

Memorial Volume - Editors

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Dganit Danino is a full professor at the Technion, Israel, heading the CryoEM Laboratory of Soft Matter. Her research is in the fields of soft-matter self-assembly, 1D ribbons and nanotubes, milk proteins, drug delivery, and the development, application and education of CryoEM techniques. She is the President of ECIS, and editor in COCIS and Colloids and Surfaces B.

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Debora Berti is full Professor at the University of Florence, Italy, where she leads the BioSoftMatter group. Her research topics include hybrid nano and micro particle/lipid assemblies for responsive drug delivery and interaction of nanostructured assemblies with model membranes. She is in the editorial board of Journal of Colloid and Interface Science and Advances in Colloids and Interface Science.

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Peter Kralchevsky is a full professor in the Department of Chemical & Pharmaceutical Engineering in Sofia University (Bulgaria) and Fellow of the Bulgarian Academy of Sciences. His research contributions are in the area of capillary and surface forces; colloidal dispersions and surfactants: adsorption, micellization, micelle growth, solubilization and rheology.

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Elena Mileva is Professor in Physical Chemistry at Institute of Physical Chemistry, Bulgarian Academy of Sciences. Her scientific interests are in the fields of: physical chemistry of interfaces and colloids; surface forces and thin liquid films; complex fluids; self-assembly of amphiphilic substances, self-organization in dynamic conditions; biomedical aspects of self-assembling phenomena; scientific background of flotation and separation processes.

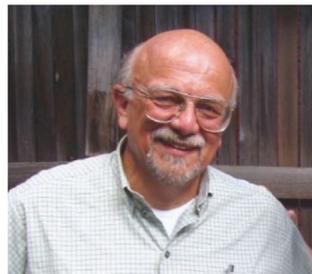
René Nome



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René Nome received BSc and MSc degrees from Universidade Federal de Santa Catarina/Brazil, and PhD Degree (2007) from The University of Chicago/USA, followed by postdoctoral positions at Argonne National Lab/USA and Unicamp/Brazil. René is a faculty member of the Institute of Chemistry at Unicamp since 2010. His interests include ultrafast and single-particle microspectroscopy applied to problems in condensed phase chemical dynamics.

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Professor Romsted is currently a member of the Chemistry and Chemical Biology Department of Rutgers, The State University of New Jersey after a postdoc with C. A. Bunton (UCSB), and a graduate period with E. H. Cordes (Indiana University, Ph.D.). He taught organic chemistry at a community college, and then finished his degree with Cordes. This research laid the basis for much of his future research. His thesis described the pseudophase ion exchange model for ion specific effects on chemical reactivity, including specific ion-exchange and models for surfactant and salt effects on reaction rates and equilibria in surfactant solutions. At RU his students created an arenediazonium ion, a chemical trapping probe that gives quantitative estimates of weakly basic nucleophiles molarities at aqueous interfaces, including interfacial water and anion molarities consistent with specific headgroup-counterion pairing/hydration model. A similar probe provides quantitative estimates of antioxidant partitioning in opaque emulsions.

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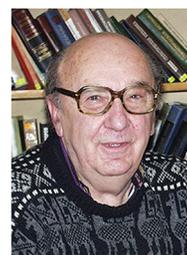
Dimo Platikanov



Kare Larsson



Dotchi Exerowa



Ivan B. Ivanov



Faruk Nome

This Special Issue of *Current Opinion in Colloids and Interface Science* gathers a collection of papers dedicated to the memory of seven eminent members of this community, who passed away in a short period, between October 2017 and September 2018.

Dotchi Exerowa, Kåre Larsson, Johannes (Hans) Lyklema, Ivan Ivanov, Helmuth Möhwald, Faruk Nome, and Dimo Platikanov have pioneered our discipline. Their professional and personal lives are deeply intertwined with the European and Latin American history of the second half of the last century. Their personalities, scientific achievements, and academic spirit have permeated the scene of colloid science: with them, our community lost some of those who have contributed to shape and define the state of the art of the area.

While writing this editorial, we have become aware of the countless personal and professional ties that connected their existences and careers.

Dotchi Exerowa and Dimo Platikanov, both from Bulgaria, have contributed fundamental insight in the field of surface forces, by investigating microscopic thin liquid films and setting the theoretical and experimental basis to expand our knowledge on the stability of foams and emulsions. Among the numerous achievements, we owe Dotchi the design of the microinterferometric setup for the formation and study of thin liquid films and Dimo the thorough understanding of the three-phase contact and wetting phenomena. Together they authored several seminal publications and chapters, like “Thin Films” in the 5th volume of “*Fundamentals of Interface and Colloid Science*”, the authoritative series edited by Hans Lyklema. Both Exerowa and Platikanov had been elected twice as Member of the Council of the International Association of Colloid and Interface Science (IACIS); Dimo was also IACIS President and lifelong member of its standing committee, and member of the standing committee of the European Chemistry at Interfaces Conferences (ECIC).

Ivan B. Ivanov, from Bulgaria, was an eminent colloid scientist working in the field of thermodynamics and hydrodynamics of thin liquid films and surface forces, where he contributed seminal works for our current understanding of foams and emulsions. One of his most influential achievements is the mechanistic insight on thin liquid film thinning and rupture together with the interpretation of the Bancroft rule on emulsion stability from a hydrodynamic perspective. He developed a detailed quantitative theory, which takes into account various physically significant effects related to the surfactant transport near the interfaces, such as the effects of surface diffusion; surface dilatational and shear elasticity and viscosity, as well as the surfactant exchange between the bulk and bubble/drop interfaces in the absence and presence of micelles. He has also essential

contributions to the quantitative description and understanding of the surface forces in liquid films that contain colloidal particles or protein globules, which are confined in the film or adsorbed on its surfaces. He initiated and organized the publication of a thick book on “*Thin Liquid Films*” edited by him, which summarized the accumulated knowledge in this area with chapters coauthored by twenty two leading scientists from eight countries.

Hans Lyklema, from the Netherlands, was among the founding fathers of IACIS; from 1962 and to his retirement he has led the Department of Physical and Colloid Chemistry at Wageningen University. He contributed fundamental work in the field of charged colloids and interfaces, including electric double layers, electrokinetics, dielectric spectroscopy, rheology and polyelectrolyte adsorption at interfaces. His prestigious series of volumes, “*Fundamentals of Interfacial and Colloid Science*”, undoubtedly a milestone in the area, with its comprehensive coverage of surface and colloid science, demonstrated the relevance and importance of our discipline for countless applications, from agriculture to environmental science, to biology.

Kåre Larsson, from Sweden, pioneered fundamental research concerning the phase behavior of lipids and structural aspects of complex fluids containing biopolymers. He applied this basic knowledge into several applicative fields, as food and pharmaceutical sciences, producing several technological breakthroughs in these areas. He initiated the field of bicontinuous lipid phases, whose phase behavior was described and understood introducing concepts from non-euclidean geometry. With a keen interest in both fundamental and applied aspects, he discovered the possibility to disperse bicontinuous lipid phases, initiating an entirely new field, whose potential is still being explored today. His co-authored book, “*The language of shape*” is still an inspiration for newcomers and experienced scientists. The European Colloid and Interface Society, ECIS, awarded him with the first Rhodia Prize of its history (2001).

Helmuth Möhwald, from Germany, was a pioneer in the field of Langmuir amphiphilic monolayers, demonstrating the occurrence of bidimensional phase transitions. His contributions in this field were also essential to develop advanced fluorescence and scattering techniques for the structural characterization of amphiphilic films at interfaces. He developed the Layer-by-Layer technique, where, thanks to the alternate and spontaneous adsorption of oppositely charged polyelectrolytes, it is possible to structure fluid interfaces thanks to highly-controlled organization of organic thin films. Helmuth co-founded the first Max Planck Institute in Eastern Germany, after the 1989 unification. During his ECIS presidency (in 2003) he merged the membership of

ECIS and ECIC and the annual meetings of these two societies. He was awarded with the Overbeek Medal in 2007 and with the IACIS Lifetime Achievement Award 2018.

Faruk Nome, from Brazil and born in Chile, worked at Universidade Federal de Santa Catarina in Florianópolis, Brazil, from 1977 until 2018. He and his group made fundamental contributions in many areas of colloid science and physical organic chemistry, including surfactants (micellar liquid chromatography, the pseudo-phase model and the chameleon effect), supramolecular aggregates and artificial enzymes, hydrolysis of amides, phosphate and acyl esters, and mechanistic studies in enzyme catalysis, among others. Faruk Nome was chairman of several CLAFQO conferences (Latin American Meeting on Physical Organic Chemistry) in the past 20 years.

From this concise and not exhaustive introduction, it is very clear that the breadth of scientific interests of these scientists encompasses the whole field of colloid and interface science. These innovators have crossed their scientific and personal paths on several occasions, and, most noticeably, they have structured the European groups working in this area in a lively, active and committed research community.

While the passing of elder colleagues is a sad, yet expected, event, the members of this community were

somehow shocked by the fast sequence of these losses. We realized that these events marked the end of an era, where all our “founding fathers” were still among us and we could benefit from their help, support, guidance, inspiration, criticism.

Each of us has personal memories about these colleagues, and we thought that the best way to express our gratitude to these giants, was to honor their contribution to our science in a single issue of this journal. Colleagues, friends, and pupils enthusiastically accepted to contribute papers with the purpose to embed their current achievements within the scientific frame drawn by these forerunners. Without any exaggerations, we can safely state that the impact their achievements have on the science we do today is huge. We owe them colloid and interface science as we know it. The challenge ahead is formidable: with fast-changing scientific scenarios, sometimes hype rather than solid work gains the central stage. We should then commit ourselves to follow their example, with a clear vision of the development of our discipline. We have been extremely lucky to have the privilege to meet them personally: it is now our turn to pass their scientific and human legacy to the next generation of colloid and interface scientists. This will be undoubtedly the best way to honor their memory.

November 2019