

# NNT2018



18-20 SEPTEMBER 2018  
BRAGA, PORTUGAL

# PROGRAM

*NNT 2018* | Your Platform for Emerging Innovation

**COME, SHARE, DISCUSS,  
LEARN & ENJOY!**

Unparalleled learning and networking experiences.

**NNT 2018**, the 17<sup>th</sup> International Conference on Nanoimprint and Nanoprint Technologies, the world's leading symposium on nanoimprint and nanoprint, will take place September 18-20, 2018, at INL, the International Iberian Nanotechnology Laboratory.

NNT2018 offers an exciting scientific programme with Keynote Speakers, Tutorials, Elevator and Discussion Sessions, and Special and Social Events.

Make the most out of your experience at the NNT2018 by participating in the plenary and technical sessions, networking during breaks, and relaxing with other attendees during the social activities.

Please, check the programme below.



## DAY 1 | TUESDAY, SEPTEMBER 18 2018

**09:00 - 14:00**

EXHIBITORS SET-UP

**14:00 - 15:00**

Registration

**15:00 - 16:00**

Exhibition

**16:00 - 17:00**

**TUTORIAL 1: *Science communication***,  
Elisabeth Nilsson, Lund University, Sweden

**17:00 - 18:00**

**TUTORIAL 2: *Intellectual property***  
Ulf Håkansson, AWA Patent, Sweden

**18:30 - 20:00**

JOIN US AT THE WELCOME RECEPTION

09:00 - 09:30  
Opening Session

**Emerging Innovation | Session #1**  
Chair: L. Montelius

09:30 - 10:00  
Talk 1.1 KEYNOTE 1:  
*Nano-materials research and development in Europe*  
Marcel van de Voorde, Univ. Tech. Delft (emeritus), Belgium

10:00 - 10:40  
Talk 1.2 TUTORIAL 1:  
*Material considerations for nanoimprint lithography*  
Jay Guo, Univ. of Michigan, USA

10:40 - 11:10  
Coffee-Break

**Stamps, Processes, Materials  
for Nanofabrication | Session #2**  
Chair: H. Lee, J. Choi

11:10 - 11:25  
Talk 2.1 *Hierarchical micro-nano surface topographies  
by combined photo and nanoimprinting lithography*  
Maria Teresa Alameda, IMDEA Nanoscience, Spain

11:25 - 11:40  
Talk 2.2 *Hybrid fabrication process via UV nanoimprint and EB  
lithography using UV-curable positive-tone EB resist*  
Takao Okabe, Tokyo University of Science, Japan

11:40 - 11:55  
Talk 2.3 *Investigating multilayer  
multimaterial nanoimprinting*  
Michael Mühlberger, Profactor, Austria

11:55 - 12:10  
Talk 2.4 *3-D mold profile correction for resin  
shrinkage in NIL process*  
Kenta Watanabe, Osaka Prefecture University, Japan

12:10 - 12:25  
Talk 2.5 *Computational study on viscosity  
modulation in ultra-thin resin*  
Masaaki Masuda, Osaka Prefecture University, Japan

12:25 - 12:40  
Talk 2.6 *Roll to roll pilot line for continuous production  
of mechanically enhanced antireflective surfaces*  
Ivan Navarro-Baena, IMDEA Nanoscience, Spain

12:40 - 14:15  
Lunch

**Applications 1 | Session #3**  
Chair: Y. Hirai, H. Hauser

14:15 - 14:55  
Talk 3.1 TUTORIAL 2: *From NIL to production: upscaling challenges  
with VCSELs and LEDs*, Marc Verschuuren,  
Philips SCIL Nanoimprint Solutions, The Netherlands

14:55 - 15:10  
Talk 3.2 *Enabling volume production of novel  
microoptic and nanophotonic devices*  
Martin Eibelhuber, EVGroup, Austria

15:10 - 15:25  
Talk 3.3 *High-speed fabrication of large-scale micro-patterned  
thermoplastic films for industrial applications*  
Nastasia Okulova, Danapak Flexibles A/S, Denmark

15:25 - 15:40  
Talk 3.4 *Inline monitoring system for high-speed  
roll-to-roll hot embossing of micrometer and sub  
micrometer structures using seamless direct laser  
interference patterning treated sleeves*  
Andreas Rank, TU Dresden, Germany

15:40 - 16:00  
Coffee-Break

**Applications 1(cont.) | Session #4**  
Chair: J. Taniguchi, H. Schiff

16:00 - 16:30  
Talk 4.1 INVITED: *Ultrafast S&R nanopatterning*  
Massimo Tormen, ThunderNIL, Italy

16:30 - 16:45  
Talk 4.2 *Nanostructuring of complex surface presented  
on 3D printed implants and lenses*  
Michael Haslinger, Profactor GmbH, Austria

16:45 - 17:00  
Talk 4.3 *Tumor cell migration and screening in  
nanoimprinted 3D biomimetic platforms  
with porous topography*  
Stella Pang, City University, Hongkong

17:00 - 18:15  
POSTER SESSION

18:15 - 18:30  
BREAK

18:30 - 23:30  
CONFERENCE DINNER IN BRAGA

## Industrial | Session #5 Chair: S. Chou, H. Schiff

09:00 - 09:30

Talk 5.1 INVITED: *Directed assembly of nanoelements*  
Ahmed A. Busnaina, Nanoscale Science  
and Engineering Center, USA

09:30 - 09:50

Talk 5.2 INVITED:  
*Process and process integration requirements for high volume  
manufacturing of semiconductor devices using NIL*  
Jin Choi, Canon CNT, USA/Japan

09:50 - 10:10

Talk 5.3 *High-volume production systems for nanoimprinting  
on large-area glass and display applications*  
Jan Matthijs ter Meulen, Morphotonics, The Netherlands

10:10 - 10:25

Talk 5.4 *R2R and R2P manufacturing technology and upscaling for  
large area seamless UV-NIL*  
Thomas Exlager, Coatema Coating Machinery GmbH

10:25 - 10:40

Talk 5.5 *Substrate Conformal Imprint Lithography high volume  
production - tooling, overlay performance,  
process and materials,*  
Marc Verschuuren, Philips SCIL Nanoimprint Solutions, The Netherlands

10:40 - 11:05

Coffee-Break

## Applications 2 Photonics and Solar Cells | Session #6 Chair: M. Verschuuren, J. Guo

11:05 - 11:35

Talk 6.1 INVITED *Nano-structures embedded perovskite solar cells  
and photoelectrode for improved performances*  
Heon Lee, Korea University, Korea

11:35 - 11:50

Talk 6.2 *Fabrication of inner AR substrate for  
dye-sensitized solar cells by solvent-assisted  
room temperature nanoimprinting*  
Na Yang, Nagoya University, Japan

11:50 - 12:05

Talk 6.3 *Photonic structures by interference and NIL  
for highest efficiency solar cells*  
Hubert Hauser, Fraunhofer Institute for Solar  
Energy Systems, Germany

12:05 - 12:20

Talk 6.4 *Nanoantenna-based ultrasensitive  
immunoassay biosensor*  
Faheng Zang, Princeton, USA

12:20 - 12:35

Talk 6.5 *Plasmonic sensor with asymmetrical  
three-dimensional nanostructures and high sensitivity*  
Stella Pang, City University Hongkong, HK

12:35 - 14:05

Lunch

## Emerging Technologies | Session #7 Chair: S. Pang, M. Tormen

14:05 - 14:45

Talk 7.1 KEYNOTE 2: *Paper electronics*  
Elvira Fortunato, New University of Lisbon, Portugal

14:45 - 15:00

Talk 7.2 *Direct NIL of colloidal self-organizing  
nanowire-/particle inks for flexible, transparent electrodes*  
Lukas Engel, Leibniz Institute for New Materials, Germany

15:00 - 15:15

Talk 7.3 *The behaviour of nanoparticle inks in  
open microchannels*  
Tina Mitterramskogler, Profactor, Austria

15:15 - 15:30

Talk 7.4 *Nanoimprint meets microfluidics: metal wires  
from capillary filled nanoparticle dispersions*  
Barbara Horvath, Paul Scherrer Institut, Switzerland

15:30 - 16:00

Talk 7.5 INVITED: *New NIL processes - an outlook*  
Stephen Y. Chou, Princeton, USA

16:00

CONFERENCE ENDING

16:10 - 17:00

BREAK

17:00 - 23:00  
BARBECUE