

Special Issue

Physical Chemistry of Aqueous Solutions and Glass Forming Systems

Message from the Guest Editors

The thermodynamical behaviors of aqueous solutions resemble those of glass-forming systems and can be studied in the same theoretical framework, for example, that of the mode coupling theory. In fact, the hydrogen bonding ability of water, which is progressively enhanced by lowering the temperature, allows the formation of local clusters and dynamical heterogeneities, as in glass-forming systems. This holds also for aqueous solutions, such as hydrated proteins or water/alcohol mixtures. Thus, the importance of establishing a rigorous picture for these systems is at the borderline among physics, chemistry, biology, technology, and life science. This Special Issue aims to cover recent advances in the experiments, theoretical modeling, and simulations within this area and toward nanotechnologies. Water, in fact, is the medium par excellence for the “development” of nanosystems, mainly polymers, with both hydrophobic and hydrophilic moieties showing competing properties.

Guest Editors

Dr. Carmelo Corsaro

MIFT Department, University of Messina, Viale F. Stagno D'Alcontres 31, 98166 Messina, Italy

Prof. Dr. Enza Fazio

MIFT Department, University of Messina, Viale F. Stagno D'Alcontres 31, 98166 Messina, Italy

Deadline for manuscript submissions

closed (31 July 2020)



Molecules

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Indexed in PubMed



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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. Thomas J. Schmidt

Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Corrensstrasse 48, D-48149 Münster, Germany

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