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Trends in Combinatorial Ring Theory and Applications

Guest Editors:

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Prof. Dr. Antonio GIAMBRUNO

Prof. Dr. Plamen E. KOSHLUKOV

Prof. Dr. Louis H. ROWEN



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ABSTRACTED

- Science Citation Index Expanded
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Trends in Combinatorial Ring Theory and Applications

Preface

The present volume contains the proceedings of the International Conference “*Trends in Combinatorial Ring Theory*” which was held partly online via zoom and partly at the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences in Sofia, Bulgaria, from September 20 to September 24, 2021. The purpose of the conference was to present the current state of art in the area of Ring Theory, its applications, and related fields. The conference and this volume are dedicated to the 70-th anniversary of Professor Vesselin Drensky. In his scientific career, Vesselin Drensky made major contributions to the fields of *Combinatorial and Computational Ring Theory*, *Algebras with Polynomial Identities*, *Commutative and Noncommutative Invariant Theory*, *Representation Theory of Groups*, and many other related fields in algebra. Some of his more important contributions include the development of the interplay of the representations of the symmetric and general linear groups in the context of PI algebras, counterexamples to the Specht problem for nonassociative algebras, a new proof of Nowicki’s conjecture, computation of the Hilbert series of the algebras of invariants of the special linear group, constructions of minimal bases of the polynomial identities of the full matrix algebra of order 2, and of the simple Lie algebra of dimension 3, description of the multilinear structure of the corresponding relatively free algebras, the proof of the strong Anick conjecture, the solution of a problem posed by Claudio Procesi concerning the identities of matrix algebras in positive characteristic, the construction of central polynomials of low degrees for matrix algebras, and many others.

Most of Professor Drensky’s collaborators, colleagues, and students took part in the conference. It was organized by Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, Institute of Mathematics, Statistics and Scientific Computing, State University of Campinas, Brazil, and Memorial University of Newfoundland, Canada. The main topics of the conference included Combinatorial and Computational Ring Theory, Group Theory, Theory of PI-algebras, Commutative and Noncommutative Invariant Theory, Lie and Jordan Algebras and Superalgebras, Matrix Algebras and many other topics. The meeting brought together mathematicians from 16 countries. The program consisted of 26 talks which were 40 min long and 37 talks which were 25 min long. Many of the participants in the conference contributed also to the present volume.

The organizers of the conference and the editors of the present volume are really very grateful to all participants in the conference and to all contributors to the present volume, to the anonymous referees for their careful and patient work, to the Editorial Staff and to the Editor-in-Chief, Professor Adnan Tercan, of the Turkish Journal of Mathematics, and to the Bulgarian National Science Fund for providing financial support for the conference.

Organizers: *Ivan CHIPCHAKOV*, *Peter DANCHEV*, *Elitza HRISTOVA* and *Plamen KOSHLUKOV*
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June 07, 2022, Sofia, Campinas, St. John’s