

PROGRAM

09-10 May 2022: Online or Room 206, UCD Material Science and Engineering Center for in-person

PRN
2022
Polymer
Replication
on Nanoscale

Monday 9 May 2022

09:00-10:00 (GMT) Individual pre-conference meetings

10:00-10:10 **Kenneth Stanton (Head of UCD School of Mechanical and Materials Engineering, Ireland)**

Welcome address

10:10-10:20 **Nan Zhang (MNMT-UCD, Ireland)**

Welcome to the Polymer Replication on Nanoscale 2022

Session 1: Mastering and Tooling I (10:20-12:55)

Chair: Michael Gilchrist (UCD, Ireland)

10:20-10:55 **Nan Zhang (UCD, Ireland)**

Manufacturing of plastic microfluidics: Translating microfluidic devices from laboratory prototyping into scale-up production

10:55-11:30 **Invited: Gert-Willem Römer (University of Twente, the Netherlands)**

Laser texturing using (ultra) short pulsed lasers: Fundamentals and applications

11:30-12:05 **Invited: Graham Cross (TCD, Ireland)**

New nanometric technologies for diamond-like-carbon (DLC) injection mould inserts

12:05-12:30 **Yang Zhang (DTU, Denmark)**

Surface micro structuring injection moulding using soft tooling

12:30-12:55 **Tianyu Guan (UCD, Ireland)**

Synthesis of two-dimensional WS₂/nickel nanocomposites via electroforming for high-performance micro/nano mould tools

12:55-13:15 **Virtual Networking, coffee break (Online, Breakout room)**

13:15-13:50 Lunch break (individually)

13:50-14:00 Lab tour (video version)

Session 2: Microfluidics and functional surfaces I (14:00-16:50)

Chair: Nan Zhang (UCD, Ireland)

14:00-14:35 **Invited: Henne van Heeren (Enabling MNT, the Netherlands)**

Trends in the microfluidic industry 2022

14:35-15:00 **Rafael Taboryski (DTU, Denmark)**

Engineering of wetting properties for polymer surfaces

15:00-15:25 **Meng Li (Zurich Instruments, Switzerland)**

Fast electrical impedance spectroscopy for microfluidic single cell characterization and counting

15:25-15:35 Coffee break

15:35-16:00 **Damien King (FPC-DCU, Ireland)**

Injection moulded microfluidic lab on a disc platform for extracellular vesicle analysis

16:00-16:25 **Rohit Mishra (DCU, Ireland)**

POC Microfluidic Platform Technologies: Bridging the Translational gap

16:25-17:00 **Invited: Jed Harrison (FPC-DCU, Ireland)**

Micron and Nano-scale Polymer Systems for Biochemical Analysis

17:00-17:20 **Virtual Networking, coffee break (Online, Breakout room)**

Tuesday 10 May 2022

Session 3: Micro/nano Replication (09:00-11:00)

Chair: Damien King (DCU, Ireland)

09:00-09:35 **Invited: Per Magnus Kristiansen (FHNW, Switzerland)**

Polymer surface topographies go industrial

09:35-10:10 **Invited: Giovanni Lucchetta (Unipd, Italy)**

Modeling the replication of submicron-structured surfaces by micro injection moulding

10:10-10:35 **Nastasia Okulova (In-mold, Denmark)**

Roll-to-roll Extrusion Coating – expanding the boundaries of roll-to-roll replication in thermoplastic materials

10:35-11:00 **Sana Zaki (UCD, Ireland)**

Shaping of mould tools manufactured by UV LIGA and 3D printing

11:00-11:20 **Virtual Networking, coffee break (Online, Breakout room)**

Session 4: Microfluidics and functional surfaces II (11:20-12:55)

Chair: Per Magnus Kristiansen (INKA FHNW, Switzerland)

11:20-11:55 **Invited: Ruth Schmid (SINTEF, Norway)**

Nanomedicine today and tomorrow

11:55-12:30 **Invited: Eoin O'Cearbhaill (UCD, Ireland)**

3D printing of medical devices designed towards optimal soft tissue interaction

12:30-12:55 **Yuyang Zhou (Soochow University, China)**

Scalable mass manufacturing process for micro/nanostructure engineered plastic films with viral and microbial resistance

12:55-13:15 **Virtual Networking, coffee break (Online, Breakout room)**

13:15-14:00 Lunch break (individually)

Session 5: Advanced materials for micro/nano structuring (14:00-16:20)

Chair: Hengji Cong (UCD, Ireland)

14:00-14:35 **Invited: Wenxin Wang (UCD, Ireland)**

Biopolymer-based tough hydrogels for additive manufacturing

14:35-15:00 **Brian Vohnsen (UCD, Ireland)**

From wavefront sensors to retinal implants with polymers

15:00-15:25 **Shahana Bishnoi (DTU, Denmark)**

Fabrication and evaluation of microgel shapes as carriers for delivery of biomacromolecules

15:25-15:50 **Xiaoyu Wang (UCD, Ireland)**

A novel hydrophilic and antibacterial coating based on functionalized chitosan

15:50-16:15 **Seyed Masih Mousavizadeh (UCD, Ireland)**

Multifunctional strong-bonded 3-layered polymer coating on WE43 for drug-eluting stent applications

16:15-16:20 **Voting for the Best Presentation Awards for Early-Stage Researchers (Online)**

16:20-16:40 **Virtual Networking, coffee break (Online, Breakout room)**

16:40-16:50 **Announcement of Best Presentation Awards and closing by Nan Zhang**

16:50-17:30 **Networking, Beer/Refreshments**

Close of PRN 2022 and announcement of PRN 2023