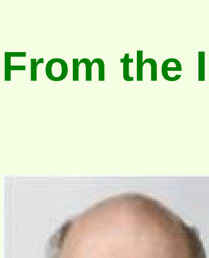
Newsletter 72, April 2021

International Association of Colloid and Interface Scientists

In this newsletter you will find the following topics:

From the IACIS President



Dear Colleagues,

In times of Corona and a postponement of our conference, online information becomes more important. Saskia Lindhoud has redesigned our newsletter with several new features. Please have a look! In addition to the information about the upcoming IACIS conference in Brisbane and the next in Edmonton, the newsletter contains information about joint activities and announcements.

A completely new feature is the showcase. We would like to invite PhD students to showcase recent publications in the IACIS Newsletter. The idea is to write a short text in which you explain about your PhD topic, your recent publication and why it is interesting for our community. Due to the lack of conference this is one way to advertise your recent findings. Let me also motivate you to provide news for the newsletter and suggestions to improve it!

Best,
Hans-Jürgen Butt

Back to the top

From your Newsletter Editor

Last year I was invited to give a keynote at the APS March meeting. It was my first keynote talk, so quite a big deal for me. When I was waiting for my taxi to bring me to the airport I received the message that the conference was cancelled. It was the start of a whole series of cancellations, we are all too familiar with. Fortunately I was invited again this year and I recently gave my online keynote lecture live, from my living room. It was nice and there were some opportunities to interact afterwards, but it is not the same as a conference with real people in 3D, with whom you can have a small chat. That is what I miss the most these days, the small talk. The informal talks you have in normal life. In my teaching schedule for this spring are tutorials on campus, I hope they can proceed. I am very much looking forward to meet a class room full of real people.

Stay safe, take care and make the best of it.

Your Newsletter Editor,
Saskia Lindhoud

Back to the top

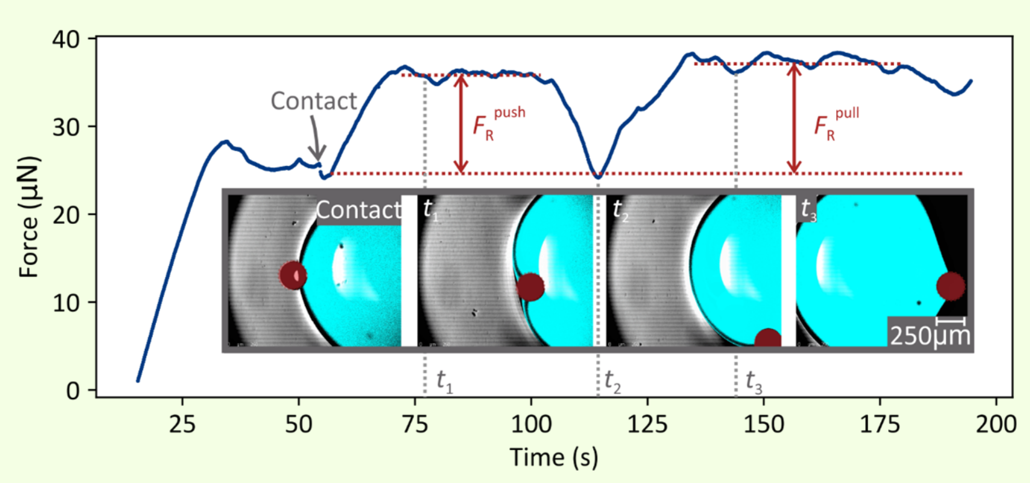
Showcase your publication

A side effect of the current pandemic is the lack of opportunities for young scientists to present their work at international conferences. Therefore we would like to invite PhD students to showcase recent publications in the IACIS Newsletter. The idea is to write a short text in which you explain about your PhD topic, your recent publication and why it is interesting for our community. Detailed guidelines can be found here.
The aim is to include 2 or 3 showcase texts in each Newsletter, preferably from three different continents. The next Newsletter will appear beginning of July, the deadline for submitting your showcase text is June 15. For inspiration, below an example of a showcase by Abhinav Naga, about a recent publication in Soft Matter.

Your Newsletter Editor, Saskia Lindhoud

How a water drop removes a particle from a hydrophobic surface

I am Abhinav Naga and I am a PhD student at the Max Planck Institute for Polymer Research in Germany. My supervisors are Prof. Doris Vollmer and Prof. Hans-Jürgen Butt. My PhD topic is capillary forces in wetting. One of the areas I focus on is the removal of particles from surfaces using drops. The contamination of surfaces by dirt particles is problematic in many applications. For example, it leads to a reduction in the efficiency of solar panels. Particle removal using drops has been widely investigated. However, all previous studies have used very large numbers of particles, making it difficult to understand and quantify the dynamics on a single-particle level.
In this article, we used an inverted laser scanning confocal microscope to image the collision between water drops and single particles on a flat hydrophobic surface at well-defined speeds (10-500 µm/s). Furthermore, we implemented a method to directly measure the force acting on the drop during the collision. By combining the force measurements and with analytical models, we proposed that successful particle removal occurs when the capillary force between the drop and the particle exceeds the friction force experienced by the particle. The insights provided by this study are particularly relevant in the design of self-cleaning surfaces.
The doi for the full article is 10.1039/D0SM01925A and a short blog summarising the key findings is available here.



Collision between a water drop (cyan) and a particle (red) on a hydrophobic surface at 50 µm/s.

Back to the top

IACIS2022 June 12-16, 2022 Brisbane, Australia

After an enforced period of dormancy, the local organising committee is getting back to work planning for the 17th IACIS Conference next year. As borders re-open and international travel once again becomes possible, we look forward to welcoming IACIS members old and new to Brisbane for a stimulating week of scientific exchange in the mild sub-tropical Queensland "winter." Abstract submissions and registration options will be opening later this year.
Due to lingering uncertainty about the course of the pandemic in various parts of the world and timing of international access to Australia, we are also putting contingency plans into place for online participation. Please keep checking our website, IACIS2022 , and follow us on social media @iacis2021 (still the old tag), for to stay updated on all aspects of planning for IACIS2022.
If you're coming all this way for IACIS2022, we hope you'll also take some time to visit other parts of Australia and have a proper holiday. We've all earned one over the last year or so.

For any queries please contact the IACIS 2022 Conference Managers via iacis2022@arinex.com.au.

We are also seeking sponsors and exhibitors for IACIS2022. If your organisation is interested or you have possible contacts, please pass the details onto us.

Ian Gentle and Greg Warr, for the IACIS Organising Committee.

Back to the top

IACIS2025 in Edmonton

Edmonton downtown from south of the North Saskatchewan River. Photo by Marzieh Kooshkbaghi.

Due to the current pandemic, the 18th International Association of Colloid and Interface Scientists (IACIS) Conference to be held jointly with the 99th American Chemical Society (ACS) Colloid and Surface Science Symposium in Edmonton, Alberta, Canada is now planned for June 22-27, 2025.
This 18th edition of IACIS will not only offer a comprehensive scientific program of interest to researchers from all disciplines within the broad colloid and interface science community worldwide, but also it will be located on the beautiful bank of the North Saskatchewan River in Edmonton, Canada. You can expect 17 hours of daylight and comfortable temperatures of 22 °C in June! Our host, the University of Alberta, has a very large and diverse research community in colloid and interface science with both fundamental and applied research. We look forward to seeing you all in Edmonton in 4 years time! There will be opportunities for sponsorship and exhibition as well. If you have any questions regarding sponsorship/exhibition, or organization of scientific matters, contact professors Janet A. W. Elliott, (janet.elliott@ualberta.ca) or Alidad Amirfazli, (alidad2@yorku.ca).

Back to the top

Hot Topic COVID-19

Initiated by the editors-in-Chief Marie Pierre Krafft and Nicholas Abbott, the journal Current Opinion in Colloid and Interface Science intends to publish a Special Topic issue dedicated to contributions of colloid and interface science to help overcome the Covid-19 pandemic. L. Liggieri and R. Miller are co-editing this issue. It is believed that the science community will appreciate this initiative to improve the understanding of the CORONA and any other future pandemics. Contributions will comprise aspects like interactions of the SARS-CoV-2 virus with interfaces in general and with membranes in the respiratory tract. Pulmonary surfactants play a major role in the functioning of the human lungs, and the existing knowledge on the interfacial principles in lungs has to be improved to better understand therapeutic and diagnostic tools. Also emulsions and aerosols as delivery vehicles for antivirals will be discussed. Problems of respiratory droplets and aerosols and their formation dynamics as disease transmitters are analysed in different ways, as well as the function of face masks as prevention against infections interpreted on the basis of optimum selections of design and material. Published articles can be found at: Hot Topic COVID-19. For a limited time, the contributions in this Hot Topic issue can be downloaded free of charge.

Reinhard Miller

Back to the top

Multiple positions for Early Stage Researchers in Marie Sklodowska-Curie ITN "Dynamics of dense nanosuspensions: a pathway to novel functional materials" (nanoPaInt)

Multiple positions for Early Stage Researchers are available in Marie Sklodowska-Curie Innovative Training Network "Dynamics of dense nanosuspensions: a pathway to novel functional materials" (nanoPaInt) coordinated by Technische Universität Darmstadt, Germany.
The aim of the nanoPaInt network is understanding, predictive modelling and application of the strongly interacting nanoparticle-laden systems out of equilibrium. The gained knowledge is used to design novel functional smart liquids and solid nanomaterials.
The training aim of nanoPaInt network is to support the career development of young researchers both in academic and non-academic sectors and to train a new generation of creative, mobile, entrepreneurial and innovative Early Stage Researchers (ESRs) through the independent and interdisciplinary research, participation at local and network-wide training activities as well as intersectorial and international secondments.

The following positions are available:

- ESR1: Colloidal interactions between nanoparticles and rheology of dense nanosuspensions, Loughborough University, UK
- ESR3: Adhesion of nanoparticles clusters on a solid substrate, Evonik Operations GmbH, AT Special Oxides, Germany
- ESR4: Modelling interfacial flows of dense nanosuspensions, Technion - Israel Institute of Technology, Haifa, Israel
- ESR5: Elongation and breakup of nanosuspension liquid bridges under fast stretching conditions, Technische Universität Darmstadt, Darmstadt, Germany
- ESR8: Fundamentals of rheology of capillary nanosuspensions. Sofia University St. Kliment Ohridski, Bulgaria
- ESR11: Modelling assembling of nanoparticles, Technische Universität Darmstadt, Darmstadt, Germany
- ESR13: Development of conductive inks and of conductive printed patterns on its basis, Instytut Katalizy I Fizykochemii Powierzchni im. J Habera PAN, Poland
- ESR14: Development of solid foams with tailored structured and functional properties, Consiglio Nazionale delle Ricerche, Genova, Italy

Detailed information about projects, employing organizations and supervisors can be found at the website nanoPaInt.
Eligibility criteria:

1. Applicants shall at the time of recruitment by the host organisation be in the first four years (full-time equivalent research experience) of their research careers and have not yet been awarded a doctoral degree. The four years start to count from the date when a researcher obtained the degree (e.g. Master's degree) which would formally entitle him/her to embark on a doctorate.
2. At the time of recruitment by the host organisation researchers shall not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 years immediately prior to the reference date.

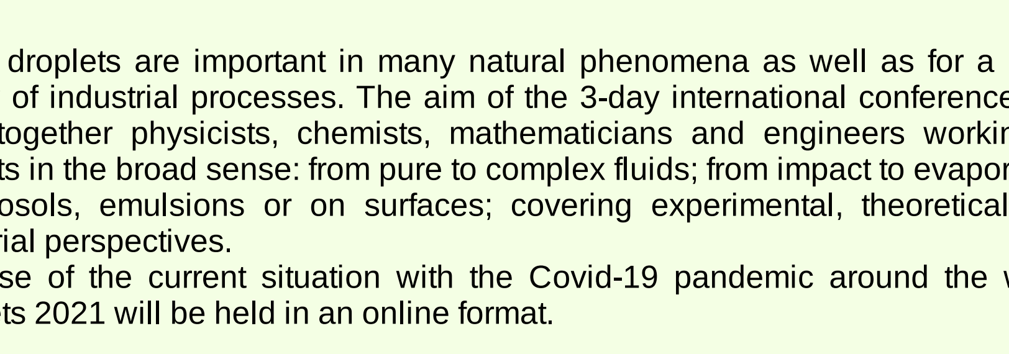
Please apply for the position through the nanoPaInt website (nanoPaInt) by May 15, 2021.

Network coordinator:
Apl. Prof. Tatiana Gambaryan-Roisman (gtatiana@ttd.tu-darmstadt.de)

Back to the top

Droplets 2021, 5th International Conference on Droplets

Online event organized by Technische Universität Darmstadt
16-18 August 2021



Liquid droplets are important in many natural phenomena as well as for a broad variety of industrial processes. The aim of the 3-day international conference is to bring together physicists, chemists, mathematicians and engineers working on droplets in the broad sense: from pure to complex fluids; from impact to evaporation; in aerosols, emulsions or on surfaces; covering experimental, theoretical, and industrial perspectives.
Because of the current situation with the Covid-19 pandemic around the world, Droplets 2021 will be held in an online format.

Conference topics:

- Wetting and spreading
- Collision phenomena
- Heat and mass transfer
- Phase change (evaporation, condensation, solidification, .)
- Chemical reactions
- Coalescence, break-up and atomization
- Aerosols, emulsions, sprays
- Droplet manipulation
- Droplets at extreme conditions
- Droplets of complex fluids
- Drying of dispersions
- Droplets on complex (textured, soluble, adaptive, lubricant-infused, .) substrates

Applications include (but are not restricted to):

- Energy and mobility
- Agriculture and food industry
- Micro- and nanofluidics
- Biological applications
- Printing and additive manufacturing

To learn more and to meet the invited speakers, please visit the website of the conference: DROPLETS2021

Back to the top

In Memoriam: Francoise Winnik

It was very sad news indeed to learn that Francoise Winnik, our good friend and colleague for many years, passed away on 13th February in Helsinki. She was widely known and appreciated around the world for her outstanding contributions to the field of colloid and interface science, both in academia and in industry.

Her main research focus, concerned the interaction of polymeric nanoparticles with biological cells and also the chemistry of amphiphilic polymers and their self-assembly in water. She played a pioneering role in the design and fundamental understanding of "responsive" nanomaterials, loosely named "stimuli-responsive systems", that are able to translate on the macroscopic scale minute motions at the molecular level generated by a ray of light or a small change of temperature.
Francoise was a great ambassador for colloid and interface science. She travelled widely and lectured around the world. She was perhaps best known to many in our field through her editorial role with the American Chemical Society journal Langmuir which began in 2001. In 2008 she was appointed the executive editor, then the editor-in chief from 2015 to 2019 of Langmuir. Francoise was an outstanding editor-in-chief. In addition to performing the usual tasks of the editor-in-chief, she was actively showing her presence world-wide during many international and domestic conferences each year throughout her term as the editor-in-chief. She explained to young colleagues and students the role of the journal and how to write a good manuscript and gave practical tips and answers to questions they had. Her advice was of great assistance to young people.
The complete obituary of Francoise Winnik written by Brian Vincent and Kazue Kurihara can be found here.

Text from the complete
obituary was adjusted by
your Newsletter Editor

Back to the top