

**Preface of the Conference Proceeding of the 9<sup>th</sup> ISCPMS 2023  
in conjunction with  
AUA Academic Conference 2023**

Welcome to the proceedings of the 9th International Symposium on Current Progress in Mathematics and Sciences 2023 (The 9th ISCPMS 2023), held in conjunction with the AUA Academic Conference 2023. Hosted by the Faculty of Mathematics and Natural Sciences at Universitas Indonesia, in collaboration with the Faculty of Science at Universiti Malaya, this symposium marks a significant milestone in the continuous journey of exploration and discovery that began with the inception of ISCPMS in 2015.

The 9th ISCPMS 2023, taking place on August 29-30, 2023, at The Patra Bali Resorts and Villas, Bali, converges under the overarching theme - "Application of Artificial Intelligences and Data Sciences in Modern Science for a Better Life." It is a testament to the dynamic intersection of mathematics and physics, both in theory and application.

Over the years, ISCPMS has established itself as a premier platform for scholars, researchers, and practitioners to engage in fruitful discussions, exchange innovative ideas, and foster interdisciplinary collaborations. The journey from theoretical exploration to practical applications is a key focus, reflecting the evolving landscape of modern science.

This year, our distinguished keynote speakers, hailing from institutions around the globe, embody the spirit of international collaboration and excellence. We are honored to have Ivandini Tribidasari Anggraningrum (Universitas Indonesia, Indonesia), Zulqarnain Mohamed (Universiti Malaya, Malaysia), Makoto Nakanishi (The University of Tokyo, Japan), and Sebastian Cioaba (University of Delaware, USA) grace us with their insights and expertise. Furthermore, six invited speakers from Universiti Malaya, Chulalongkorn University, United Arab Emirates University, and Universitas Indonesia also join us in the 9<sup>th</sup> ISCPMS 2023.

As we navigate through the diverse array of topics presented in these proceedings, spanning mathematics, physics, and chemistry, let us not only celebrate the achievements but also anticipate the future breakthroughs that will shape the landscape of scientific progress.

Our sincere gratitude goes to the organizing committee, the authors, the reviewers, and everyone involved in making this symposium a reality. We hope that this collection of proceedings serves as a valuable resource, inspiring future research and contributing to the continuous advancement of science for the betterment of our global community.

Thank you for being part of the 9th ISCPMS 2023, and we look forward to the exciting journey that lies ahead in the realm of mathematics and sciences.

Depok, 2 January 2023

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# 9<sup>th</sup> ISCPMS 2023

The 9<sup>th</sup> International Symposium on Current Progress in Mathematics and Sciences  
(ISCPMS 2023)  
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