27th International Conference on DNA Computing and Molecular Programming

DNA 27, September 13–16, 2021, Oxford, UK
(Virtual Conference)

Edited by

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Preface

This volume contains the papers presented at DNA 27: the 27th International Conference on DNA Computing and Molecular Programming. The conference was originally scheduled to be held at the University of Oxford, but due to the ongoing COVID-19 pandemic it was changed to an online format. The virtual conference was held during September 13–16, 2021, and was organized under the auspices of the International Society for Nanoscale Science, Computation, and Engineering (ISNSCE). The DNA conference series aims to draw together researchers from the fields of mathematics, computer science, physics, chemistry, biology, and nanotechnology to address the analysis, design, and synthesis of information-based molecular systems.

Papers and presentations were sought in all areas that relate to biomolecular computing, including, but not restricted to: algorithms and models for computation on biomolecular systems; computational processes in vitro and in vivo; molecular switches, gates, devices, and circuits; molecular folding and self-assembly of nanostructures; analysis and theoretical models of laboratory techniques; molecular motors and molecular robotics; information storage; studies of fault-tolerance and error correction; software tools for analysis, simulation,and design; synthetic biology and in vitro evolution; and applications in engineering, physics, chemistry, biology, and medicine.

Authors who wished to orally present their work were asked to select one of two submission tracks: Track A (full paper) or Track B (one-page abstract with supplementary document). Track B is primarily for authors submitting experimental or theoretical results who plan to submit to a journal rather than publish in the conference proceedings. We received 33 submissions for oral presentations: 17 submissions to Track A and 16 submissions to Track B. Each submission was reviewed by at least three reviewers, with most reviewed by four or more reviewers. The Program Committee accepted 11 papers for Track A (65%) and 11 papers for Track B (69%). We also received 29 submissions for Track C (poster), of which five were selected as additional oral presentations by the Program Committee. This volume contains the papers accepted for Track A.

We express our sincere appreciation to our invited speakers: Michael Brenner, Luca Cardelli, Chengde Mao, Petra Schwille, Friedrich Simmel, and Reidun Twarock. We thank all of the authors who contributed papers to these proceedings at a difficult time, and who presented papers and posters during the conference. Last, but by no means least, the editors are especially grateful to the members of the Program Committee and the additional invited reviewers for their hard work in reviewing the papers on a tight deadline and for providing insightful and constructive comments to the authors.

Matthew Lakin
Petr Šulc

September 2021

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