



6th International Workshop on Functional Reverse Engineering of Machine Tools (WRE 2024)

14th December 2024

Theme – AI for Industrial Transformation

Hybrid

Inauguration Ceremony

Activities	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Registration of on-campus speakers, session chairs and guests	8:00–8:45 AM	Venue: AHA Auditorium Meeting link: Topic: WRE 2024 - Inauguration Ceremony Time: Dec 14, 2024, 08:00 AM Islamabad, Karachi, Tashkent Join Zoom Meeting https://zoom.us/j/91603362476?pwd=UaK09er56ksc8L7i2ngxHat2RcqHbg.1 Meeting ID: 916 0336 2476 Passcode: 837521
Mic and camera check for online participants	8:00–8:45 AM	
Guests to be seated at the Venue	8:55 AM	
Recitation from the Holy Qur'an	09:00 AM	
National Anthem	09:05 AM	
Welcome Address by General Co-Chair, Prof. Dr. S. M. Hasan Zaidi, Acting Rector GIK Institute, Pakistan.	9:10 AM	
Theme Talk – 1: AI for Digital Transformation; Prof. Dr. Muhammad Tufail, PVC, NEDUET, Karachi, Pakistan	09:25 AM	
Keynote Talk 1: Enhancing Competitiveness of the Pakistani Automobile Industry Through AI: A Strategic Perspective, Prof. Dr. Tauseef Aized Khan, UET Lahore, Pakistan	09:45 AM	
Keynote Talk 2: Bridging the Future of Learning and Innovation: Harnessing Digital Twin Technology in Education and Industry, Prof. Dr. Bhawani Shankar Chowdhary SI, Mehran UET, Pakistan	10:05 AM	
Address by Guest of Honor Director General DoST	10:25 AM	
Address by Chief Guest Prof. Dr. Fazal A. Khalid, SI, General Chair WRE 2024	10:35 AM	
Presentation of Shield to the Guests by General Chair WRE 2024	10:55 AM	
Group Photo	11:00 AM	

Tea Break: 11:00 AM – 11:20 AM



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Parallel Technical Session 1: AI for Manufacturing

Session Chairs: Prof. Dr. Pardeep Kumar QUEST, Pakistan, Dr. Massab Junaid, GIK Institute, Pakistan

Chapter/Invited Talk Title	Author/Speaker & Affiliation	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 3: AI in Industrial Transformation: Concept of Smart Maintenance	Dr. Uzair Khaleeq uz Zaman CEME, NUST, Pakistan	11:30 AM to 11:50 AM	Venue: Main Lecture Hall 1, New Academic Block First Floor
Role of AI in Maximizing Productivity of Manufacturing Systems	Dr. Muhammad Iqbal SINES, NUST, Pakistan	11:50 AM to 12:10 PM	Meeting link: Topic: WRE 2024 - Technical Session 1: AI for Manufacturing Time: Dec 14, 2024 11:30 AM Islamabad, Karachi, Tashkent
AI-Based Manufacturing of Smart Sensors for Rapid Sign Language Detection	Weiye Jin Tsinghua University China	12:10 PM to 12:30 PM	Join Zoom Meeting https://zoom.us/j/97273951353?pwd=IDo1Awzj9J0pkG62pVuoEHozdrL4DG.1
Invited Talk: Optimization of Drop-on-Demand Inkjet Printing: Nozzle Properties, Fluid Properties and Driving Mechanism	Dr. Anas Bin Aqeel CEME, NUST, Pakistan	12:30 PM to 12:50 PM	Meeting ID: 972 7395 1353 Passcode: 113676

Lunch & Prayer Break (1:00 PM to 2:00 PM)





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Parallel Technical Session 2: AI in Industry 4.0

Session Chairs: Professor Dr. Bhawani Shankar Chowdhary SI, Mehran UET, Pakistan, Dr. Ali Turab, GIK Institute, Pakistan

Chapter/Invited Talk Title	Author/<u>Speaker</u> & Affiliation	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 4: Artificial Intelligence for Malware Reverse Engineering to Achieve Operational Technology (OT) Cyber Security	Prof. Dr. Muhammad Asad Arfeen, NED UET, Karachi	11:30 AM to 11:50 AM	Venue: Main Lecture Hall 2, New Academic Block First Floor Meeting link: Topic: WRE 2024 - Technical Session 2: AI in Industry 4.0 Time: Dec 14, 2024 11:30 AM Islamabad, Karachi, Tashkent Join Zoom Meeting https://zoom.us/j/99246013792?pwd=t9FoUbuuVYrR1xGOXz81gtabepQJfa.1 Meeting ID: 992 4601 3792 Passcode: 206729
Deep Learning Based Tool Orientation/Pose Estimation for Robotic Machining	Dr. Ghani University of Bahrain, Bahrain	11:50 AM to 12:10 PM	
AI-enabled Age-Tech devices and platforms	Dr. Humayun Rashid Xavor Corporation, China	12:10 PM to 12:30 PM	
Revolutionizing Industry 4.0 with 5G and 6G: The Role of Massive MIMO in Smart Manufacturing	Dr. Zain Siddique GIK Institute, Pakistan	12:30 PM to 12:50 PM	

Lunch & Prayer Break (1:00 PM to 2:00 PM)



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Parallel Technical Session 3: AI and Production Planning

Session Chairs: Dr. Ghulam Moeen Uddin, UET Lahore, Pakistan, Engr. Faheem Ahmad, GIK Institute, Pakistan

Chapter/Invited Talk Title	Author/ <u>Speaker</u> & Affiliation	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 5: In the Pursuit of Savings and Net Zero at the Footsteps of 5th Industrial Revolution: Artificial Intelligence for Operational Excellence of Large Industrial Complexes	Prof. Dr. Ghulam Moeenuddin UET Lahore, Pakistan	11:30 AM to 11:50 AM	Venue: Main Lecture Hall 3, New Academic Block Second Floor Meeting link: Topic: WRE 2024 - Technical Session 3: AI and Production Planning Time: Dec 14, 2024 11:30 AM Islamabad, Karachi, Tashkent
Invited Talk: AI-Driven Reverse Engineering for Digital Transformation: Enhancing Reliability in SCADA Systems and Industrial Automation	Prof. Dr. Muhammad Amir Sir Syed University of Engineering and Technology Karachi, Pakistan	11:50 AM to 12:10 PM	Join Zoom Meeting https://zoom.us/j/96855939215?pwd=d6geSV71ye8s5fea9FsF2PMvsDiW6n.1
Invited Talk: The Role of Artificial Intelligence /Digital Twin in Dentistry	Dr. Shahzad Anwar UET Peshawar, Pakistan	12:10 PM to 12:30 PM	
Invited Talk: Scalable Personalized Treatment Recommendation in Critical Care	Prof. Dr. Ummi Azizah YARSI University Indonesia	12:30 PM to 12:50 PM	Meeting ID: 968 5593 9215 Passcode: 671106

Lunch & Prayer Break (1:00 PM to 2:00 PM)





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Parallel Technical Session 4: AI, IOT and Digital Twin

Session Chairs: Prof. Dr. Ghulam Hussain, University of Bahrain, Bahrain, Dr. Shahzad Ahmad GIK Institute, Pakistan

Chapter/Invited Talk Title	Author/ <u>Speaker</u> & Affiliation	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 6: Digital Twins- Asset Taxonomy, Risks and Potential Solutions	Prof. Dr. Shehnila Zardari NED UET, Pakistan	2:00 PM to 2:20 PM	Venue: Main Lecture Hall 1, New Academic Block Ground Floor Meeting Link:
Revolutionizing CNC Machining: The Role of AI in Enhancing G and M Code Interpreter Design	Dr. Muhammad Shakeel Nanjing University of Aeronautics and Astronautics, China	2:20 PM to 2:40 PM	Topic: WRE 2024 - Technical Session 4: AI, IoT and Digital Twin Time: Dec 14, 2024 02:00 PM Islamabad, Karachi, Tashkent
Invited Talk: Navigation system medgital for surgery based on augmented reality technologies	Prof. Dr. Vladimir Ivanov Universitetskaya Embankment, Russia	2: 40 PM to 3:00 PM	Join Zoom Meeting https://zoom.us/j/93133470425?pwd=dXnQkTf38KBhYYOu59Gzmp9bfrVXz.1
Invited Talk: The Iot and Digital Twin; two different yet complementary technologies	Prof. Dr. Pardeep Kumar QUEST, Nawabshah, Pakistan	03:00 PM to 3:20 PM	Meeting ID: 931 3347 0425 Passcode: 591219

Tea Break: 3:20 PM – 3:40 PM



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Parallel Technical Session 5: AI/ML in Technological Development

Session Chairs: Prof. Dr. Rizwan Ahmed Khan, Salim Habib University, Pakistan, Engr. Muhammad Shoaib Ijaz, GIK Institute, Pakistan

Chapter/Invited Talk Title	Author/Speaker & Affiliation	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 7: AI and Machine Learning in Healthcare: Innovations, Applications, and Ethical Considerations	Prof. Dr. Rizwan Ahmed Khan Salim Habib University Karachi, Pakistan	2:00 PM to 2:20 PM	Venue: Main Lecture Hall 2, New Academic Block Second Floor Meeting link: Topic: WRE 2024 - Technical Session 5: AI/ML in Technological Development Time: Dec 14, 2024 02:00 PM Islamabad, Karachi, Tashkent Join Zoom Meeting https://zoom.us/j/94069474642?pwd=VSIE4HuH1qQuVblg7iWE4rm7hG72dV.1 Meeting ID: 940 6947 4642 Passcode: 304083
Multiphysics modeling and explainable machine learning for prediction of metal additive manufacturing	Dr. Chaochao Wu Fuzhou University, China	2:20 PM to 2:40 PM	
Deep Learning-Based Robotic System for Efficient Object Recognition, Sorting, and Grasping on a Conveyor Belt	Muhammad Arsalan FME GIKI, Pakistan	2: 40 PM to 3:00 PM	
Industry 5.0: Human-Centred Manufacturing	Dr. Muftooh Siddiqi Aston University UK	03:00 PM to 03:20 PM	

Tea Break: 3:20 PM – 3:40 PM



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Closing Ceremony

Closing Session	Schedule (Pakistan Standard Time)	Meeting Link & Venue
Keynote Talk 8: New AI models driving the imprecision in Production Planning and Control systems by Prof. Dr. Florin Popentiu Vladicesu, National University of Science and Technology, Bucharest Romania	3:45 PM to 4:05 PM	Venue: AHA Auditorium Meeting link: Topic: WRE 2024 - Closing Ceremony Time: Dec 14, 2024 03:30 PM Islamabad, Karachi, Tashkent Join Zoom Meeting https://zoom.us/j/92349857715?pwd=T92UhrjutjwxMaM6JZ2YaCDBfxoSIP.1 Meeting ID: 923 4985 7715 Passcode: 535787
Keynote Talk 9: How AI is revolutionizing Telecommunication products manufacturing, Dr. Atif Siddiqui, Airbus Defense and Space, UK	4:05 PM to 4:25 PM	
Closing Remarks by Prof. Dr. Sayed. M. Hasan Zaidi, Acting Rector, GIK Institute and General Co-Chair WRE 2024	4:25 PM to 4:45 PM	
Closing Remarks by Honorary Chair WRE 2024, Professor Dr. Duc Pham, OBE, Department of Mechanical Engineering, University of Birmingham, UK	4:45 PM to 4:55 PM	
Address by Chief Guest Dr. Jamil Ahmad, Member (IT) Higher Education Commission, Pakistan	4:55 PM to 5:10 PM	
Presentation of Shields to IMechE Advisor and Executive Committee by General Chair	5:10 PM to 5:20 PM	
Vote of Thanks by Dr. Taqi Ahmad Cheema, Dean FME GIK Institute, Pakistan	5:30 PM	
Group Photo	5:35 PM	

Thank you!



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