

## FREEDERICKSZ MEDALS FOR 2019 AWARDED TO FOREIGN CHEMIST AND RUSSIAN PHYSICIST

**MARIA HELENA GODINHO**



*Maria Helena Godinho graduated in Chemical Engineering (1983) at Instituto Superior Técnico, Technical University of Lisbon, Portugal, got MSc (1986) and PhD (1992) in Materials Science at New University of Lisbon, Portugal, having Habilitation (DSc. degree in 2003). She worked as fellow at the Laboratoire de Physique de la Matière Condensée at Nice University, France (1989–1992); Lecturer, Materials Science Dept., Faculty of Science and Technology, New University of Lisbon (1985–1992); Lecturer, Chemical Dept., University of Beira Interior, Portugal (1983–1985). She was invited overseas lecturer by the British Liquid Crystal Society (2016). Her current status is Assistant Professor of Faculty of Science and Technology, New University of Lisbon. Maria Helena is head of Soft and Biofunctional Materials Group at CENIMAT, what is a national scientific research center sponsored by the Ministry of Science, Technology and Higher Education, through the Foundation for Science and Technology.*

Maria Helena Godinho research is focused on several aspects of the molecular, mesoscopic (nano- and micro-scale) and macroscopic properties and behavior of soft materials and complex fluids, mainly liquid crystals (LCs) and cellulose-based systems (CBS). In addition she is interested in the modification, preparation and characterization of cellulose micro/nano rods. Considering the LCs as well as CBS and cellulose nano rods, she is much involved in the study of their self-assembling, defects and photonic properties. Helena Godinho is also concerned in the use of liquid crystalline CBS for building moisture driven cellulose micromotors and electro-optical devices. The development and optimization of liquid crystal based light shutter sensors, which can be used as smart windows or dynamic scattering layers for solar cells are also among her main interests.

Godinho is author of more than 200 publications and a lot of presentations in international conferences and schools, among them many invited talks. She has 2369 citation of her publications and her h-index is 25.

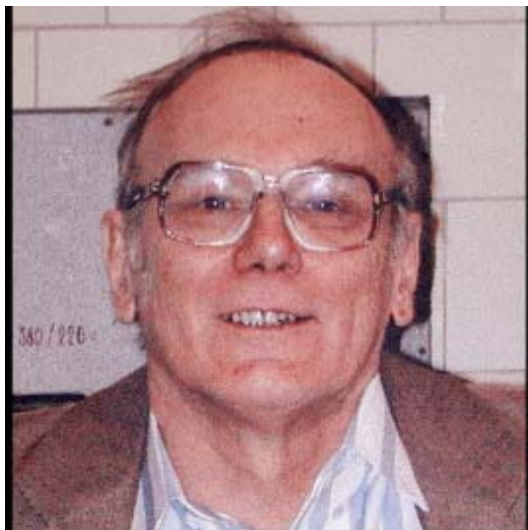
She made a referee work of scientific projects for National Science Foundation (NSF) (USA); Natural Sciences and Engineering Research Council of

Canada (NSERC); «Ministerio de Ciencia, Tecnología e Innovación Productiva: Agencia Nacional de Promoción Científica y Tecnológica» (Argentina); Reports Portuguese Science Foundation (FCT/MCTES), Portugal; Materials panel, «Agência de Inovação» (ADII), Portugal.

Maria Helena Godinho has extensive international scientific collaborations, for example with Kent State University (USA), University of San Paulo (Brazil) and so on. From 2016–2020 she was vice-president of International Liquid Crystal Society (ILCS)

Maria Helena was member of the Scientific Committee: 26-th International Liquid Crystal Conference, the International Advisory Board of 27-th International Liquid Crystal Conference, Chairperson: 6-th International Liquid Crystal Elastomer Conference, member of the Steering Committee: International Liquid Crystal Elastomer Conference, member of the International Advisory Board: 8th Ibero-American Workshop on Complex Fluids and their Applications. She is involved in European as well as in National projects and at the present she is responsible of PhD students as well as Post-doctoral Fellowships.

## VLADIMIR KARLOVICH DOLGANOV



*Vladimir Karlovich Dolganov was born in 1942. In 1968 he graduated at the Moscow Institute of Physics and Technology, Faculty of General and Applied Physics. Dolganov completed his thesis at the Institute of Solid State Physics of the Academy of Sciences of the USSR (ISSP RAS, Chernogolovka). All his further scientific activities are connected with this institute. During his work at the institute, he was in all possible scientific positions, ranging from junior researcher to head of laboratory and chief researcher.*

*In the beginning, V. Dolganov's scientific activity was far from liquid crystals, both in terms of topics and methods. His thesis and Ph.D. thesis were related to studies of Frenkel excitons in molecular crystals. At that time, this activity and the effects associated with it, for example, the Davydov splitting in exciton spectra, was considered very important. The main methods were optical and spectral measurements at low (helium) temperatures.*

Now these techniques are trivial, but at that time there was no optical cryostat ready for measurements at the institute. Nevertheless, measurements were made, and these were the first optical measurements at low (helium) temperatures at the ISSP. In 1973 he defended his Ph.D. thesis on «Exciton-phonon spectra in benzene crystals».

Two years after his defense he had to change the direction of his scientific activity. The choice fell on liquid crystals, which were not dealt with at the institute, and no one at the institute knew what they were. Both in the sense of physics and technique, research on liquid crystals conducted by *V. Dolganov* were varied. As for the techniques, probably few people have used such a wide range of them. These are luminescence spectra, absorption in a wide range of wavelengths, Raman scattering, Mandelstam – Brillouin scattering, calorimetry, structural studies using diffraction of neutron, X-ray radiation, coherent and incoherent inelastic neutron scattering, optical microscopy in its various versions, and others. In all these studies, *Dolganov* was directly involved, both in optical microscopy and in work in reactor halls with pulsed and continuous neutron sources in our country and abroad. In physics, he studied ordering and phase transitions in liquid crystals, the structure and stability of thin films and nanofilms, liquid crystal, photonic crystals, and self-assembling phenomena in partially

ordered media. In 1989 *V. Dolganov* defended his doctoral dissertation on «Structural-dynamic studies of mesophases in liquid-crystalline and solid states».

During his work at the ISSP RAS, *Dolganov* was the leader of a large number of students, some of them remained in science, some work in other areas in our country and abroad. Among them, one can note, in particular, the first student and PhD student E. Demikhov, who currently works as head of Solid State Physics Lab in FIAN. *V. Dolganov* published more than 100 scientific papers, including in the leading world and domestic journals (Physical Review, Physical Review Letters, Soft Matter, Liquid Crystals Reviews, Letters to ZhETF, UFN, ZhETF, and others). *Dolganov* participated in a lot of national and international conferences.

Researchers who follow the work of national scientists in our country are familiar with the work on liquid crystals carried out at the ISSP RAS. Secondly, they are dealt with by highly qualified people, with whom it is always interesting to communicate and cooperate.

According to *Dolganov*, liquid crystal study is very interesting due to the many theoretical and practical aspects of physics involved as well due to highly qualified people involved in this area, with whom it is always interesting to communicate and cooperate.

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