barrier devices in new soft thermoplastics

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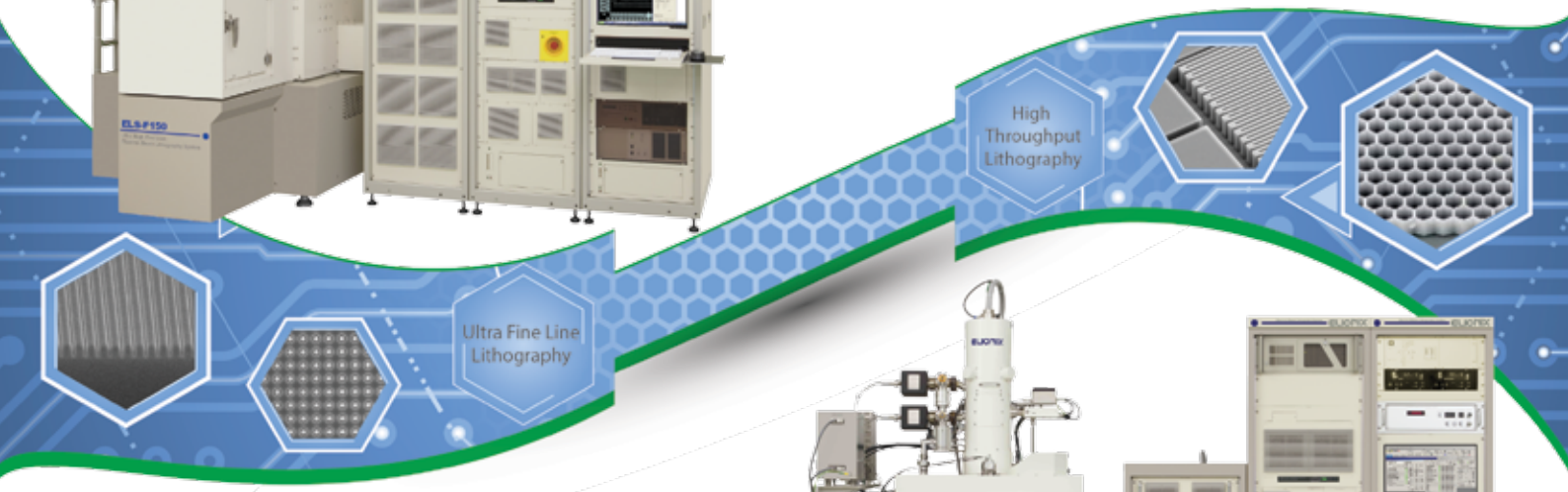
Company Profile

Over 40 years of nanotechnology expertise

Since the founding of Elionix in 1975, we have driven advances in nanotechnology. Elionix collaborates with global research and development efforts in the fabrication of a variety of nanoscale devices. For over 40 years we have assisted in the development of silicon based devices, as well as more exotic materials. Our unique approach and application-specific solutions allows our customers to meet future market challenges.

ELS-F150 Electron Beam Lithography System

The world's first 150 kV EBL system with guaranteed linewidths of four nanometers.



ELS-HS50 EBL System

The world's fastest Electron Beam Lithography system for sub-micron fabrication, offering the ability to reach feature sizes unachievable by direct write laser based tools.

Over 40 years of customer commitment

As research and development continually moves forward in a wide range of fields, fueled by the efforts of researchers and engineers, a high demand for constant improvement in terms of performance excellence and functions leveraging cutting-edge technologies is required. At Elionix, we are committed to responding to such demands by providing our customers with what they need to succeed. Together with SEMTech Solutions, we also strive for total customer satisfaction with a responsive customer service team and dedicated applications support.

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Company Profile

Solutions for Innovation

Based on the Company Philosophy and the Guiding Principles, we aim to deliver the best products and services to our customers all over the world.
With continually supporting and working together with the customers, we will strive to make continuous contributions to the future of Science.

Company Philosophy

On the basis of "Creativity and Research and Development",
JEOL positively challenges the world's highest technology,
thus forever contributing to the progress in both Science and Human Society through its products.

Guiding Principles for JEOL Staff

On the basis of our company philosophy emphasizing "Creativity" and "Research and Development", we will act up to the following guiding principles, with a pride as JEOL staff and realizing our responsibilities as members of the society.

1. We will take pride in our work and endeavor to reform our present situation with challenging spirits.
2. We will be grateful to our customers for their support and do our best to offer the best products and service to them.
3. We will keep ourselves in good physical and mental health and create a nice and rewarding working environment.
4. We will understand others' positions and fulfill our responsibilities through good teamwork.
5. We will be constantly cost-minded and utilize time and goods to their best advantage.
6. We will absorb a wide range of knowledge and put it in practice for our own growth.

Company Outline

Name
JEOL Ltd.

Address (head office)
1-2, Musashino 3-chome, Akishima, Tokyo, 196-8558, Japan

Business activities
Manufacturing, sales, research and development of high-precision scientific instruments (electron optics instruments and analytical instruments), measuring instruments, semiconductor equipment, industrial equipment and medical equipment.
Manufacturing and maintenance service of products and components associated with these instruments, and purchase and sales of peripheral equipment.

Establishment
May 30, 1949

Capital
10,038 million yen (as of March 31, 2018)

Stock
Listed on the First Section of the Tokyo Stock Exchange

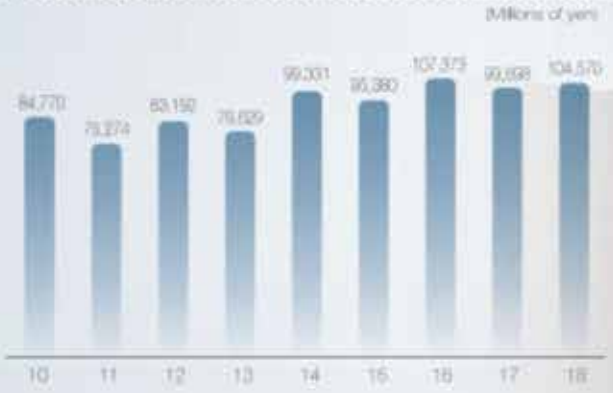
Net Sales (consolidated)
104,570 million yen (as of the end of fiscal year 2018 (March 31, 2018))

Number of employees (consolidated)
3,008

Domestic subsidiaries and affiliated companies

Corporate name	Production	R&D, design	Service	Training, others
JEOL TECHNICS LTD.	●	●		
JEOL TECHNOSERVICE CO., LTD.				●
JEOL MIKAWA CO., LTD.	●			
JEOL INSTRUMENTS INC.			●	
JEOL RESONANCE Inc.	●	●	●	●

Net Sales (consolidated)



Akishima Head Office & Factory

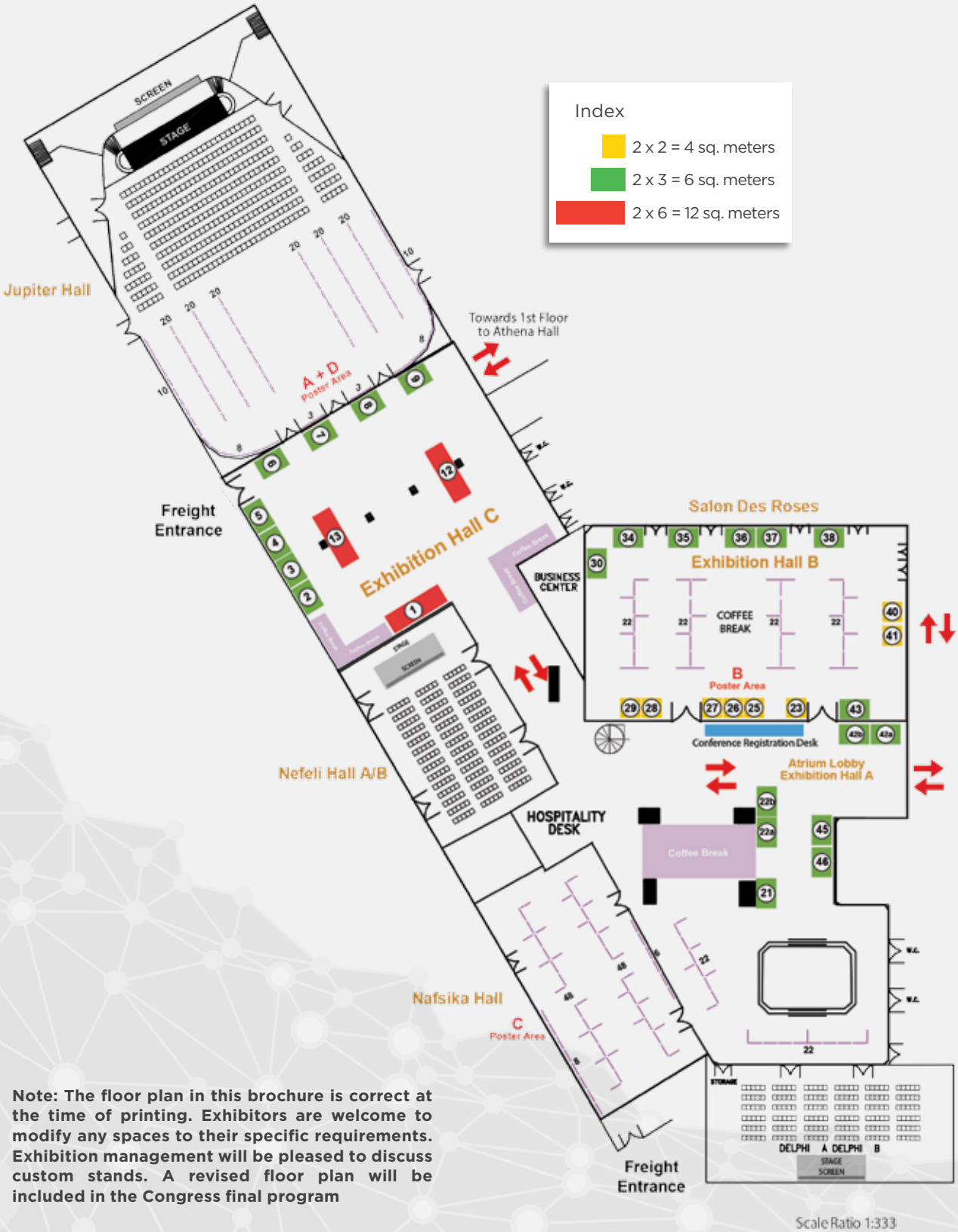
Sponsors & Exhibitors

45th International Conference on MINE 2019

Exhibition and Poster Area Plan

The Commercial / technical exhibition will be held in **Rodos Palace Hotel**.

The conference program will be structured to maximize the opportunity for participants to visit the commercial exhibition.



Note: The floor plan in this brochure is correct at the time of printing. Exhibitors are welcome to modify any spaces to their specific requirements. Exhibition management will be pleased to discuss custom stands. A revised floor plan will be included in the Congress final program

Exhibitors' List

Platinum Sponsors - Exhibitors

Booth 13
ELIONIX

Gold Sponsors - Exhibitors

Booth 38
ELSEVIER

Booth 6
JEOL Solutions for Innovation

Booth 12
RAITH NANOFABRICATION

Premium Exhibitors

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ADVANTEST

Booth 2
cnrs

Booth 8
GenISys

Booths 4-5
HEIDELBERG INSTRUMENTS

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nanomaterials an Open Access Journal by MDPI

Booth 1
micro resist technology

Booth 9
nanoscribe

Standard Exhibitors

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AMO

Booths 40-41
ALLRESIST

Booth 46
EULITHA

Booth 21
EVG

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project FLEXPOL EUROPE

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microlight3D

Booth 22A
NaOmetrEis

Booth 22B
nanoplasmas

Booth 25
Nanotypos ADVANCED NANOMANUFACTURING

Booth 42α
DEMOKRITOS

Booth 36
OXFORD INSTRUMENTS

Booth 28
SPS 4PICO

Booth 37
θ metrisis

Booth 43
Vistec Electron Beam

Booth 23
zyvex LABS

Booth 42β
Homer and Nanotechnology Art Corner

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