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Statistical Physics of Biopolymer Conformations

Guest Editor:

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Deadline for manuscript submissions:
closed (30 November 2021)

Message from the Guest Editor

Polymers are molecules comprised of many repeating subunits. The phase space of the problem is very rich thanks to the existence of many possible microstates for each subunit (monomer), leading to the statistical ensemble of polymer conformations. Torsional or dihedral angles which play the role of generalized coordinates, are hindered: the energy profile usually has several minima, referred to as isomeric states or isomers. The fact that most of the time monomers are found in one of few isomeric states, leads to the Rotational Isomeric State (RIS) approximation and discretization of coordinate values. It is suitable for synthetic and natural polymers, while it comes to the polypeptides and polynucleotides, the publications are often more directed towards the biologically inspired interpretation of obtained theoretical results.

This Special Issue is intended for papers reporting important advances in statistical mechanical models and approaches, describing order-disorder (helix-coil, protein denaturation, DNA melting, etc.) transitions in biopolymers from the viewpoint of physics. Approaches related to the account of solvent-related effects are especially welcome.

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Editor-in-Chief

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 5.0.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

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