

材料科学与器件工程

国际会议

**International Conference on
Materials Science and Device Engineering
(ICMSDE 2024)**

会议手册
Conference Program

主办单位

Organizer

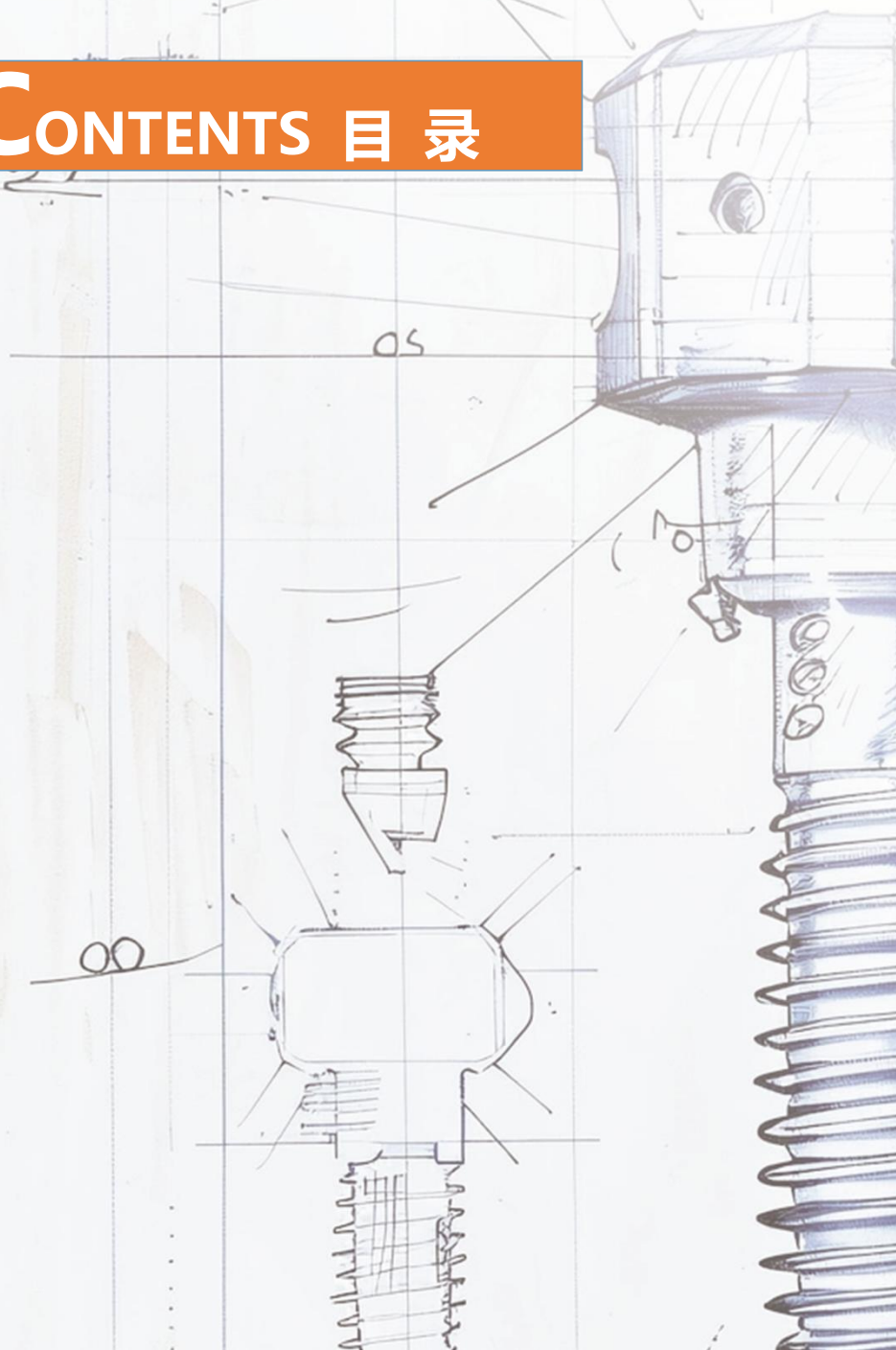
国际管理科学与工程技术协会（IAMSET）

International Association of Management Science
and Engineering Technology



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I.会议介绍

I. CONFERENCE INTRODUCTION

会议背景

BACKGROUND

随着全球对科技创新的不断追求，材料科学作为众多领域的基础学科，正发挥着越来越关键的作用。一方面，传统产业的升级改造迫切需要新型高性能材料的支持。例如，在制造业中，高强度、轻量化的材料能够提高产品的性能和能效，降低能源消耗。另一方面，新兴科技领域如电子信息、新能源、生物医药等的蓬勃发展，对具有特殊功能的材料提出了更高的要求。同时，材料科学与器件工程的发展也紧密相连，先进的材料是实现高性能器件的重要前提，为新型器件的设计与制造提供了可能。

在此背景下，材料科学与器件工程国际会议以新能源材料与环境，纳米材料与纳米技术，复合材料，光电材料与器件，电子、电路与系统等为主题，旨在为全球的科研人员、工程师和学者提供了一个交流合作的平台，以分享最新的研究成果、创新的技术和方法，共同探讨学科前沿问题，促进材料科学与器件工程成果向实际应用的转化，推动材料科学与器件工程的发展。

With the continuous pursuit of scientific and technological innovation in the world, material science, as a basic discipline in many fields, is playing an increasingly critical role. On the one hand, the upgrading of traditional industries urgently needs the support of new high-performance materials. For example, in manufacturing,

high-strength, lightweight materials can improve product performance and energy efficiency, reducing energy consumption. On the other hand, the vigorous development of emerging scientific and technological fields such as electronic information, new energy, biomedicine, etc., has put forward higher requirements for materials with special functions. At the same time, the development of material science and device engineering is also closely linked, and advanced materials are an important prerequisite for the realization of high-performance devices, which provides the possibility for the design and manufacture of new devices.

In this context, the International Conference on Materials Science and Device Engineering, with the theme of new energy materials and environment, nanomaterials and nanotechnology, composite materials, optoelectronic materials and devices, electronics, circuits and systems, aims to provide a platform for global researchers, engineers and scholars to share the latest research results, innovative technologies and methods and discuss the frontier issues of the discipline together, promote the transformation of the achievements of material science and device engineering into practical applications, and promote the development of material science and device engineering.

会议目的

OBJECTIVES

ICMSDE 2024 旨在汇集领先的学术科学家，研究人员和研究学者，交流和分享他们在材料科学与器件工程等方面的经验和研究成果。它还为研究人员、从业者和教育工作者提供了一个重要的跨学科平台，以展示和讨论材料科学与器件

工程领域的最新创新、趋势、关注以及遇到的实际挑战和采用的解决方案，凭借其高质量，它为学生、学者和研究人员提供了非凡的价值。

ICMSDE 2024 aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of materials science and device engineering. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of materials science and device engineering. With its high quality, it provides an exceptional value for students, academics and researchers.

会议主题

TOPICS

会议主题 Topics

主题一/Topic 1:	New Energy Materials and Environment
主题二/Topic 2:	Nanomaterials and Nanotechnology
主题三/Topic 3:	Composite Material
主题四/Topic 4:	Optoelectronic Materials and Devices
主题四/Topic 5:	Electronics, Circuits and Systems

II.日程安排

II. CONFERENCE SCHEDULE

October. 16 9:30-17:30	会议测试 Conference Rehearsal (9:30-17:30)			
	开幕式 Opening Ceremony (9:30-9:35)			
	嘉宾演讲 Keynote Speech (9:35-11:55)			
	时间 Time	报告题目 Title	报告人 Speaker	
	9:35-9:55		Prof. Numan Arshid	
	9:55-10:15	Native Bone as an Advance Energy Material: Nonequilibrium Energy Distribution, Charge Nanostructure and Age-related Changes	Prof. Andrey Pavlychev	
	October. 17 9:30-16:00	10:15-10:35		Dr. Nagaiah Kambhala
	10:35-10:55	Investigating the Mechanical Strength, Morphological Features, and Wear Durability of Natural and Glass Fiber-Reinforced Polymers	Dr. Sivasubramanian Palanisamy	
10:55-11:15	Emerging Advances and Future Prospects of two dimensional nanomaterials based solar cells	Dr. Shreya Sharma		
11:15-11:35	Synthesis and characterization of LaFeO ₃ /rGO nano-composites as electrode materials for asymmetry supercapacitor	Prof. Shail Upadhyay		

11:35-11:55	Exploring the Parameters for Efficient Electrochemical Photodetectors: A Comparative Study of ZnO, HgS, and MoS ₂	Dr. Peeyush Phogat
午餐时间 Lunch Break (11:55-14:00)		
嘉宾演讲 Keynote Speech (14:00-15:50)		
时间 Time	报告题目 Title	报告人 Speaker
14:00-14:20		Prof. K. A. Vijayalakshmi
14:20-14:40	Recent Advances in Predicting Perovskite Single Crystal Properties Using Machine Learning	Dr. Sarvani Jowhar Khanam
14:40-14:55	Growth and Characterization of Zn metal contents dependent ultra wide band gap ZnS nanoparticles	Dr. Bushra Parveen
14:55-15:10	Steel Corrosion Mechanism and Protection Using Sacrificial Anode and Potential Passivation	Dr. Hauwa Abubakar Rasheed
15:10-15:30	Fabrication of Ceramic thin films via Aerosol Assisted Chemical Vapour Deposition (AACVD) for Photovoltaic Applications	Prof. Muhammad Adil Mansoor
15:30-15:50		Prof. Paulo César DE MORAIS
论文推荐 Paper Recommend (15:50-15:55)		
Recommend Papers 推荐引用论文		
闭幕式 Closing Ceremony (15:55-16:00)		

Note: All time above is for GMT+8:00 (Beijing Time)

III. 嘉宾介绍

III. PRESENTER INTRODUCTION

主讲嘉宾

KEYNOTE SPEAKERS

Shail Upadhyay, Professor



Indian Institute of Technology (Banaras Hindu University), Department of Physics, Varanasi, Indian

Prof. Shail Upadhyay is a Professor at the Indian Institute of Technology (Banaras Hindu University), Varanasi, Indian, attached to the Department of Physics. She holds a Ph.D. in Materials Science and Technology, specializing in the areas of experimental condensed matter physics and materials science. Her current research focuses on electroceramics, negative dielectric materials, and supercapacitors. In scientific research, She is involved in eight research projects and is active in several professional organizations, including the Materials Research Society of India (MRSI), the Ferromagnetic Fluid Research Society of India (ISFFR), and the Institute of Technical Education of India (ISTE). In academic research, Prof. Shail Upadhyay has the influence of Google

Academic Index 25, published 25 research papers and published a book between 2019 and 2023. In addition, she has been a reviewer for several reputable publications such as Science Direct, Wiley, Springer, and IOP.



Muhammad Adil Mansoor,
Associate Professor
National University of Sciences and
Technology (NUST), Islamabad, Pakistan

Dr Muhammad Adil Mansoor is an Associate Professor and Head of the Department of Research, School of Natural Sciences, National University of Sciences and Technology (NUST), Islamabad, Pakistan. Dr Mansoor was awarded a Master of Science in Inorganic/Materials Chemistry (2008) and a Master of Philosophy in 2010 in the same domain. Then he did his Doctor of Philosophy (PhD) in Materials Chemistry (2015) from the University of Malaya (QS Ranked #57) Kuala Lumpur. After PhD he did two post-doctorates, one in Physics and the other in the Department of Mechanical Engineering UM. He is serving in NUST for the last six years. Dr Mansoor has over 13 years of experience in the field of fabrication of thin films via aerosol-assisted chemical Vapour deposition (AACVD) and has produced more than 60 well-reputed research articles with an impact factor of 260. He has won two Research grants worth 12.4 M PKR from

HEC Pakistan and one PSF research grant worth 4.45M PKR.



K A Vijayalakshmi, Associate Professor
Department of Physics, Sri Vasavi College,
Erode, India

K A Vijayalakshmi holds Ph.D. in Physics and has rich research experience, and currently serves as the associate professor at Department of Physics, Sri Vasavi College, Erode, India. Her research interests focus on plasma physics, quantum theory, crystal growth, thin film and energy storage devices. She participated in and complete two funded research projects, and has published more than 90 papers in international and national journals and 42 conference papers. Dr. K A Vijayalakshmi often participated in conferences and gave her wonderful speeches. She also serves as the reviewer for International Journal of Physical Science, International Journal of Polymer Materials and International journal of High Energy Physics (IJHEP), and is the member of Plasma Science Society.



Numan Arshid, Associate Professor

Sunway University Malaysia

Currently serving as an Associate Professor and Head of Sunway Center for Electrochemical Energy and Sustainable Technology (SCEEST), Sunway University, Malaysia, Dr. Numan Arshid specializes in developing 2D heterostructure nanomaterials for electrochemical energy storage and chemical/biosensors. With a robust publication record comprising more than 130 high-impact articles, the editing of 4 books, and the successful filing of 3 patents, he has consistently demonstrated his dedication to cutting-edge research and innovation. Beyond his research endeavours, he actively engages in teaching a diverse range of subjects and mentor students at undergraduate and postgraduate levels. His pedagogical proficiency has been honed through teaching experiences in Pakistan, China, and Malaysia, where he delivered lectures, guided student projects, and conducted examinations and lab work. Recognition as one of the world's top 2% scientists in the field of Energy and Materials for consecutive years (2021 & 2022) is a testament to his high level of expertise and the significant impact of his contributions within the scientific community.



Paulo César DE MORAIS, Professor

Catholic University of Brasilia

Paulo C. DE MORAIS, PhD, was full Professor of Physics at the University of Brasilia (UnB) – Brazil up to 2013, Appointed as UnB’s Emeritus Professor (2014), Appointed as Guest Professor of Huazhong University of Science and Technology – China (2011), Visiting Professor at Huazhong University of Science and Technology (HUST) – China (2012-2015), Appointed as Distinguished Professor at Anhui University (AHU) – China (2016-2019), Appointed as Full Professor at Catholic University of Brasília (UCB) – Brazil (2018), Appointed as CNPq-1A Research Fellowship since 2010. 2007 Master Research Prize from UnB, 2008-member of the European ERA NET Nanoscience Committee, Member of the IEEE-Magnetic Society Technical Committee, Senior Member of the IEEE Society, 2012 China’s 1000 Foreign Expert Recipient, and 2012 Academic Excellence Award from Brazilian Professor’s Union.

He held two-years (1987-1988) post-doc position with Bell Communications Research – New Jersey, USA and received his Doctoral degree in Solid State Physics (1986) from the Federal University of

Minas Gerais – Brazil. He graduated in both Chemistry (1976) and Physics (1977) at UnB. Professor Morais is member of the Brazilian Physical Society and the Institute of Electrical and Electronics Engineers – IEEE. He has served as referee for more than 50 technical journals, takes part of the Editorial Board of more than 15 technical journals and has conducted research on nanomaterials for over 40 years. He has delivered about 190 Invited Talks all over the World.

He is known for his research in preparation, characterization and applications of nanosized materials (magnetic fluid, magnetoliposome, magnetic nanoemulsion, magnetic nanocapsule, magnetic nanofilm, magnetic nanocomposite, nanosized semiconductors, polymeric dots, carbon dots, and graphene quantum dots). With more than 500 published papers in peer reviewed journals, more than 13,000 citations, and 16 patents, He has appeared in recent World ranking of top scientists, such as 2020-Stanford, 2022-Research.com, 2023-AD Scientific Index, and 2023-Research.com.



**Sivasubramanian Palanisamy,
Assistant Professor**

**Department of Mechanical Engineering at PTR
College of Engineering and Technology,
Madurai, India**

Dr. Sivasubramanian Palanisamy currently serves as an Assistant Professor in the Department of Mechanical Engineering at PTR College of Engineering and Technology, located in Madurai, India. He holds a Ph.D. in the field of Mechanical Engineering from Kalasalingam Academy of Research and Education (KARE) situated in Krishnankovil, India. His research expertise encompasses a wide range of areas, including biocomposite materials, the characterization of fibers, fiber-reinforced polymer composites, hybrid composites, fiber-reinforced elastomer composites, the study of tribological behavior in composite materials, and 3D printing. He has an impressive publication record, having authored over 55 research papers in renowned international journals and contributed to 10 book chapters. Additionally, he has delivered 20 keynote / invited talks in his specialized research domains. In recognition of his expertise, he serves as a referee for numerous esteemed journals, including but not limited to “Fibers”, “Biomass Conversion and Biorefinery”, “Engineering Science and Technology—an

International Journal”, “Applied Science and Engineering Progress”, “Tribology in Industry”, “Buildings”, “Processes”, “Sustainability”, and “Energies”.



Andrey Pavlychev, Professor

Solid States Electronics department, St. Petersburg State University, Russia

Professor Andrey Pavlychev is researching the electronic and atomic structure and atomic dynamics in free molecules, clusters, encapsulated molecules, solids and hierarchical materials. Recently, his main interests have been focused on composites and hierarchical nanostructures. Since 1996 Dr. Pavlychev is a professor at the St. Petersburg State University in the Solid States Electronics department. He lectures “Electronic structure of solids”, “Quantum chemistry of polyatomics”, “Nanophenomena in solids”. Professor Pavlychev has published more than 200 papers on Molecular and Cluster Physics, Condensed Matter, Hierarchical Nanostructures, Material Science, Medical Physics and Engineering Science. Professor Pavlychev actively and successfully collaborated and collaborates with research groups in Leipzig and Bonn Universities, Free University (Berlin), Tohoku University and Photon Factory in Japan and other scientific centers. He has succeeded in studies of dynamic

localization of core-excited polyatomic systems, angular distributions of the photoelectrons in fixed-in-space molecules, the spatiotemporal changes in the atom-molecular architecture of bone tissues and the hierarchy effects in electronic and atomic structure of bone. Since 2015, he successfully collaborates with Russian Medical Research Center of Orthopedics and Traumatology. He is the leader of interdisciplinary research projects “Relationships between Hierarchical Organization of the Skeleton and Nanostructure of Bone Tissue” supported by the Russian Basic Research Foundation (19-02-00891) and “Spatiotemporal Changes in Atom-molecular Architecture of Bone Tissue: The Basis of a Novel Convergent Technology” supported by the Russian Scientific Foundation (23-29-00172).



Nagaiah Kambhala, Assistant Professor

Department of Physics and Electronics, School of Sciences, Jain (Deemed to be) University, Bangalore, India

Dr. Nagaiah Kambhala is working as an Assistant Professor in the Department of Physics and Electronics, School of Sciences, Jain (Deemed to be) University. His research interests lie in Nano materials for hydrogen evolution, photo catalysts and super capacitor applications, Magnetic and transport studies of oxide thin films and multilayers,

Memristor/Resistive switching studies of oxides and 2D materials, 2D materials and Topological insulators for spintronic and flexible electronics applications. He has published about 30 international publications and several conference presentations within India and abroad. He also serves as the editorial board member of "American Journal of Nano Research and Applications" and the reviewer for many research Journals. He often attended academic conferences and workshops and delivered his wonderful presentations. Recently he received the International best researcher awards from the Asia international research awards.



Hauwa Abubakar Rasheed, Lecturer

**Department of Chemistry, Bayero University,
Kano, Nigeria**

Hauwa has earned a BSc in Chemistry from Bayero University, Kano, and subsequently a MSc in Oil and Gas Chemistry from the University of Aberdeen, United Kingdom. Hauwa has taken on the responsibilities of a lecturer at Bayero University Kano. Currently, she is pursuing a PhD in the Department of Industrial Chemistry at Nile University of Nigeria. Her present research focuses on the "Synthesis and Optimization of Carboxymethyl Cellulose from Agricultural Wastes for Applications in Oil and Gas Field Operations."



Sarvani Jowhar Khanam, Scholar

University of Hyderabad, India

Dr. Sarvani Jowhar Khanam, a graduate of the University of Hyderabad, India, is a scholar specializing in the fields of photoelectric detection, solar cell and photovoltaic technology, and materials research. In terms of academic publishing, she has published 14 papers in academic journals, participated in 5 conference papers, and holds 1 patent. Her research work is highly regarded by the academic community and she was awarded the Best Reviewer Award at Abhiyaan, SoH, the University of Hyderabad, Hyderabad, India in 2020. She is also active in several professional organizations, including the American Chemical Society, Materials Research Society of India Bangalore, Solar Energy Society of India, among others, promote research and application of optoelectronic materials and solar energy technologies.



Bushra Parveen, Assistant Professor

Department of Physics, Rawalpindi Women University, Pakistan

Bushra Parveen holds PhD degree in Physics and currently working as an assistant professor at Department of Physics, Rawalpindi Women University, Pakistan. Her research interests focus on semiconductors physics, optical and electrochemical energy storage devices. She has published 18+ research papers in various prestigious journals. She also visited Nanjing University China, for a project “Fabrication of semiconducting nanowires”. She received NRPU research grant on a project “GaN based LED’s” from Higher Education Commission Pakistan. She is a permanent member of Organization for Women in Science for the Developing World (OWSD) and recipient of Gold Medal in Bachelors from Queen Mary College, University of the Punjab and distinction to secure 2nd position in Masters from University of the Punjab, Lahore, Pakistan. She also served various institutions, Queen Mary College, Kinnaird College for Women University, and Lahore Garrison University, Lahore Pakistan and attained 12+ years’ experience including teaching, administrative and research activities.



Shreya Sharma, Project Associate

**Council of Scientific and Industrial
Research–National Institute Of Science
Communication and Policy Research
(CSIR–NIScPR)**

Dr. Shreya Sharma has completed her Ph.D. in Physics at Netaji Subhas University of Technology, where her research is centered on exploring the exceptional properties exhibited by nanomaterials and their potential contributions to advancing renewable energy technologies. Her primary focus lies in investigating the properties of 2D materials and their electrochemical study, specifically transition metal dichalcogenides, with the aim of applying these findings to enhance solar cells, supercapacitors, photodetectors, hydrogen production, and electrochemical sensing. She is currently working as a Project Associate in Council Of Scientific And Industrial Research–National Institute Of Science Communication and Policy Research (CSIR–NIScPR), New Delhi, India. The project name is: Identifying emerging sustainable energy technologies for a future innovation ecosystem: Blue-Energy Technology foresight.



Peeyush Phogat, Project Associate

**Council of Scientific and Industrial Research –
National Institute of Science Communication and
Policy Research (CSIR–NIScPR)**

Dr. Peeyush Phogat graduates Netaji Subhas University of Technology in New Delhi, India, and currently serves as a Project Associate at the Council of Scientific and Industrial Research – National Institute of Science Communication and Policy Research (CSIR–NIScPR). His research interests span a wide range of fields, including electrochemical applications, batteries, capacitors and supercapacitors, core-shell structures, thin films, solar cells, electron microscopy, photodetectors, and nanomaterials. Dr. Phogat has published six scholarly articles and three review papers. His achievements have been recognized with several awards, including Life Membership (ID LM-2129) from the Electron Microscope Society of India (EMSI) in 2024 and the Best Paper Award at the International Conference on Catalysing Nanoscience for Greener Innovation in 2024.

IV.组织机构

IV. ORGANIZATION



ICMSDE 2024 国际会议主办单位国际管理科学与工程协会（IAMSET）于 2010 年在香港注册成立，为合法运营的专业机构，在郑州设立有办事处。业务范畴包括理学、自然科学、社会科学、工程科学、信息学、医学等，涵盖了国际 STEM 的全部学科：科学（Science），技术（Technology），工程（Engineering），数学（Mathematics）等，并通过组织国际学术会议、论坛、研讨会等多种学术交流活动，为来自世界各地的专家学者建立了学术交流的优质平台。

协会通过组织并承办技术研讨会与来自全球的学术机构或个人建立良好的合作关系，为各国学者提供互相学习、自由交流的平台，为年轻学者提供机会，使其能够在实践中撰写优秀学术成果、了解学术成果出版的操作流程，从而提升自身以及团队的学术水平。同时为推进和传播管理科学、工程技术等前沿研究提供强有力的支持。

国际管理科学与工程协会与多家世界知名出版集团和多位期刊主编建立了良好的合作关系，如学术出版社（Academic Press），施普林格出版社（Springer），美国机械工程师协会（ASME），美国科学出版社（American Scientific Publishing）等出版社。

协会承接国际学术会议举办, 国际人才引进, 高分学术论文指导, 优秀论文推荐发表, 论文推广等学术活动。国际管理科学与工程技术协会努力践行以上使命, 以加强与各国学术机构之间的合作, 促进国际学术交流。

V.会议主席

V. CONFERENCE CHAIRMAN



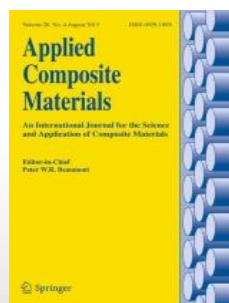
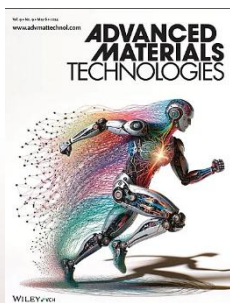
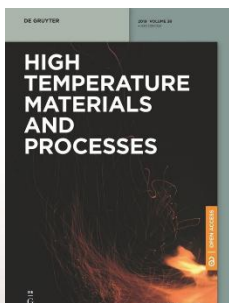
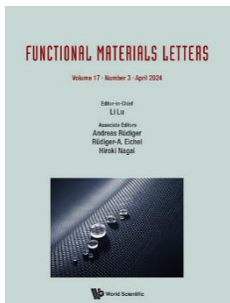
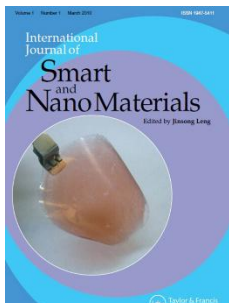
Dr. Zhenling Liu

Henan University of Technology, China

Prof. Zhenling Liu is the associate professor at the School of Management, Henan University of Technology and is charge of teaching the courses, including “Quantitative Analysis”, “Comprehensive Experiment on Application of Statistical Analysis Software”, “Econometrics”, “Marketing Research and Decision Making”, and “Frontier of Management”, etc. His research interests focus on energy-economy-environment system and sustainable development. Prof. Liu presided or participated in several projects and has published more than 90 papers in national and international journals and 13 books. He also severs as the associate editor of Journal of Sustainable Science and Management, and the editor of Advances in Industrial Engineering and Management. Prof. Liu has won several awards, including 3 provincial and ministerial science and technology progress awards.

VI.期刊支持

VI. RELATED RENOWNED JOURNALS



VII.参与信息

VII. PARTICIPATION INFORMATION

会议时间和方式

Conference Time and Way

- 北京时间 2024 年 10 月 16 日, 9:30-17:30 会议测试
October 16, 2024, 9:30-17:30 (Beijing Time): Conference Rehearsal
- 北京时间 2024 年 10 月 17 日, 9:30-17:30 线上会议
October 17, 2024, 9:30-17:30 (Beijing Time): Online Conference

- 请下载腾讯会议并提前注册账号
Please install VooV Meeting Software on your PC (The official website of VooV Meeting Software: <https://voovmeeting.com/>) and create an account in advance.

- 请各位嘉宾于会议当天提前进入会议室，谢谢！
Please speakers join the VooV Meeting 5 minutes before the scheduled time on October 17, 2024 (Beijing Time). Thanks.

会议入口

Conference Entrance

- **会议测试入口/Conference Rehearsal Entrance**

链接: <https://meeting.tencent.com/dm/5SRuwBSX7YHu>

#腾讯会议: 485-281-667

会议密码: 2024

Link: <https://meeting.tencent.com/dm/5SRuwBSX7YHu>

Conference ID: 485-281-667

Password: 2024

- **正式会议入口/Online Conference Entrance**

链接: <https://meeting.tencent.com/dm/Q8cMs4i7GZx2>

#腾讯会议: 177-869-300

会议密码: 2024

Link: <https://meeting.tencent.com/dm/Q8cMs4i7GZx2>

Conference ID: 177-869-300

Password: 2024

- **其他参会入口**

微信视频号直播—WeChat Channels Live

抖音直播—TikTok (Chinese version) Live

Note: We will upload the conference recording to TikTok, WeChat Channel, Twitter, YouTube to promote the conference and your article after the conference.

联系方式

Contact Us

会务组

CONFERENCE AFFAIRS GROUP

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