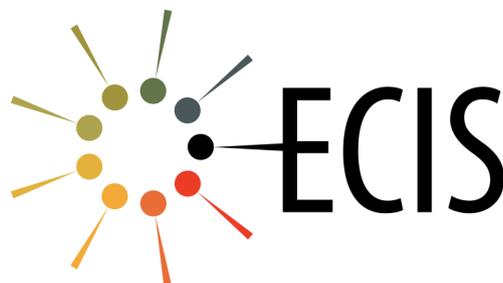


**EUROPEAN
COLLOID
AND INTERFACE
SOCIETY**

**Newsletter 3
August 2022**



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- ◆ **Recruitment add, Guangdong Technion-Israel Institute of Technology (GTIIT), CHINA**
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- ◆ **Final notes**

Message from the Editor

Dear colleagues, ECIS members

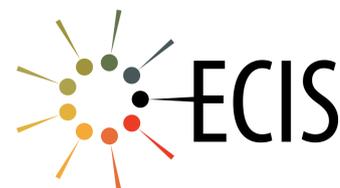
In the present issue of the ECIS newsletter we are very happy and honored to present this year's recipients of the two major awards that ECIS bestows every year. Prof. Hans-Jürgen Butt is the most deserving Overbeek medal winner, following a tradition of great scientists who have received the medal. And Dr Patrick Warren is the recipient of the Solvay award. The two prize winners are two very different but both very significant scientists, who have left their mark in Colloid and Interface Science. Prof. Butt, working in academia, has pioneered and developed AFM as a major tool to study colloidal interactions. And Dr. Warren, spending much of his research life to date in Unilever has demonstrated that applied research may be both fun and fundamentally important. We have chosen to present both our 2022 winners using the excellent nomination letters provided to the corresponding committees. Nomination letters are an important part of a nomination process and we strongly encourage our members, both to suggest excellent scientists for next year's awards and to spend time to provide great nomination letters.

**36th European Colloid & Interface
Society Conference**

4-9 September 2022 Chania, Crete, Greece

www.ecis2022.org

Message from the Editor



Next, we highlight again the yearly ECIS conference, which will be held in Chania, Greece, in the week 4-9 September 2022. ECIS very life centers around the conference. We hope to see all our members in Chania and in the General Assembly planned for Thursday, 8/9.

This newsletter contains a short report by our colleague Tamas Szabo, who organized this year's Student Colloid Conference in Szeged, Hungary. It was not an easy task, given the triple problem of the covid infection, the war in Ukraine and the current economic recession in Europe. We must be thankful to Tamas and his team for managing to produce a successful meeting against all odds. We hope that the Szeged example will provide inspiration for the next organizers.

Following recent discussions, the Board is planning to introduce in the next General Assembly an interesting new idea: The introduction of online ECIS discussions on fundamental aspects of Colloid and Interface Science. We introduce the concept in this newsletter, and we expect to have a concrete proposal for the General Assembly in September.

As a service to our members we host the advertisement of Guangdong Technion-Israel Institute of Technology (GTIIT), China, for tenure-track Faculty positions.

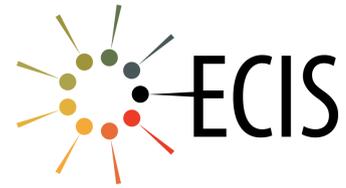
Following the decision to offer support to our younger members, we present several post-doctoral opportunities available in the University of Campinas, Brazil, brought to our attention by Prof. Watson Loh. There are many current aspects of colloid science in the program of Campinas, so we encourage our members to take a close look.

We finally hope that more of our senior members will advertise open Faculty, PhD and Postdoctoral positions in our newsletter and website. The former has had a good start and appears to be a promising new vehicle for communication of the Board with the members. And the website is just undergoing a major upgrade, which will make it much more attractive and useful.

E. Leontidis

(Editor of the ECIS newsletter)

**2022 Overbeek
medal winner:
Prof. Hans-Jürgen Butt**

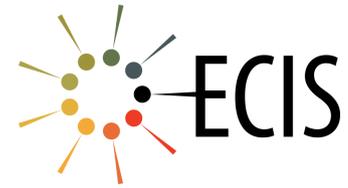


The Overbeek medal is the highest honor that ECIS can bestow on an individual for a lifetime of commitment and achievements in Colloid and Interface Science. The medal is awarded to exceptional scientists in the field. A look at the list of laureates of the last 15 years reveals that all have made their mark in the Science of Colloids and Interfaces, to the point that their names and work are points of reference for this community. This year's laureate is no exception. The Overbeek committee, consisting of a representative of the Overbeek foundation, the current and past President of ECIS and the three previous winners has selected **Prof. Hans-Jürgen Butt** as the Overbeek medalist for 2022. It is proper to include here the nomination letter submitted to the Overbeek committee, which accurately describes his achievements:



Hans-Jürgen Butt is an exceptional scientist. For more than three decades he publishes highly influential papers and shapes the forefront of colloid and interface science. He started his career in high energy physics, but quickly turned to biophysics and soft matter. As a young postdoc he made a significant step in the usage of atomic force microscopes by independently developing what is now known as the colloidal probe technique, published in 1991 [1]. The development opened a huge field of research. With his thermal noise method, published in 1995 [2], Hans-Jürgen Butt solved the important problem of cantilever calibration which was essential for establishing quantitative AFM force measurements. This calibration is nowadays implemented in almost all AFMs. In further developing the colloidal probe AFM, Hans-Jürgen Butt was also the first scientist to measure rolling friction of colloidal particles with this technique, published in 1999 [3]. The unique force resolution of AFM-based methods opened the way to determine the fundamental input parameters for a quantitative understanding of powder flow and similar processes. The interest of Hans-Jürgen Butt continuously broadened. In 2002 he published a paper on the measurement of the hydrodynamic boundary condition on solid surfaces [4]. Using again colloidal probe AFM he was able to measure the slip length of aqueous electrolyte solutions to be below

**2022 Overbeek
medal winner:
Prof. Hans-Jürgen Butt**



In recent years Hans-Jürgen Butt continued to work on wetting-related problems. Among the many influential papers, he published in these years, I want to highlight the work on the understanding of the motion on contact lines on superhydrophobic surfaces, published in 2013 [5]. Around this time Hans-Jürgen Butt intensely committed himself to wetting-related phenomena. This commitment resulted in two ERC Advanced Grants for Hans-Jürgen Butt: 2014 “Supro”, dealing with understanding and utilizing superhydrophobic surfaces and 2020 “DynaMo - Dynamic charging at moving contact lines”, dealing with charge separation at moving contact lines.

Besides all these personal scientific achievement, Hans-Jürgen Butt was and continues to be an excellent mentor and his institute is a fertile ground for the next generation of European Colloid and Interface Scientists. He wrote several text books and also serves the scientific community in various positions. He was the president of the German Colloid Society (2007 – 2011), served as the Treasurer of the ECIS (2010 – 2016) and is the president of the IACIS (since 2018).

References used in the nomination

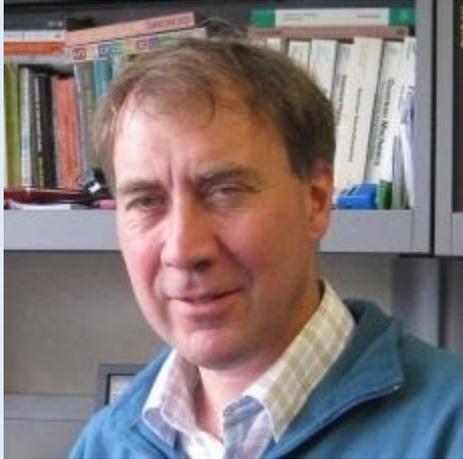
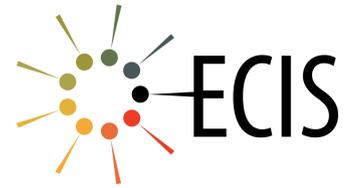
- [1] H.-J. Butt, *Biophys. J.*, 60, 1438 – 1444 (1991)
- [2] H.-J. Butt, M. Jaschke, *Nanotechnology*, 6, 1 – 7 (1995)
- [3] L. O. Heim, J. Blum, M. Preuss, H.-J. Butt, *Phys. Rev. Lett.*, 83, 3328 – 3331 (1999)
- [4] E. Bonaccorso, M. Kappl, H.-J. Butt, *Phys. Rev. Lett.*, 88, 76103 (2002)
- [5] P. Papadopoulos, L. Mammen, X. Deng, D. Vollmer, H. J. Butt, *Proc. Natl. Acad. Sci. USA*, 110, 3254 – 2358 (2013)

The ECIS Board congratulates Prof. Butt most enthusiastically for the medal award. It is after all such a lucky thing for Colloid Science that early in his career he abandoned High Energy Physics to become a prominent Colloid scientist!

2022

Solvay award winner:

Dr Patrick Warren



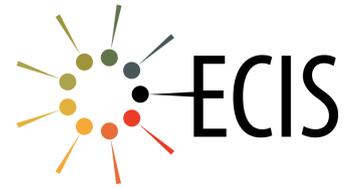
This year's recipient of the Solvay award is **Dr Patrick Warren**, who has spent much of his scientific life until now in Unilever and is currently in the STFC Hartree Centre, UK. Dr Warren exemplifies what Colloid and Interface Science is about, i.e. treating with the same scientific rigor, be it mathematical or experimental, problems that range from the most fundamental and complex to the most applied or mundane. And having fun while doing it! Please read the beautiful nomination text submitted to the committee.

Patrick Warren is a world-renowned soft matter theorist who, perhaps unusually, has spent nearly his entire career in industry, working at Unilever R&D continuously for three decades. During this period, Warren produced nearly 100 publications arising from the practical problems that he was solving for the company. Impressively, many of these also have high scientific impact (h-index = 39, > 10,000 citations). In other words, industrial problems that Warren works on often turn into scientific gold! We cannot, of course, know whether there is also industrial gold for his employer; but his longevity with Unilever suggests so. Such 'dual impact' is reminiscent of P-G. de Gennes, except that Warren contributed 'from the other side'. His uniqueness is exemplified by 5 publications that came out since 2017, which span four areas in which Warren is well known: dissipative particle dynamics (DPD), fluid mechanics, electrostatics and polymer physics. Warren is a world authority on DPD, a popular simulation method invented to bridge the gap between the atomistic and mesoscopic scales. Patrick first put the method onto a firm theoretical footing in 1995 with Español (a paper with > 2000 citations), and has deployed it with effectiveness ever since. Most recently, Warren and his collaborators have pioneered a 'molecular Lego' approach to parameterize surfactants for DPD simulations that is potentially applicable to a wide range of molecules. Paper [1] conclusively demonstrates that key properties such as the cmc can be quantitatively predicted for a class of common surfactants, the alkyl sulfates. This result is a tour de force: it renders high-throughput in silico predictive formulation of surfactant products within reach of everyday users, something that has been dreamed about for decades but never before realized: A scientific achievement of high order, because it could not have been accomplished without a deep understanding of the underlying statistical mechanics.

2022

Solvay award winner:

Dr Patrick Warren



Fluid dynamics is a second area in which Warren excels. Recently, he has deployed this expertise in a series of outstanding papers published with Howard Stone on the peculiarly colloidal-scale phenomenon of phoretic transport whereby particles move in response to gradients. Paper [2] clearly arose from an industrial context, and sheds light on a longstanding problem in laundry: how can dirt be cleansed from pores apparently too small to allow significant fluid flow? Warren's theoretical analysis – verified by Stone's experiments – provides a startling new insight: local gradients in surfactant concentration can drive diffusiophoretic motion of dirt particles that leads to their continual removal from fine pores. Moreover, if the surfactants are charged, then coupling to electrophoresis should allow this effect to be enhanced by the addition of salt. A time-honoured practice in laundry has at last received scientific justification.

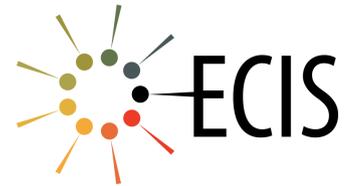
Warren's recent work on phoretic transport also covers the important case of colloid-polymer mixtures. He has had a longstanding association with this area, with his first big 'hit' being a 1992 paper on the equilibrium phase behaviour of mixtures of hard spheres and non-adsorbing ideal polymers (> 850 citations). In paper [3], he returns to such mixtures and considers their dynamics. In particular, he and his collaborator Richard Sear show that diffusiophoresis may drive stratification in such mixtures when they dry. This result clearly has important implications for a range of applications such as paints. Crucially for fundamental science, the work highlights the importance of considering the solvent explicitly. Studies using 'implicit solvent models' in which hydrodynamics is necessarily absent will miss or at least mistreat a range of phenomena.

The elucidation of charge effects in narrow-pore laundry demonstrates a third area in which Warren is a world authority: the electrostatics of soft matter. Warren has a longstanding reputation for repeatedly 'getting it right' in an area where many pitfalls await the unwary due to the long-ranged nature of Coulombic forces. Recently, Warren has not only used his electrostatics expertise to explain the effect of salt in laundry, but has also made an important contribution to measurement technique. Paper [4] demonstrates a novel method for accessing the zeta potential based on solute gradients that is cheap to set up and easy to use. The importance of this quantity across the board in colloid and interface science means that this work will have significant and long-term impact for almost everyone who does experiments in this area. Few theorists can aspire to direct such impact in the laboratory.

2022

Solvay award winner:

Dr Patrick Warren



A final area in which Warren is a world expert is polymer physics. Here, his deep understanding of the underlying statistical mechanics has enabled him not only to solve a number of important problems in ‘polymer physics proper’, but also to borrow polymer physics techniques to tackle novel problems concerning ensembles of objects that share certain features of polymers. His work on how hair-hair interaction controls the shape of ponytails, which won him the 2012 Ig Nobel Prize, is one good example. In a more recent Paper [5], Warren and his collaborators develop the thinking of the earlier ponytail paper further to explain an apparently trivial phenomenon: that woven fabric does not fall apart. The discovery that an ensemble of overlapping fibers with frictional contacts may undergo a generic percolation transition beyond which they can efficiently transmit tension will have very wide impact, e.g. in the understanding of paper. The creative use of linear programming techniques in arriving at this conclusion must be considered a tour de force in the theoretical analysis of soft matter problems.

In sum, the 5 papers associated with this nomination show that Patrick Warren is an outstanding theorist at the peak of his power tackling problems that are simultaneously of industrial and fundamental scientific interest. These papers will undoubtedly continue to set the direction for each of the fields represented for a considerable period of time to come.

[1] Micelle Formation in Alkyl Sulfate Surfactants Using Dissipative Particle Dynamics, R. L. Anderson, D. J. Bray, A. Del Regno, M. A. Seaton, A. S. Ferrante, and P. B. Warren, *J. Chem. Theory Comput.* 14, 2633–2643, 2018.

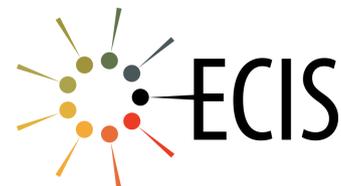
[2] Cleaning by Surfactant Gradients: Particulate Removal from Porous Materials and the Significance of Rinsing in Laundry Detergency, S. Shin, P. B. Warren, and H. A. Stone, *Phys. Rev. Applied* 9, art. no. 034012, 2018.

[3] Diffusiophoresis in nonadsorbing polymer solutions: The Asakura-Oosawa model and stratification in drying films, R. P. Sear and P. B. Warren, *Phys. Rev. E* 96, art. no. 062602, 2017.

[4] Low-Cost Zeta Potentiometry Using Solute Gradients, S. Shin, J. T. Ault, J. Feng, P. B. Warren and H. A. Stone, *Adv. Mater.* 29, art. no. 1701516, 2017.

[5] Why Clothes Don't Fall Apart: Tension Transmission in Staple Yarns, P. B. Warren, R. C. Ball, and R. E. Goldstein, *Phys. Rev. Lett.* 120, art, no, 158001, 2018.

36th ECIS conference.
Chania, Greece,
4-9/9/2022

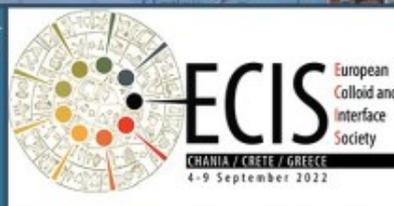


Dear friends and colleagues, members of ECIS, we hope to see all of you in the next ECIS conference in Chania, Crete (Greece). Our colleagues who organize the 2022 conference have put together an exciting program. See the detailed program in <https://ecis2022.org/scientific-program/>. See you all in Crete in September!

36th European Colloid & Interface Society Conference

4-9 September 2022 Chania, Crete, Greece

www.ecis2022.org



Plenary



Markus Antonietti
(Max Planck Institute, Germany)
Colloidal chemistry



John F. Brady
(Caltech, USA)
Theory and simulations of colloidal suspensions, rheology and active colloids



Gijsje Koenderink
(TU Delft, The Netherlands)
Material properties of cells and tissues



Christos Likos
(University of Vienna, Austria)
Theory of soft particles, phase behavior-interactions



Conference Sessions

- ◇ Polymers, Polyelectrolytes, Gels and Liquid Crystals
- ◇ Design and Synthesis of colloidal systems and nanoparticles
- ◇ Colloidal Dispersions, Colloidal Stability and Surface Forces
- ◇ Theory and Multi-scale Modeling of Colloids and Interfaces
- ◇ Self-Assembly and Supramolecular Structures
- ◇ Colloidal systems in External Fields
- ◇ Wetting Phenomena, Responsive Colloids and Surfaces
- ◇ Active and Bioinspired Colloidal systems
- ◇ Colloids at Interfaces, Membranes and Biointerfaces, Emulsions and Foams
- ◇ Colloids in Biomaterials and Biomedical applications
- ◇ Advanced colloid science for applications and products
- ◇ Composite Materials and Nanostructures

Special Sessions

◇ EU - China Symposium

Organizers: Zhenghe Xu (Southern University of Science and Technology, Shenzhen, China), Jingcheng Hao (Shandong University, China), Jianjun Wang (Chinese Academy of Sciences, Beijing, China), Hans-Jürgen Butt (Max-Planck-Institute for Polymer Research, Mainz, Germany)

◇ Satellite Session

"Surface interactions, tribology and the rate-dependent rheology of colloidal dispersions "

Organizers: Wilson Poon (The University of Edinburgh, UK), Emanuela del Gado (Georgetown University, USA), Jeff Morris (CUNY, USA), Nic Spencer (ETH Zurich, Switzerland) and Annie Colin (ESPCI Paris, France)

**Report from the 18th
Student Conference,
Szeged, Hungary 26-
30/6/2022**



The 18th

European

Student

Colloid Conference



26-30 June 2022

**Szeged
Hungary**

Plenary speakers:

Piotr Warszynski

Cracow PL

Dganit Danino

Haifa IL

Brian Vincent

Bristol UK

Julius Vancso

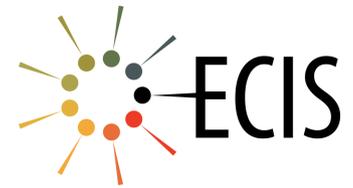
Twente NL

Biomedical aspects of colloids
Sufactants, micelles, self-assembly
Interfacial phenomena and adsorption
Polymer solutions, gels and phase behavior
Surface forces, liquid films, interactions in colloids
Colloidal dispersions, foams, emulsions, suspensions
Theoretical modeling and computer simulations of colloids



For more information:
<https://esconf2022.mke.org.hu/>
esconf2022@mke.org.hu

**Report from the 18th
Student Conference,
Szeged, Hungary 26-
30/6/2022**



The 18th European Student Colloid Conference (ESC-2022) took place in Szeged, Hungary, between 26th and 30th June. The event hosted 57 MSc and PhD students from all over the continent, who could present their research results and listen to the plenary talks of the 7-member Teacher Team. The Team, covering diverse fields of colloid and interface science, consisted of Brian Vincent, who has initiated this conference series, along with internationally acknowledged scientists from Switzerland, the Netherlands, Romania, Poland, Hungary and the United States. The students were awarded 4 oral and 1 poster presentation prizes. As a specialty of this event, the students were also involved in a written test contest and were also awarded several types of fun prizes.

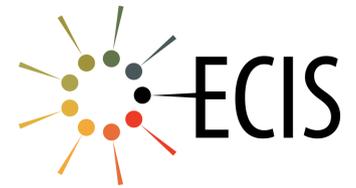


Hard lectures required strong concentration in Szeged

Some lectures were more fun than others!



**Report from the 18th
Student Conference,
Szeged, Hungary 26-
30/6/2022**



Several participants posing on the bridge and the whole team in front of the meeting venue.



Award winners showing off their diplomas.



A new idea: The ECIS online discussions on fundamentals

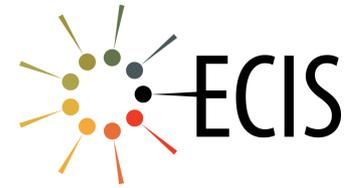


Have you been in conferences related to Colloid and Interface Science (or other natural sciences) and asked yourself what ever happened to the fundamentals of a great branch of science? It is the fate of many scientific conferences today that most of the presentations concern applications or focus on applied aspects of the research. Even though the research may be done at the highest level, it is hard - especially for “old-timers” who have known other times - to tolerate the marginalization of fundamental scientific aspects observed nowadays. The quality of science presented in conferences today (including our own ECIS conference) is mostly excellent, but how many new concepts appear these days? It is of course understandable: everybody is working most of the time in applications, because this is where the funding is to be found.

Recently, we have discussed in the ECIS Board that we, as a strong European scientific body, should do more for the basis of our science (the science established by Young, Laplace, Rayleigh, Thomson, Einstein, Smoluchowski, Langmuir, Perrin, Overbeek, Derjaguin and several other giants!). And we also agreed that any new move must be made outside the context of the yearly ECIS conference, for those who share our thoughts and are ready to undertake this new scientific challenge in Colloid and interface Science.

The Board will therefore propose to the next General Assembly the idea of a new **online ECIS discussion series** that will focus on fundamental aspects of our science, both theoretical and experimental. The format will be quite novel: A fundamental problem will be identified and prioritized, and two key speakers will be selected, if possible one theoretician and one experimentalist. Each of the speakers will select a scientist from the other side of the spectrum (an experimentalist will choose a theoretician and vice versa), to whom he/she will pose his/her fundamental scientific question and will ask for ideas about experiments or theoretical formulations that will help elucidate the issue discussed. Does this sound too complex, or too abstract, or too much like daydreaming? If yes, then we are in the right track! We hope to have a concrete proposal for the first such discussion in the next General Assembly, where we will even present our ideas for the major rapporteurs of the first discussion, which will take place this winter and will focus on **Interfacial Interactions**.

**Recruitment add,
Guangdong Technion
-Israel Institute of
Technology (GTIIT),
CHINA**



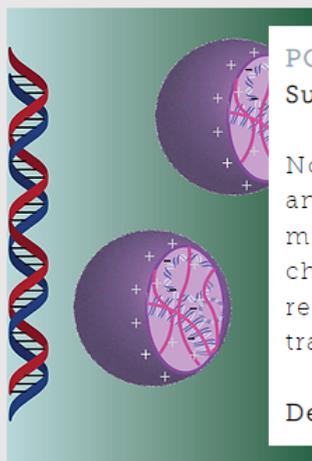
Position:	Appointment at the rank of Assistant, Associate or Full Professorship
Institute:	Guangdong Technion-Israel Institute of Technology (GTIIT), CHINA
Type:	Full Time
Area:	Colloid Science; Biotechnology Engineering; Food Engineering and Food Science; Physical Chemistry
Location:	Shantou, Guangdong Province, China
Submission Email:	gtiitrecruit@technion.ac.il
Description:	<p>The Technion - Israel Institute of Technology academically manages a new university established in Shantou City, Guangdong Province, China called the Guangdong - Technion Israel Institute of Technology (GTIIT) http://www.gtiit.edu.cn/en.</p> <p>GTIIT, following the philosophy of the Technion in Haifa, is fully committed to excellence in science and technology, both in research and education. The language of instruction at GTIIT is English.</p> <p>GTIIT has already launched undergraduate programs in: 1) Biotechnology & Food Engineering; 2) Chemical Engineering; 3) Materials Science & Engineering; 4) Mechanical Engineering; 5) Mathematics with Computer Sciences and 6) Math. Graduate programs are offered in all fields, in coordination with the Technion's Graduate School.</p> <p>GTIIT will bring together top-notch researchers in all areas of fundamental and applied sciences to promote cutting-edge multidisciplinary biomedical research.</p> <p>Tenure-track faculty positions at all ranks are now available for outstanding candidates, in the areas of Colloid Science; Biotechnology Engineering; Food Engineering and Food Science; Physical Chemistry</p> <p>Based on their academic and scientific record and qualifications, successful candidates will be appointed at the level of Assistant, Associate or Full Professor through one of the GTIIT Academic Programs, and also will be associated to a specific research center where they will conduct their research activities.</p> <p>Successful candidates will be offered world-competitive start-up packages, generous compensation, convenient housing and family care facilities in the beautiful and newly constructed campus.</p> <p>Please send a detailed CV, list of publications, a research plan and teaching statements to Dganit Danino dganitd@technion.ac.il</p>

Several post-doctoral vacancies in the University of Campinas, Brazil (Prof. Watson Loh)



Several postdoctoral positions are now open in the group of Prof Watson Loh in the University of Campinas, Brazil. Two characteristic examples of funded projects are copied below. For details on all available projects please visit the website of the group

<https://www.colloidsbr.com/opportunities>

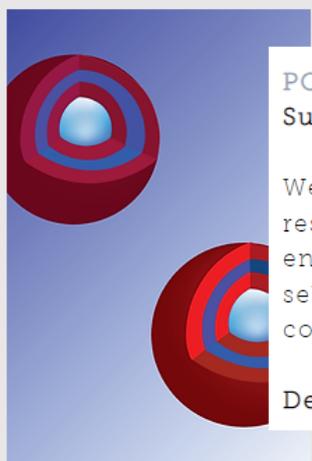


POSTDOC FELLOWSHIP: Electrostatic Complexes for Gene Therapy

Supervisors: W Loh (Unicamp) & FC Giacomelli (UFABC)

Novel polyelectrolytes and block copolymers will be designed to form DNA- and RNA-based polyelectrolyte complexes (PEC) and complex coacervates core micelles (C3Ms) and act as vectors in gene therapy. The architecture and chemical nature of the complexing agents will be tailored, and the biological responses (cytotoxicity, cellular uptake, intracellular trafficking, and gene transfection efficiency) of the complexes will be assessed.

Deadline: Aug 31, 22 | Start: Sep/22-Mar/23 | Salary: BRL 8,478.40/mo | [details](#)



POSTDOC FELOWSHIP: Polymersomes as Nanoreactors and Nanocarriers

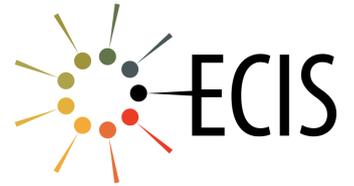
Supervisors: FC Giacomelli (UFABC) & MI Felisberti (Unicamp)

We will assemble polymer vesicles (polymersomes) using pH- and thermo-responsive amphiphilic block copolymers to serve as nanoreactors where enzymes are confined and biochemical reactions can take place. Importantly, selective permeability will be sought after, so substrates and products can come and go while the enzymes remain constrained.

Deadline: Aug 31, 22 | Start: Sep/22-Mar/23 | Salary: BRL 8,478.40/mo | [details](#)

Anyone visiting the site will notice the broad aspects of colloid science pursued in Campinas. We encourage our younger members to take a closer look at these positions and the exciting research they concern.

Final notes



- You receive this newsletter as a registered member of ECIS
- If you are not an ECIS member, please contact our Secretary, Prof. Pierandrea Lo Nostro (pierandrea.lonostro@unifi.it)
- If you have comments or suggestions and if you wish to contribute to future newsletters, please contact the newsletter editor, Prof. Minos Leontidis (psleon@ucy.ac.cy), or the ECIS webmaster, Prof. Dominik Horinek (dominik.horinek@ur.de)