


Cite this: *RSC Adv.*, 2025, 15, 41912

RSC Advances Outstanding Student Paper Awards 2024

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DOI: 10.1039/d5ra90115d

rsc.li/rsc-advances

We are delighted to announce the winners for the *RSC Advances* Outstanding Student Paper Awards 2024. *RSC Advances* presents an annual award series to recognise the hard work of students within the chemistry community. All research articles published in *RSC Advances* in 2024 were considered. In order to be eligible for this award, the first author or co-first author must have been a student at the time of carrying out the research. From the support of corresponding authors, we received over 860 nominations highlighting the incredible talent and potential of emerging researchers in the field of chemistry. These awards continue to celebrate the exceptional work across a range of research fields and countries, reflecting the talent, diversity, and scientific curiosity that define the next generation of chemists.

The nominations were shortlisted based on several criteria, and the winning papers were then selected by our Editorial Board and Associate Editors (Table 1).

Below, we highlight the winner of each subject category, and the research paper that won them the award. Please join us in congratulating all our winners for their exceptional achievement. We look forward to witnessing their continued growth and impact as they embark on a promising career in the field of chemistry.

Analytical Chemistry

Zhaokang Zhang, Fuzhou University, China



Zhaokang is recognised for his outstanding contribution to the research presented in:

Portable glucose sensing analysis based on laser-induced graphene composite electrode (<https://doi.org/10.1039/D3RA06947H>)

Zhaokang Zhang has a Master's degree in materials and chemical engineering from Fuzhou University under the supervision of Professor Li Yanxia. His research focuses on enzyme electrochemical sensors, where he specializes in enhancing micro-sensing electrode performance through advanced materials engineering while capitalizing on enzymatic bioelectrocatalysis to develop next-generation flexible wearable biosensors.

Prior to his graduate studies, he earned a Bachelor's degree in materials science

from Hefei University of Technology in 2021. Building upon his expertise in polymer synthesis and nanomaterial fabrication, he is presently engaged in cutting-edge research dedicated to optimizing high-performance polyolefin production systems through catalytic process innovation and process intensification strategies.

Biological and Medicinal Chemistry

Morgane Baudoin, Université Grenoble Alpes, France



Morgane is recognised for her outstanding contribution to the research presented in:

To click or not to click for short pulse-labeling of the bacterial cell wall (<https://doi.org/10.1039/D4RA04945D>)

Morgane Baudoin obtained an engineering degree in chemistry in 2017 from



Table 1 Winners of the RSC Advances Outstanding Student Paper Awards 2024

Analytical Chemistry	Zhaokang Zhang, Fuzhou University, China
Biological and Medicinal Chemistry	Morgane Baudoin, Université Grenoble Alpes, France
Catalysis	Anjana Rajeev, National Institute of Technology Calicut, India
Computational & Theoretical Chemistry	Reza Ghanavati & Alma C. Escobosa, New Mexico State University, USA
Energy Chemistry	A M Mahmudul Hasan, University of Dhaka, Bangladesh
Environmental Chemistry	Melanie Maddin, Trinity College Dublin, Ireland
Inorganic Chemistry	T. Harri Jones, University of New Brunswick, Canada
Materials Chemistry	Vaishali Rathi, University of Petroleum and Energy Studies UPES, India
Nanoscience	Christina Wenck, Fraunhofer Institute for Microengineering and Microsystems IMM, Germany
Organic Chemistry	Mintu Munda, Indian Institute of Science Education and Research Bhopal, India
Physical Chemistry	Maria Bänkestad, Uppsala University, Sweden
Food Chemistry	Nafisa Sadaf, University of Arkansas, USA

the Graduate School of Chemical, Materials and Industrial Engineering (ENSIA-CET) in Toulouse, France. After six months of experience as an intern at the pharmaceutical company Servier, where she worked on the synthesis of polymer-drug conjugates (PDC), she pursued a PhD in chemical biology at the Department of Molecular Pharmacochimistry (DPM) in Grenoble under the supervision of Dr Yung-Sing Wong and graduated in 2023. Through the design and synthesis of novel organic compounds, she explored the metabolic incorporation of teichoic acid and peptidoglycan precursors in the cell wall of *Streptococcus pneumoniae* for labelling and therapeutic purposes. This work led to the publication of 4 research papers in peer-reviewed international journals and several oral communications at national and international conferences. She is currently working as a postdoctoral researcher at Uppsala University in Sweden with Dr Luke Odell.

Anjana is recognised for her outstanding contribution to the research presented in:

Selective synthesis of cyclic alcohols from cycloalkanes using nickel(II) complexes of tetradentate amidate ligands (<https://doi.org/10.1039/D4RA05222F>)

Anjana Rajeev K obtained her Master's degree in applied chemistry from the University of Calicut. She then pursued her PhD at the National Institute of Technology Calicut, India, under the supervision of Dr Muniyandi Sankaralingam, and was awarded her degree in April 2025. Her doctoral research focused on the synthesis and characterization of diverse molecular nickel(II) complexes and their catalytic applications in the oxidation of unactivated C–H bonds in substrates such as cycloalkanes and benzene derivatives. Her broader research interests include the generation, trapping, and reactivity studies of first-row transition metal–oxygen species.



Reza & Alma are recognised for their outstanding contribution to the research presented in:

An automated protocol to construct flexibility parameters for classical force-fields: applications to metal–organic frameworks (<https://doi.org/10.1039/D4RA01859A>)

Reza Ghanavati is a fifth-year PhD student in chemical and materials engineering at New Mexico State University, where he conducts research under the mentorship of Dr Thomas A. Manz. His doctoral work focuses on developing automated methodologies for polarizable, flexible forcefields to study gas separations in metal–organic frameworks (MOFs), targeting hydrogen purification in solar water-splitting applications. He earned his Bachelor's degree in Chemical Engineering from Amirkabir University of Technology and a Master's degree in chemical engineering from Sharif University of Technology, specializing in simulation and control. Beyond his academic research, Reza has applied machine-learning algorithms and developed interactive R Shiny applications to advance pharmacometrics modelling, enhancing predictions of pharmacokinetics and pharmacodynamics (PK/PD).

Catalysis

Anjana Rajeev, National Institute of Technology Calicut, India



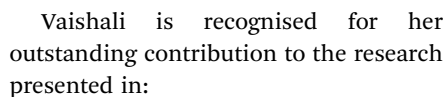
Computational & Theoretical Chemistry

Reza Ghanavati & Alma C. Escobosa, New Mexico State University, USA



During his PhD, Harri published multiple research papers in peer-reviewed journals, presented at several conferences (notably winning a poster prize at CANUK 2025), worked as a finalist judge for the Canada wide science fair, and delivered lectures in organic chemistry. Harri has accepted a post-doctoral research position with Prof. Catherine Aitchison at Linköping University, Sweden, in the laboratory of organic electronics.

**Vaishali Rathi, University of Petroleum
and Energy Studies UPES, India**



Dr Vaishali Rathi is an INSPIRE Fellowship awardee with a strong academic and research background in materials science and nanotechnology. She completed her BSc (CBZ) from HNB Garhwal University, Srinagar, in 2015,

She earned her PhD in materials science from the University of Petroleum and Energy Studies (UPES), Dehradun, in May 2025, under the supervision of Prof. Ashish Kumar and Prof. Ranjeet Kumar Brajpuriya. Her doctoral research focused on the design, synthesis, and multi-scale characterization of organic-inorganic hybrid composites for thermoelectric energy harvesting. She developed strategies to enhance the performance of graphene-based ternary composites with conducting polymers (PEDOT:PSS, PANI) and Bi_2Te_3 , achieving improvements in electrical conductivity, Seebeck coefficient, and power factor.

Nanoscience

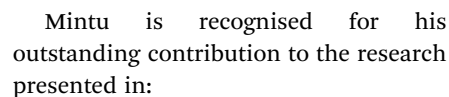


Design and characterisation of casein coated and drug loaded magnetic nanoparticles for theranostic applications
(<https://doi.org/10.1039/D4RA02626H>)

Mainz, Germany, as a doctoral student in 2023, in the Nanomedicine group led by Dr Regina Bleul. Her research focuses on synthesizing magnetic nanoparticles using a continuous-flow micromixer setup, online analytics for real-time characterization, and developing magnetic nanoparticle systems for theranostic applications.

D3NA00477E).

**Mintu Munda, Indian Institute of Science
Education and Research Bhopal, India**



Dr Mintu Munda, born in Kolkata, India, obtained his BSc (Hons.) in chemistry from Chakdaha College, affiliated to the University of Kalyani, in 2016. He then pursued an MSc in chemistry at the Indian Institute of Technology, Kharagpur. In 2018, Dr Munda joined the

Indian Institute of Science Education and Research (IISER) Bhopal for his doctoral studies under the guidance of Prof. Alakesh Bisai, with Prof. Aasheesh Srivastava as co-supervisor. His PhD research focused on the total syntheses of indolisesquiterpene alkaloids, including xiamycins A and C–F, advancing synthetic strategies for biologically important natural products.

Following his PhD, Mintu joined the Department of Medicinal Chemistry at the University of Kansas, United States, in 2024 as a postdoctoral researcher in the group of Prof. Shyam Sathyamoorthi. His research focused on the development of catalytic asymmetric methods for the synthesis of β -amino acids and their application to biologically active frameworks.

In the same year, Mintu was awarded the prestigious Marie Skłodowska-Curie Postdoctoral Fellowship. He subsequently moved to the United Kingdom to join Queen Mary University of London (QMUL) as an MSCA postdoctoral researcher in the group of Dr Stellios Arseniyadis, where his current work explores biohybrid *N*-heterocyclic carbene (NHC) catalysis at the interface of synthetic methodology and chemical biology.

Physical Chemistry

Maria Bänkestad, Uppsala University, Sweden



Maria is recognised for her outstanding contribution to the research presented in:

Carbohydrate NMR chemical shift prediction by GeqShift employing E(3) equivariant graph neural networks (<https://doi.org/10.1039/D4RA03428G>)

Maria Bänkestad defended her PhD in Machine Learning for Scientific Applications at Uppsala University in February 2025, with the dissertation *Structured models for scientific machine learning: From graphs to kernels*. Her doctoral work combined methods from graph neural networks and kernel approaches to tackle problems in the physical sciences, and her final paper was *Carbohydrate NMR chemical shift prediction by GeqShift employing E(3) equivariant graph neural networks*. Maria is currently a researcher at RISE Research Institutes of Sweden, where she applies machine learning to materials science and related fields.

Food Chemistry

Nafisa Sadaf, University of Arkansas, USA



Nafisa is recognised for her outstanding contribution to the research presented in:

Effect of a novel drying method based on supercritical carbon dioxide on the physicochemical properties of sorghum proteins (<https://doi.org/10.1039/D3RA07426A>)

Nafisa Sadaf is a PhD student in food science at Florida State University under the supervision of Dr Leqi Cui. Her

doctoral research focuses on enhancing the functionalities of plant proteins and evaluating their impact on the gut microbiome. She earned her MSc in food science at the University of Arkansas, working with Dr Ali Ubeyitogullari on improving sorghum protein properties using supercritical carbon dioxide (SC-CO₂). Her thesis compared the physicochemical characteristics of SC-CO₂-dried and freeze-dried sorghum proteins, providing novel insights into sustainable protein processing. Nafisa has published three peer-reviewed research papers and one conference proceeding. She was recognized as a finalist in the Protein and Co-Products Division Poster Competition at the AOCS Annual Meeting and Expo (2024). She completed her BSc in food engineering at Shahjalal University of Science and Technology, Bangladesh, where her undergraduate thesis explored edible coating development using ascorbic acid and aloe vera gel to extend fruit shelf life. Across her academic journey, Nafisa has consistently demonstrated a commitment to rigorous, application-oriented food science that advances sustainable protein systems and supports future innovations in nutrition and health.

Please join us in congratulating all our winners for their exceptional achievement. We extend our sincere gratitude to all the authors for their contributions, as well as to the editors and referees for their collaboration, which has resulted in this high-quality series.

We will continue to recognise outstanding student contributions and plan to give out these awards each year. If you published a research article in 2025, or go on to publish with the journal in the future, and would like to recognise a significant contribution made by a student, we invite them to join us in future editions of this series. Please email advances-rsc@rsc.org for more information.

Dr Laura Fisher, Executive Editor, *RSC Advances*

