



# 2024 International Conference on “Physics and Mechanics of New Materials and Their Applications” (PHENMA 2024)



**Indore (India), November 6 – 11, 2024**

<http://phenma2024.sfedu.ru/>

# First Announcement

Sponsored by



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Russian Science Foundation



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## Scope of the Conference

The scope of the conference includes the following topics:

**Materials:** Ferro-Piezoelectrics, Semiconductors, Superconductors, Environmental Materials, Composite, Ceramics, Thin Films, Nanomaterials, Advanced Materials for Additive Manufacturing, Metal Engineering Materials, Functionally Graded Materials etc.

**Synthesis & Processing:** Powder Processing, Processing Technologies, Piezoelectric Technologies, MEMS-Processing, etc.

**Characterization and Research Methods:** Material Design, Microstructure Properties, Chemical Properties, Physical Properties, Mechanical Properties, Strength Properties, Finite-Element Modeling, Mathematical Modeling, Physical Modeling, Physical Experiment, etc.

**Applications:** MEMS, Hetero-structures, Piezotransducers, Energy Harvesting, Superconductive Devices, Light-Emitting Diodes, Multimedia Communication, Fiber Reinforced Composites, Construction Health Monitoring, Lubricant and Tribology, etc.

**Underwater Technologies:** Underwater Communication, Marine Engineering, Power System, Ocean Energy, etc.

**Biomedical Engineering:** Medical Materials, Nanotechnology in Medicine, Medical Instrumentation, Physical Methods in Medicine, Waste, Biological Product Processing, etc.

**Industry and Management:** CAD/CAM/CAE Application, Industrial Instruments, EDM, Materials Machining, Machines, Design and Building Constructions, etc.

The conference will consist of keynote, oral and poster sessions.

## Objectives of the Conference

This conference continues topics of the

Taiwanese-Russian Symposium “Physics and Mechanics of New Materials and Their Applications” (June 4-6, 2012, Rostov-on-Don, Russia), selected reports of which have been published as edited book “Physics and Mechanics of New Materials and Their Applications” by Nova Science Publishers, New York;

2013 International Symposium on “Physics and Mechanics of New Materials and Underwater Applications” (June 5-8, 2013, Kaohsiung, Taiwan), selected reports of which have been published as Springer Proceedings “Advanced Materials – Physics, Mechanics and Applications” by Springer, Heidelberg, New York, Dordrecht, London;

2014 International Symposium on “Physics and Mechanics of New Materials and Underwater Applications” (March 27-29, 2014, Khon Kaen, Thailand), selected reports of which have been published as edited book “Advanced Materials - Studies and Applications” by Nova Science Publishers, New York;

2015 International Conference on “Physics and Mechanics of New Materials and Their Applications” (May 19-22, 2015, Azov, Russia), selected reports of which have been published as Springer Proceedings “Advanced Materials – Manufacture, Physics, Mechanics and Applications” by Springer, Heidelberg, New York, Dordrecht, London and as Proceedings of the 2015 International Conference on “Physics, Mechanics of New Materials and Their Applications”, devoted to 100-th Anniversary of the Southern Federal University by Nova Science Publishers, New York;

2016 International Conference on “Physics and Mechanics of New Materials and Their Applications” (July 19-22, 2016, Surabaya, Indonesia), selected reports of which have been published as Springer Proceedings “Advanced Materials – Techniques, Physics, Mechanics and Applications” by Springer Nature, Cham, Switzerland and as Proceedings of the 2016 International Conference on “Physics, Mechanics of New Materials and Their Applications” by Nova Science Publishers, New York;

2017 International Conference on “Physics and Mechanics of New Materials and Their Applications” (October 14-16, 2017, Jabalpur, India), selected reports of which have been published as Springer Proceedings “Advanced Materials - Proceedings of the International Conference on “Physics and Mechanics of New Materials and Their Applications”, PHENMA 2017” by Springer Nature, Cham, Switzerland; as Proceedings of the 2017 International Conference on “Physics, Mechanics of New Materials and Their Applications” by Nova Science Publishers, New York and in two special issues of International journal "Material Physics and Mechanics" (Saint-Petersburg, Russia);

2018 International Conference on “Physics and Mechanics of New Materials and Their Applications” (August 9-11, 2018, Busan, South Korea), selected reports of which have been published as Springer Proceedings “Advanced Materials - Proceedings of the International Conference on “Physics and Mechanics of New Materials and Their Applications”, PHENMA 2018” by Springer Nature, Cham, Switzerland; as Proceedings of the 2018 International Conference on “Physics, Mechanics of New Materials and Their Applications” by Nova Science Publishers, New York; in the International journal "Material Physics and Mechanics" (Saint-Petersburg, Russia) and in two special issues of

International journals: "Applied Sciences" (MDPI), and "Modern Physics Letters B" (World Scientific Publishing);

2019 International Conference on "Physics and Mechanics of New Materials and Their Applications" (November 7-10, 2019, Hanoi, Vietnam), selected reports of which have been published as Springer Proceedings "Advanced Materials - Proceedings of the International Conference on "Physics and Mechanics of New Materials and Their Applications", PHENMA 2019" by Springer Nature, Cham, Switzerland; as Proceedings of the 2019 International Conference on "Physics, Mechanics of New Materials and Their Applications" by Nova Science Publishers, New York; in the International journal "Material Physics and Mechanics" (Saint-Petersburg, Russia) and in three special issues of International journals: "Applied Sciences" (MDPI), "Journal of Advanced Dielectrics" (World Scientific Publishing) and "Modern Physics Letters B" (World Scientific Publishing);

2020 International Conference on "Physics and Mechanics of New Materials and Their Applications" (March 26-29, 2021, Kitakyushu, Japan), selected reports of which have been published as Springer Proceedings in Materials "Physics and Mechanics of New Materials and Their Applications - Proceedings of the International Conference PHENMA 2020" by Springer Nature, Cham, Switzerland; as Proceedings of the 2020 International Conference on "Physics, Mechanics of New Materials and Their Applications" by Nova Science Publishers, New York; in the International journal "Mechanics of Composite Materials" (Springer, USA) and in three special issues of International journals: "Applied Sciences" (MDPI), "Journal of Advanced Dielectrics" (World Scientific Publishing) and "Modern Physics Letters B" (World Scientific Publishing).

10th Anniversary International Conference on "Physics and Mechanics of New Materials and Their Applications" (May 23-27, 2022, Divnomorsk, Russia), selected reports of which have been published as Springer Proceedings in Materials "Physics and Mechanics of New Materials and Their Applications - Proceedings of the International Conference PHENMA 2021 – 2022", by Springer Nature, Cham, Switzerland; as Physics, Mechanics of New Materials and Their Applications 2021 – 2022 by Nova Science Publishers, New York; in the International journals "Mechanics of Composite Materials" (Springer, USA) and "Journal of Advanced Dielectrics" (World Scientific Publishing) and in special issue of International journal "Applied Sciences" (MDPI).

2023 International Conference on "Physics and Mechanics of New Materials and Their Applications, PHENMA 2023" (October 3-8, 2023, Surabaya, Indonesia), selected reports of which will be published as Springer Proceedings in Materials "Physics and Mechanics of New Materials and Their Applications - Proceedings of the International Conference PHENMA 2023", by Springer Nature, Cham, Switzerland; as Physics, Mechanics of New Materials and Their Applications 2023 by Nova Science Publishers, New York; in the International journals "Mechanics of Composite Materials" (Springer, USA) and "Journal of Advanced Dielectrics" (World Scientific Publishing)

Main goal of the conference is to attract researchers from countries of Asia and Asian-Pacific Ocean Region, other countries to fulfillment of joint investigations and scientific collaboration.

## Abstracts

The abstracts up to one page in WORD (\*.docx) should be submitted by e-mail before **May 1, 2024** to: [parinov\\_ia@mail.ru](mailto:parinov_ia@mail.ru) and duplicated to [iparinov@sfedu.ru](mailto:iparinov@sfedu.ru). Authors will be notified by **June 1, 2024** whether the contribution has been accepted. The format to be used is a text within one standard A4 page. A 12 point font should be used. The title appears centered. It is separated by an empty line from the author's name, also centered. The name of the author who presents the contribution should be underlined. An empty line separates the name from the author's affiliations and e-mail of corresponding author, also centered. The abstracts can include figures, tables and references. The Abstracts book will be published before conference.

## Proceedings

The proceedings will be published as two edited books: *Springer Proceedings in Materials "Physics and Mechanics of New Materials and Their Applications - Proceedings of the International Conference PHENMA 2024"* by Springer Nature, Cham, Switzerland and *Physics, Mechanics of New Materials and Their Applications 2024* by Nova Science Publishers, New York and also in the international journals (SCI journals): *"Applied Sciences"* (MDPI), *"Journal of Advanced Dielectrics"* (World Scientific Publishing), and *"Mechanics of Composite Materials"* (Springer, USA). All journal papers will be published after peer review process (additional publishing fee will be needed for first journal). The deadline for contributions to the proceedings (SPRINGER, NOVA) submitted electronically by the authors is **November 10, 2024**. All full-text book publications should be submitted by e-mail to: [parinov\\_ia@mail.ru](mailto:parinov_ia@mail.ru) and duplicated to [iparinov@sfedu.ru](mailto:iparinov@sfedu.ru). It is assumed the length of the Springer manuscripts will be up to **12 pages** and Nova manuscripts will be up to **6 pages**. Instructions for preparing the manuscripts will be sent to all presenting authors after the abstracts have been accepted.

The official language of the conference will be **English**.

## Local and General Secretariat of the Conference

### Local Secretariat of the Conference

**Prof. Dr. Nagendra Sohani**

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Institute of Engineering & Technology,  
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## General Secretariat of the Conference

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Web-Site: <http://phenma2024.sfedu.ru/>

Facebook: <https://www.facebook.com/PHENMA2024/>

## Registration and Fees

Preliminary registration will be available by e-mail. Corresponding Registration Form will be presented in the information distributions of PHENMA-2024 Secretariat and should be submitted with corresponding abstracts by e-mail to [parinov\\_ia@mail.ru](mailto:parinov_ia@mail.ru) up to **May 1, 2024**. All **full participants** must pay the Registration Fee up to **November 1, 2024**, which will be **US\$400** and include social and technical programs, coffee-break, book of the Conference Abstracts and electronic version of the Conference Proceedings. The electronic versions of the Conference Proceedings published after conference will be sent by e-mail to the corresponding authors by the Conference Secretariat.

For **young scientists (up to 35 years old, ID needed)** special registration fee is stated which will be **US\$100**. This registration fee includes electronic version of the Conference Proceedings, too.

Indian Participants fee will be **Rs 5000**.

Special payment will be made for Conference Banquet.

## City of Indore

Indore is in the western region of Madhya Pradesh (approx. 76° E, 23° N), on the southern edge of the Malwa plateau, on the Saraswati and Kanha rivers, which are tributaries of the Kshipra River. Indore has an average elevation of 553 meter above mean sea level and is the cleanest city of India since last 7 years. The languages of Indore are a hallmark of the cosmopolitan culture and the demography of the Madhya Pradesh city that is reputed to be a forerunner of academics and at the focal point of business and commerce. Hindi is the principal language that is spoken by most of the populace of Indore. Rajwada at Indore is the only 7-storey entrance of a Palace. A 40 feet high Idol at Bada Ganapati is the largest Ganesh Idol in the world. The gates of Lalbagh Palace, Indore, are replica of the gates of Buckingham Palace, London. They were casted in England and then shipped to Indore.

Indore is home to some world-renowned research and academic institutions. Raja Ramanna Center for Advanced Technology (RRCAT), University Grant Commission-Department of Atomic Energy (UGC-DAE) Consortium, Indian Institute of Technology, Indore and Indian Institute of Management, Indore have enabled Indore to figure prominently on the research map of India.



In arts and culture, Indore has a history of providing legends in different walks of life. It has one of the five government music and dance colleges of the central Indian state of Madhya Pradesh. It is the birthplace of cultural ambassadors of the likes of Swar Kokila Late Sushri Lata Mangeshkar, famous comedian Johnny Walker and popular film star Salman Khan. Great Singer and multifarious artist Late Shri Kishore Kumar was educated in Indore. In sports, legendary personalities are associated with the proud city. Highest wicket taker in single test Shri Narendra Hirwani, Captain C.K. Naidu, and Shri Mustaq Ali, have all learnt the tricks of their trade from their birthplace Indore. World renowned art legends and famous painters Late Shri M. F. Hussain and Shri N. S. Bendre acquired the skills of the art with Late Shri Vishnu Deolalikar.

### Registration Desk

The Abstract book with Conference Schedule, tickets for social events and other conference materials will be available at the Conference Registration Desk.

Additional information will be available at the Conference web-site <http://phenma2024.sfedu.ru/> and in Facebook <https://www.facebook.com/PHENMA2024>.

### Location Map of Indore



### Method of Payment

Payment to be made in USD in direct transfer to:

**Account Name:** Registrar Self Finance, Devi Ahilya Vishwavidyalaya, Indore

**Bank Name:** State Bank of India

**Bank Address:** IET Branch, Khandwa Road, Indore

**SWIFT:** Will be specified later

**ACCOUNT:** 32113656219

**IFSC:** SBIN 0030470

**Fax:** Will be specified later

**Phone:** Will be specified later

**Please note that all transfer charges must be paid by the sender.**

### **Hotel**

Information on hotel reservation will be available at the Conference site.

<b>Deadline for Abstracts:</b>	<b>May 1, 2024</b>
<b>Notification of Acceptance:</b>	<b>June 1, 2024</b>
<b>Preliminary registration of abstracts:</b>	<b>May 1, 2024</b>
<b>Registration fee Payment:</b>	<b>November 1, 2024</b>
<b>Registration and arrival to Indore:</b>	<b>November 6, 7, 2024</b>
<b>Conference:</b>	<b>November 7-9, 2024</b>
<b>Culture Trip</b>	<b>November 10, 2024</b>
<b>Departure:</b>	<b>November 10, 11, 2024</b>
<b>Deadline for Proceedings Full Papers (SPRINGER, NOVA):</b>	<b>November 10, 2024</b>