SPECIAL SESSION

Korea-Singapore International Global Industry Forum 2017 (Tech Industry)
(**Chair/Co-Chair:** Prof. Seung Ki Moon / Prof.David W. Rosen)

18 Nov 2017 / 9:00 – 12:30
Ballroom 3913, MBS, Level 3

'The Forth Industrial Revolution – Smart Factory and Smart City'

Industry 4.0 has tremendous potential to improve productivity, efficiency, and overall sustainability for manufacturing industries across the globe. In particular, the industries also want to explore new approaches and designs for smart factory and smart city using Internet of Things (IoT), Artificial Intelligent (AI), and 3D Printing technologies. This forum will discuss the opportunities and challenges on the value proposition, key opportunities, top challenges and technology roadmap for implementing in the industry 4.0.

- **Introduction**
- **Prof. Seung Ki Moon:** Product Design and Development for Industry 4.0
- **Prof. Kwan Min Lee:** UX Design and Human Evolution: Innovations in Consumer Electronics
- **Prof. David W. Rosen:** Impacts of 3D Printing on Industry 4.0 – and Vice Versa
- **Dr. Marius Erdt:** Visual Computing innovations for the fourth industrial revolution
- **Coffee/Tea Break**
- **Mr. Luca Simonini:** Satellites for Industry 4.0 and Industry 4.0 for Satellites
- **Mr. Kelvin Hau-Kong Chan:** Development of Advanced Manufacturing in Rolls-Royce
- **Dr. Sumin Jeon:** Driving the digitalization for Industry 4.0
- **Open Forum:** Future manufacturing and Industrial 4.0

Prof. Seung Ki Moon

Assistant Professor
School of Mechanical and Aerospace Engineering
Nanyang Technological University, Singapore

Seung Ki Moon is an assistant professor in school of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore. He received his Ph.D. degree in Industrial Engineering from the Pennsylvania State University, USA, in 2008, his M.S. and B.S. degrees in Industrial Engineering from Hanyang University, South Korea, in 1995 and 1992, respectively. He worked as a Senior Research Engineer at the Hyundai Motor Company, South Korea for eight years before embarking on his PhD degree. After completing his doctoral degree, he joined the Department of Mechanical Engineering, Texas A&M University for one year as a postdoctoral research associate. He is interested in the boundary-spanning research that integrates the knowledge of design, engineering, and economics. His current focuses include applying sciences and economic theory to the design of customized and sustainable products, services and systems, strategic and multidisciplinary design optimization, advanced modeling and simulation, design for additive manufacturing/3D printing, embedded sensor design for 3D Printing, and advanced remanufacturing for Industry 4.0.

SPECIAL SESSION

Prof. Kwan Min Lee

Korea Foundation Professor in Contemporary Korean Society and New Media
Wee Kim Wee School of Communication and Information
Director, NTU UX (User Experience) Lab
Fellow, Institute on Asian Consumer Insight (ACI), Nanyang Business School
Professor, School of Computer Science and Engineering

Kwan Min LEE (Ph.D., Stanford) is the inaugural Korea Foundation Professor in Contemporary Korean Society and New Media, and the Director of UX (User Experience) Lab at the Wee Kim Wee School of Communication and Information at Nanyang Technological University (NTU). Previously, Lee was the founding director of Interaction Science Research Center and the founding WCU (World Class University) Professor of the Department of Interaction Science at Sungkyunkwan University (SKKU), S. Korea. Lee also directed Samsung Electronics' User Experience (UX) Group and the Creative Lab (C-Lab) as one of the youngest vice presidents in the Samsung corporate history. At Samsung, Lee led developments of new products and services for its visual display (VD) division through: user experience (UX) planning and strategy, open innovations and outside partnerships, and internal incubations of creative projects at C-Lab. Prior to SKKU and Samsung, Lee had taught at the Annenberg School for Communication and Journalism at the University of Southern California (USC) for 12 years. At USC, Lee was one of the youngest tenured professors.

Prof. David W. Rosen

A Professor in the Engineering Product Development pillar at the Singapore University of Technology & Design, as well as a Professor in the School of Mechanical Engineering at the Georgia Institute of Technology

David Rosen is a Professor in the Engineering Product Development pillar at the Singapore University of Technology & Design, as well as a Professor in the School of Mechanical Engineering at the Georgia Institute of Technology (on leave). He is the Research Director of the Digital Manufacturing and Design Centre at SUTD. His research interests lie at the intersection of design, manufacturing, and computing with specific focus on additive manufacturing, computer-aided design, and design methodology. He is the recipient of the 2013 Solid Freeform Fabrication Symposium, International Freeform and Additive Manufacturing Excellence (FAME) Award and the co-author of a leading textbook in the area.

SPECIAL SESSION

Dr. Marius Erdt

Deputy Director of Fraunhofer Singapore where he is also head of Visual and Medical Computing

Dr. Marius Erdt is Deputy Director of Fraunhofer Singapore where he is also head of Visual and Medical Computing. He is also an Adjunct Assistant Professor at the School of Computer Science and Engineering at Nanyang University in Singapore. From 2012-2013, he was head of Medical Computing at Fraunhofer IDM@NTU. From 2007-2012, he worked at Fraunhofer IGD in Germany in the cognitive computing and medical imaging department as a post-doc and research associate, respectively. In 2007, he was affiliated with Siemens Medical Solutions as part of his studies. He received his PhD in Computer Science from the Technische Universität Darmstadt with summa cum laude.

His research interests include Medical Computing, in particular, statistical shape modeling and machine learning based approaches, as well as Virtual and Augmented Reality. Dr. Erdt is co-founder of the Clinical Image-based Procedures (CLIP) workshop established in 2012 and is active in various program and reviewing committees of international conferences and journals. He has led various research projects in the field of Visual and Medical computing and has strong experience in managing R&D projects together with the industry to apply latest research results in real-world applications.

Mr. Luca Simonini

S4TIN (Smart Small Satellite Systems Thales in NTU)
Co-director
Thales Solution Asia
Thales Research and Technology, Singapore

Luca SIMONINI holds a degree in Aerospace Engineering (2004) with Specialization in Space Engineering from Universitá di Pisa (Italy). In 2005 he joined the Research and Technology Centre (ESTEC) of the European Space Agency (ESA) in The Netherlands with the Young Graduate Trainee Program to deal with Preliminary Design Phases and Concurrent Engineering at the Concurrent Design Facility (CDF). In 2006 started working at Alcatel Alenia Space as sub-contractor for implementing Concurrent Engineering Methodologies and tools and supporting the Advanced Project Sections of the Science and Observation Department in System Studies. He joined the company as staff in 2007, now renamed Thales Alenia Space, with the same responsibilities. As System Engineer in the Advanced Project Section of Thales Alenia Space he participated in the preparation of Martian and Moon Missions (ExoMars, Mars Sample Return and others) and Earth Observation missions for institutional agencies (NASA, ESA, CNES,…) and export. In 2013 he took the Satellite System Engineer role for the Earth Observer Optical Product Line. In 2015 he joined Thales Solution Asia in Singapore appointed of the responsibility of co-director of S4TIN (Smart Small Satellite Systems Thales In NTU) joint laboratory in NTU. He has published over 15 papers in the field of space system engineering and concurrent engineering.

SPECIAL SESSION

Mr. Kelvin Hau-Kong Chan

SpDip. (AM), MBA (Dist), MSc, CEng MIMechE
Programme Manager – ALM
Sub-surface & Measurement at Rolls & Royce

Kelvin Chan joined Rolls-Royce in 2006 as a test engineer based in Derby, UK. He returned to Rolls-Royce Singapore in 2007 to lead research projects in solid oxide fuel cells and advanced technologies. Kelvin was appointed Programme Manager, Manufacturing Technologies in 2014. He is responsible for the development of advanced manufacturing capabilities, including additive manufacturing, metrology and sub-surface technologies for various applications in the business. He has led fundamental research programmes exploring new technologies and delivered improvement projects for manufacturing plants through partnerships with universities and research institutes.

Kelvin Chan graduated with a Bachelor of Engineering (Mechanical Engineering) degree from the National University of Singapore, and a Master of Science (Mechanical Engineering) degree with Distinction from Nanyang Technological University. He further obtained a Master of Business Administration degree with Distinction from University of Manchester.

Dr. Sumin Jeon

Software architect
in Digital Factory division at SIEMENS Pte. Ltd.

Dr. Su Min Jeon is a software architect in Digital Factory division at SIEMENS Pte. Ltd. She performs consultancy of manufacturing system design & Simulation for varying manufacturing industries. She also conducted R&D and Factory of the future projects as a scientist at A*STAR, Singapore.

Consultancy area: Factory simulation, Manufacturing software system design, Production planning and process simulation, Virtual reality, AR application, Big data management