GS14 Cyber-physical and digital twin production systems **GS14-01** Suggestion and Investigation of Interlock System for Human Error using Modular Robot Kaoru Mitsuhashi **Teikyo University GS14-02** Enhancing Nanostructure Image Generation Through Physical Rendering Wei-Cheng Jiang and Chao-Ching Ho National Taipei University of Technology **GS14-03** Digital Twin-Driven Work Handling Charles Walker, Abhilash Puthanveettil Madathil and Xichun Luo University of Strathclyde GS14-04 Optimization of machining programs using machine tool digital twin Chang-Ju Kim, Segon Heo, Chan-Young Lee and Jung-Seok Oh Korea Institute of Machinery and Materials GS14-05 Digital twin-driven ultra precision manufacturing system Xichun Luo University of Strathclyde