

ITS THIN Workshop, 20-22/9/2023, Corfu, Greece



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ



UNIVERSITÄT
BIELEFELD

Faculty of Physics



ITS-THIN

Water separation revolutionized
by ultrathin carbon nanomembranes

ITS THIN Workshop, September 20-22, 2023, Corfu, Greece

Water separation revolutionized by ultrathin carbon nanomembranes (ITS-THIN)

Meeting place: Divani Corfu Palace Hotel, Kanoni area, Corfu, Greece

Invited Talks: 45 min & 15 min discussion / Presentations: 20 min & 10 min discussion

DAY 1: WEDNESDAY, 20 SEPTEMBER 2023

9:15 – 9:45 Registration
(University of Patras)

9:45 – 10:00 Welcome Address by ITS THIN Project Coordinator
Prof. Armin Götzhäuser, Bielefeld University, Germany

10:00 – 10:15 Welcome Address by ITS THIN Project Officer (videoconference)
Dr. Ioannis Fiamegkos, European Commission

10:15 – 11:15 **Keynote Presentation: Artificial water channels toward biomimetic membranes for desalination**
Prof. Mihail Barboiu, Institut Européen des Membranes, Montpellier, France

11:15 – 11:45 Coffee break

11:45 – 12:15 Fundamental advances in molecular transport and its applications to water and energy (videoconference)
Prof. Lydéric Bocquet, CNRS-ENS Paris, France

12:15 – 12:45 The CNM-composite membrane – the realization of a water filtration membrane with a free-standing 2D-material as active layer
Dr. Albert Schnieders, CNM Technologies GmbH, Germany

12:45 – 13:15 Nanomechanics of Carbon Nanomembranes
Marinos Dimitropoulos, University of Patras, Greece

13:15 – 14:45 Lunch

14:45 – 15:15 Healing CNM Defects with Interfacial Polymerization
Dr. Zhen Yao, Bielefeld University, Germany

15:15 – 15:45 Enzyme-Immobilized Electrospun Nanofiber Designs and Their Applications in Wastewater Treatment

Dr. Dan Zhao, Technical University of Denmark, Denmark

15:45 – 16:15 Performance evaluation of composite CNM membranes in low-pressure reverse osmosis and forward osmosis: results and challenges

Ana Ambrož, University of Maribor, Slovenia

16:15 – 16:45 Coffee break

16:45 – 17:15 Membrane contactors for product concentration and recovery of valuable compounds

Lex van Dijk, Colubris Cleantech, Netherlands

17:15 – 17:45 Synergizing Optical Fiber and Membrane Technologies for Enhanced Water Purification in a Photocatalytic Reactor

Dr. Basanti Ekka, Riga Technical University, Latvia

19:00 Welcome Reception, Divani Corfu Palace Hotel

DAY 2: THURSDAY, 21 SEPTEMBER 2023

9:30 – 10:30 **Keynote Presentation: Carbon nanotubes membranes as atomically smooth nanofluidic conduits with electrodynamic active pumping**

Prof. Bruce J. Hinds, Univ. of Washington, Seattle, USA

10:30 – 11:30 Review of research on Graphene by CNM lab at FORTH over the last 10 years

Prof. Costas Galiotis, University of Patras, Greece

11:30 – 12:00 Coffee break

12:00 – 12:30 Reduction of Biofouling on Membrane in Water Treatment through UV-Activated TiO₂ Coated Optical Fibers

Kristīne Bārtule, Riga Technical University, Latvia

12:30 – 13:00 Diffusion of radioactive tracers through Carbon Nanomembranes

En-neita Khayya, Bielefeld University, Germany

13:00 – 14:45 Lunch

14:45 – 16:00 Round Table: Current state of the art & Future trends

Coordinated by Bielefeld University, Germany

17:00 – 22:00 Excursion & dinner

DAY 3: FRIDAY, 22 SEPTEMBER 2023

9:15 – 9:45	Mechanics of the CNM-substrate Interface <i>Assoc. Prof. Konstantinos Dassios, University of Patras, Greece</i>
9:45 – 10:45	Keynote Presentation: The challenges of producing ultrapure water for water electrolyzers <i>Dipl.-Ing. Martin Meinardus, Grünbeck Water Treatment, Germany</i>
10:45 – 11:15	Catalytic nanofiber membrane reactors for water technologies <i>Assoc. Prof. Whenjing (Angela) Zhang and Feiyan Wu, Technical University of Denmark, Denmark</i>
11:15 – 11:45	Coffee break
11.45 – 12.15	Molecular sieving polymers: Mechanics and permeation properties <i>Jakob Kreie, Bielefeld University, Germany</i>
12.15 – 12.45	Upscaled production of Carbon Nanomembranes <i>Dr. Nikolaus Meyerbröker, CNM Technologies GmbH, Germany</i>
12.45 - 13.00	Closing Remarks by Project Coordinator
13:00 – 14:15	Light Lunch
14:30	Departure