

Preface

The Department of Design, Manufacturing and Engineering Management at the University of Strathclyde was honoured to host the 21st International Conference on Manufacturing Research (ICMR2024), during the 28th to 30th August 2024. The Conference took place in Glasgow, Scotland, incorporating the 38th UK National Conference on Manufacturing Research.

Initiated by the Consortium of UK University Manufacturing and Engineering Heads (COMEH), ICMR has been the UK's main manufacturing research conference for 38 years and an international conference since 2003, bringing researchers, academics and industrialists together to share their vision, knowledge and experience, and discuss emerging trends and new challenges. With the accelerating globalisation of manufacturing in the 21st century, the urgent need to keep pace has produced rapid advancements in technology, research, and innovation. ICMR solicits papers on both cutting-edge and emerging theoretical research and its recent industrial applications, with a goal of bringing together practical and theoretical knowledge from academic and industrial organisations across the world.

The conference accepted 133 full papers to be presented at the conference and published in the conference proceedings, and 45 abstracts for presentations at the conference, from the delegates from 23 countries. There were two keynote sessions for 10 plenary lectures and 30 parallel sessions, including 5 special invited sessions, for 185 presentations. These covered fields of advanced manufacturing technologies and systems, materials, product designs, modelling, testing and characterisation, data and digital engineering, mechatronics and robotics, as well as remanufacturing, sustainable manufacturing, manufacturing innovation and management. They reflected well the state of the art of both technology advances and application practices, and gave a strong indication to the trend of developing advanced manufacturing that supports product, manufacturing process, and business innovation and sustainability.

We would like to thank all of our sponsors, namely, The Consortium of UK University Manufacturing and Engineering (COMEH), China Society for Technology of Plasticity, Didactic Services Ltd, EDP Sciences, EPSRC (in the form of financial support to the Digital Twin-driven Smart Manufacturing Project), European Commission (in the form of financial support to the EU FAST-SMART Project, M2DESCO Project, Carbo4Power Project, and icliMaBuilt Project), Innova NanoJet Technologies Limited, MarRI-UK, Mingtai Holding Development Co., Ltd, National Manufacturing Institute Scotland, Scottish Engineering, SmartChain International, SPEE3D, for their strong support to the conference.

I would like to extend my gratitude to the ICMR2024 Organising Committee: Song Yang, Conference Co-ordinator, for his effort in co-ordinating activities associated with conference organisation; Jie Zhao, in preparing conference programme, delegates' registrations, communicating with speakers, and all of other administrative works; Xingguo Zhou, Paper Handling Manager, in handling paper submission and reviews, and preparing conference proceedings; Bo Chen, Industrial Exhibition and Poster Manager, in communicating with potential sponsors as well as arranging the posters/exhibitions; Manaf Al-Ahmad and Ian Edgecomb, Marketing & Promotion Managers, for their effort in promoting the conference through multi-channel communications and disseminations; and Amrutha Pattath Saseendran (Attendee Assistance Manager), Andreas Reimer (NMIS/AFRC Liaison), and Amy Grech (Attendee Assistance Manager), for their great assistance in preparing and running the conference. Their enthusiasm and professionalism ensured the success of the conference.

Professor Yi Qin, Chair of the ICMR2024

28th August 2024