

# PROGRAM

27 - 28 May 2021 – **FINAL VERSION**



Thursday 27 May 2021

Individual pre-conference meetings (09:00-11:30)  
([organized mutually between interested participants](#))

11:30-12:45 Lunch break

## PRN 2021 Online Conference

12:45-13:00 **Welcome online** ([zoom meeting opens 15 min ahead](#))

13:00-13:15 Per Magnus Kristiansen (INKA FHNW, Switzerland)  
"Welcome to the Polymer Replication on Nanoscale 2021"

### Session 1: Mastering, Tooling and Integration (13:15-14:45)

Chair: Per Magnus Kristiansen (FHNW, Switzerland)

13:15-13:35 Invited: Ronald Holtz (FHNW, Switzerland)  
"State of the art and future potential of lasers for micro-machining of polymeric materials"

13:40-13:55 Nan Zhang (UCD, Ireland)  
"Development of a novel high-performance self-lubricating micro/nano mould based on 2D material nanocomposite"

14:00-14:15 Jerome Werder (FHNW, Switzerland)  
"Origination of super-smooth micro-optical elements"

14:20-14:30 Laurent Feuz (FHNW Switzerland)  
"The role of arts in science" (Launch of the PRN image award)

14:30-14:40 Nan Zhang (UCD) & Per Magnus Kristiansen (FHNW)  
"Advanced Manufacturing of Micro-/Nanstructured Polymer Surfaces"  
Announcement of a Special Issue of micromachines

14:45-15:30 **Coffee break** ([break-out sessions + Session 1 Q&A](#))

15:30-15:55 Invited: Reinhard Voelkel (Süss Microoptics, Switzerland)  
"Microlens Imprint for Automotive Lighting"

### Session 2: Nanoimprint Lithography (16:00-17:20),

Chair: Helmut Schift (PSI, Switzerland)

16:00-16:15 Celestino Padeste (PSI, Switzerland)  
"Polymer supports for serial protein crystallography at X-ray free electron lasers"

16:20-16:35 Benjamin Gallinet (CSEM, Switzerland)  
"Nanoimprint and metallo-dielectric coatings for high field of view diffractive optical couplers and narrowband filters"

16:40-16:55 Yuyang Zhou (UCD, Ireland)  
"Development of coronavirus-resistant films by combining nanomaterials with nanoimprinting"

17:00-17:15 Shahana Bishnoi (DTU, Denmark)  
"Microfabrication of shape and size specific hydrogels to serve as artificial red blood cells"

17:20-17:50 **Coffee break** ([break-out sessions + Session 2 Q&A](#))

17:50-18:15 Invited: Jim Watkins (Univ. Amherst, USA)  
"Hierarchical Carbons and Ceramics via Polymer Replication at the Nanoscale: Integration of Nanoimprinting, Self-Assembly, and Flash Photothermal Processing"

18:20-18:30 Closing remarks by Laurent Feuz (FHNW, Switzerland)

18:30-19:30 **Virtual beer & networking** ([optional](#))

Friday 28 May 2021

08:45-09:00 **Welcome online** ([zoom meeting opens 15 min ahead](#))

### Session 3: Industrial Replication Technologies I (09:00-10:30)

Chair: Per Magnus Kristiansen (FHNW, Switzerland)

09:00-09:25 Invited: Thomas Mortelmans (PSI, Switzerland)  
"Thermoplastic 3D nanofluidic devices for biosensing"

09:30-09:45 Nekane Lozano Hernandez (Eurecat, Spain)  
"Microtexturation of liquid silicone rubber surfaces by injection moulding using hybrid polymer inlays"

09:50-10:05 Guggi Kofod (Rel8 Asp, Denmark)  
"A traceability system for injection molding"

10:10-10:25 Carlos Sáez (Eurecat, Spain)  
"Replication of hierarchical nanostructures on Polycarbonate via Isothermal injection moulding using NIL-textured films"

10:30-11:00 **Coffee break** ([break-out sessions + Session 3 Q&A](#))

11:00-11:20 Selected people from the INKA Team (FHNW, Switzerland)  
"Virtual Lab Tour – insights into our infrastructure & applied R&D in the field of functional polymer surfaces – and beyond"

### Session 4: Industrial Replication Technologies II (11:20-12:40)

Chair: Laurent Feuz (FHNW, Switzerland)

11:20-11:35 Invited: André Bernard (matriq AG, Switzerland)  
"The watermark for plastics: creating the digital twin"

11:40-11:55 Helmut Schift (PSI, Switzerland)  
"How to keep a good skin without peeling: bonding of a roll-to-roll extrusion coated film on a back injection molded polymer body"

12:00-12:25 Invited: Rafael Taboryski (DTU, Denmark)  
"Roadmaps for large area nano-pattern replication"

12:30-13:00 **Pre-lunch break** ([break out sessions + Session 4 Q&A](#))

13:00-14:30 **Lunch break** ([time for individual networking](#))

### Session 5: Metrology, Simulation and Modeling (14:30-15:30)

Chair: Jerome Werder (FHNW, Switzerland)

14:30-14:45 Tamara Aderneuer (CSEM Muttenz, Switzerland)  
"Advanced metrology of freeform micro-optical elements"

14:50-15:05 Nikolaos Lempesis (EPFL, Switzerland)  
"Controlling wettability through modeling-based surface topography engineering"

15:10-15:25 Jelle Snieder (TU Delft, The Netherlands)  
"Simulating the Layer Thickness in Roll-to-Plate UV Nanoimprint Lithography"

15:30-16:00 **Coffee break** ([break-out sessions + Session 5 Q&A](#))  
last chance for Best Talks Award voting!

16:00-16:15 *Announcement of Best Talk Awards*

16:15-16:30 Closing by Per Magnus Kristiansen (FHNW, Switzerland)  
"Polymer Replication on Nanoscale – quo vadis?"

16:30 This is the end of PRN2021