

Singapore Institute of Manufacturing Technology (SIMTech)

Nano Science and Technology

Name	Project	Degree By
Dr Kok Shaw Wei swkok@simtech.a-star.edu.sg	Nano measurement and characterization	NTU
Dr Huang Zhaohong zhhuang@simtech.a-star.edu.sg	Nano structured materials electro-photo catalysts	NTU/ NUS
Dr Teo Wern Sze wsteo@simtech.a-star.edu.sg	Nanomodifications for High Toughness Natural Fibre Reinforced Bio-composites	NTU/ NUS
Dr Wei Jun jwei@simtech.a-star.edu.sg	Carbon Nanotube Growth, Devices and Applications (Potential collaboration with NTU-EEE, MSE) Graphene Exfoliation, Synthesis and Applications (Potential collaboration with NTU-MSE, EEE)	NTU
Dr Wong Liang Jie Scientist I wonglj@simtech.a-star.edu.sg	Nanoscale Devices for High Intensity High Harmonic Generation	NTU/ NUS
Dr Wu Yongling, Linda ylwu@simtech.a-star.edu.sg	Nanoparticle Synthesis and Surface Modification for Functional Coatings	NTU
Dr Zeng Xianting xzeng@SIMTech.a-star.edu.sg	Nano-structured Supertough Tribological Coatings for High Temperature Applications Self Lubricating Nanocomposite Coating for Wear Protection	NTU/ NUS
Dr Huang Hui hhuang@SIMTech.a-star.edu.sg	Functional coatings and smart coatings (e.g. Energy-efficient, photochromic/thermalchromic/electrochromic, antimicrobial, photocatalytic, easyclean, conductive, antistatic, barrier)	NUS/NTU/SUTD
Dr Dong Xuecheng xcdong@simtech.a-star.edu.sg	Solvent Recovery from pharmaceutical manufacturing/membrane technology	NUS
Dr He Wei hewei@simtech.a-star.edu.sg	Nanobubble for cleaning	NUS/NTU

Intelligent Systems

Name	Project	Degree By
Dr Chong Chin Soon cschong@simtech.a-star.edu.sg	Multi-objective Planning and Scheduling for High Mix Low Volume Manufacturing.	NTU

Dr Jonathan S.C. Low, Dr sclow@simtech.a-star.edu.sg	Analytics for rapid sustainability analysis of multi-line multi-product firms Decision support system for waste-to-resource matching in industrial symbiosis networks	NTU
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Dr Lee Eng Wah ewlee@simtech.a-star.edu.sg	Planning and Scheduling in Remanufacturing Operations	NTU
Dr Li Xiang xli@simtech.a-star.edu.sg	Machine Learning for Predictive Modelling in Manufacturing Cyber-physical System Advanced Data Mining for Anomaly Pattern Detection in Manufacturing Processes	NTU
Dr Lim Ser Yong sylin@simtech.a-star.edu.sg	Dynamic Control of Mechatronic Systems	NUS
Dr Lin Wei wlin@simtech.a-star.edu.sg	Teaching robot for manipulation using deep learning Soft robot hand for grasping irregular sharped objects	NTU/ NUS
Dr Tan Puay Siew pstan@simtech.a-star.edu.sg	Context Aware, Multi-objective Decision Support for Complex Supply Chains. Disruptions / Risks Mitigation in Complex Supply Chains.	NTU
Dr Yuan Xue Ming xmyuan@SIMTech.a-star.edu.sg	Consumer Behavior Modeling and Intelligent Demand Forecasting Predictive Inventory Management and Optimization Manufacturing and Service System Dynamic Modeling and Optimization Global Supply Chain Analytics and Management	NTU/ NUS
Dr Zhang Nengsheng, Allan nzhang@simtech.a-star.edu.sg	Data analysis for supply chain and last mile logistics Cyber-physical production system modeling and optimazation	NTU/ NUS
Dr Zhou Junhong jzhou@simtech.a-star.edu.sg	Intelligent Diagnosis and Prognosis for Condition Based Maintenance	NTU
Dr Liu Tong tliu@simtech.a-star.edu.sg	3D Intelligent Analysis of CT Data	NTU
Dr Xu Chi cxu@simtech.a-star.edu.sg	1. Machine learning and data mining for enterprise and supply chain applications 2. Intelligent decision support/making with data analytics 3. Context-aware information management	NTU

Dr Ng Yen Ting ytng@simtech.a-star.edu.sg	Multi-scale Simulation for Energy and Materials Flow Multi-objective Planning and Optimization for Energy and Resource Efficiency	NTU/NUS
Dr Abhishek Gupta abhishek_gupta@simtech.a-star.edu.sg	1) Knowledge Transfer and Multi-tasking in Data-Driven Optimization 2) Transfer Learning in Expensive Simulation-based Optimization	NTU
Dr Joo Byung Jun jooobj@simtech.a-star.edu.sg	Real-time decision support system for operations planning and scheduling in the Industry 4.0 environment	NTU

Miniaturized medical device and Biosensors

Name	Project	Degree By
Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg	Chip-scale X-ray Sources: Theory and Design	NTU/ NUS

Material Sciences

Name	Project	Degree By
Dr Bi Gui Jun gjbi@simtech.a-star.edu.sg	Laser based additive manufacturing for 3D printing, surface modification and repair Hybrid laser aided additive manufacturing. Artificial intelligence for additive manufacturing. Development of new materials via additive manufacturing. Development of advanced welding and joining technologies.	NTU
Dr Chua Beng Wah bwchua@simtech.a-star.edu.sg	Development of new hybrid forming process for improving formability of light weight materials e.g. Mg , Ti. Development of lost core technique in liquid forging of creating internal features for Mg and Al alloys and composites. Liquid forging of bulk metallic glass materials.	NTU/ NUS

<p>Dr Huang Zhaohong zhhuang@simtech.a-star.edu.sg</p>	<p>Composite Anode Materials for Electro-oxidation of Organic Pollutants in Wastewater.</p> <p>Materials Recovery from Industrial Wastes by Chemical/ Electrochemical Processes.</p> <p>Metallic Thin Film Membrane with Submicron/Nano Pore Size.</p>	<p>NTU/ NUS</p>
<p>Dr John Yong Ming Shyan msyong@simtech.a-star.edu.sg</p>	<p>Development of liquid forging of high temperature melting materials for the high strength applications.</p> <p>Incremental forming of hard- to- deform materials for high strength applications.</p>	<p>NUS</p>
<p>Dr Li Tao tli@simtech.a-star.edu.sg</p>	<p>Powder injection molding of metal and ceramic materials.</p>	<p>NUS</p>

<p>Dr Liu Kui kliu@simtech.a-star.edu.sg</p>	<p>Ductile Mode Machining of Brittle Materials.</p> <p>Micro/Nano Machining.</p> <p>Ultra-precision/Ultrasonic Machining.</p>	<p>NTU/ NUS</p>
<p>Dr Nai Mui Ling Sharon mlnai@simtech.a-star.edu.sg</p>	<p>Powder-based additive manufacturing technologies (selective laser melting, electron beam melting and binder jet printing)</p> <p>Ceramic binder jet printing and binder development</p> <p>High performance metallic powders for additive manufacturing</p> <p>Polymer additive manufacturing technologies (selective laser sintering, fused deposition modeling, stereolithography)</p> <p>Polymeric powders, filament and resin for additive manufacturing</p>	<p>NTU/ NUS/SUTD</p>
<p>Dr Qi Guojun gjqi@simtech.a-star.edu.sg</p>	<p>Development of Chromate Free Coatings.</p> <p>Electrochemistry in Resource Recovery and Recycling.</p>	<p>NTU/ NUS</p>
<p>Dr Qi Xiaoying xyqi@SIMTech.a-star.edu.sg</p>	<p>Development of graphene-interconnected materials for optoelectronic applications.</p> <p>Development of functional inks based on two-dimensional materials.</p> <p>Development of photopolymerizable composites for 3D manufacturing.</p>	<p>NTU/ NUS</p>
<p>Dr Shan Xuechuan xcshan@simtech.a-star.edu.sg</p>	<p>Roll-to-roll Three Dimensional Manufacturing of Microstructures via Imprinting / Embossing Method.</p> <p>Large area processing and flexible printed electronics;</p> <p>Roll-to-roll processing;</p> <p>Material synthesis and process innovation for Printed electronics.</p>	<p>NTU/ NUS</p>

<p>Dr Sudesh Wijesinghe sudeshw@simtech.a-star.edu.sg</p>	<p>Corrosion characterisation by standard and advanced electrochemical and scanning techniques.</p> <p>Corrosion mechanisms of metal and alloys under tropical and accelerated exposure conditions.</p> <p>Investigation of protection and failure mechanisms of coatings used in different industrial / exposure applications.</p> <p>Corrosion evaluation test methodology development.</p>	<p>NUS</p>
<p>Dr Teo Wern Sze wsteo@simtech.a-star.edu.sg</p>	<p>Material-process-property Interactions for High Toughness Biocomposites from Natural Fibres and Polymeric Matrix Systems.</p>	<p>NTU/ NUS</p>

<p>Dr Tey Ju Nie jntey@SIMTech.a-star.edu.sg</p>	<p>Development of carbon based electrodes for energy device application. Carbon based nanocomposites.</p>	<p>NTU/ NUS</p>
<p>Dr Wang Xincai xcwang@simtech.a-star.edu.sg</p>	<p>Laser Annealing of Semiconductor Materials. Laser Machining of Hard-to-machine Materials such as WC, Glass, and Ceramic. Laser Surface Micro/Nano Texturing for Functional Surface Fabrication.</p>	<p>NTU/ NUS</p>
<p>Dr Wang Zhenfeng zfwang@simtech.a-star.edu.sg</p>	<p>Microfluidic/lab-on-a-chip devices and systems for biomedical , food and water testing applications. Design and fabrication of Microfluidic devies and components. Microfluidics and Lab-on-a-Chip system design automation Polymer microfabrication process for microfluidic device manufacturing</p>	<p>NTU/ NUS</p>
<p>Dr Wei Jun jwei@simtech.a-star.edu.sg</p>	<p>Development of Advanced Welding and Cladding Techniques. Development of High Performance Adhesive and Bonding Techniques. Development of Micro/Nanojoining Techniques.</p>	<p>NTU</p>
<p>Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg</p>	<p>Novel Two-dimensional Materials for High Intensity On-chip X-ray Generation</p>	<p>NTU/ NUS</p>
<p>Dr Yu Suzhu szyu@simtech.a-star.edu.sg</p>	<p>Functional Biodegradable Polymer Composites/ Nanocomposites. Biodegradable Polymer Films and Composites for Green Packaging Applications.</p>	<p>NTU</p>
<p>Dr Zhang Xinquan zhangxq@simtech.a-star.edu.sg</p>	<p>Ultra-precision Machining of Complex Optical Features Precision Optical Glass Molding Ultrasonic Vibration Assisted Machining of Ceramics</p>	<p>NTU/NUS</p>

Dr. Ko Jeong Hoon jhko@SIMTech.a-star.edu.sg	Adaptive machining dynamics for robotic profiling and finishing operation. Ultrasonic vibration assisted milling process for machining stability control and surface topography optimization. Nano-metric surface topography simulation and control for ultra-precision machining.	NTU/ NUS
Dr Tan Yong Teck tanyongt@simtech.a-star.edu.sg	Corrosion Protection Against Galvanic Corrosion of Dissimilar Materials Hybrid Structures	NTU/ NUS
Dr Florencia Edith Wiria florencia@SIMTech.a-star.edu.sg	3D Printing of Multimaterial Polymer and Polymer-matrix Composites, New Material Investigation for 3D Printing of Polymer and Polymer-based Composites	NUS/NTU/SUTD
Dr Suwat Jiratharanat suwatj@simtech.a-star.edu.sg	Development of die-less forming technology for high-temp sheet metal alloys	NUS/NTU/SUTD
Dr Wang Zhongke zkwang@simtech.a-star.edu.sg	Laser microprocessing of glasses substrates for electronics Laser microprocessing of silicon substrates for electronics Laser micromachining of LED substrates for lighting devices	NUS/NTU/SUTD
Dr Stefanie Feih feih@simtech.a-star.edu.sg	Hybrid joining of carbon fibre thermoplastic composites and metallic inserts	NUS/NTU
Dr Mikhail Kovalev mikhail_kovalev@SIMTech.a-star.edu.sg	Ink development for inkjet printing process	NUS/NTU/SUTD
Dr Chng Shuyun sychng@SIMTech.a-star.edu.sg	Nanoparticles as Controlled Release Carriers in Coating	NUS/NTU/SUTD
Dr Huang Hui hhuang@SIMTech.a-star.edu.sg	Functional material synthesis, formulation and applications; Energy conversion and storage (e.g. thin film solar cell, supercapacitor and batteries.)	NUS/NTU/SUTD
Dr Dong Xuecheng xcdong@simtech.a-star.edu.sg	Magnesium alloys and surface treatment for lightweight in transport and aerospace	NUS

Environmental Life Cycle Assessment

Name	Project	Degree By
Dr Jonathan Low Sze Choong sclow@simtech.a-star.edu.sg	Techniques and Algorithms for Matching Waste-to-Resources Agent-based Models for Industrial Symbiosis Simulation Rapid Life Cycle Analysis and Knowledge-based System for Sustainability Management	NUS
Dr Song Bin bsong@simtech.a-star.edu.sg	Cyber-physical System with Embedded Machine Learning for Energy-aware Production Approach and Methods for Achieving Optimized Energy Efficiency in a Factory Applications of Machine-learning for Resource-efficient Manufacturing	NUS

Bio-Manufacturing Technologies and Platforms

Name	Project	Degree By
Dr Choudhury Deepak deepakc@simtech.a-star.edu.sg	Development of bioprinting processes & platforms Cellular agriculture – Development of processes/platforms for production of agricultural products from cell cultures	NTU/NUS
Dr May Win Naing winnaingm@simtech.a-star.edu.sg	Proof-of-Concept Bio-Manufacturing of Recombinant Human Collagen	NUS
Dr Derrick Yong derrick-yong@SIMTech.a-star.edu.sg	Label-free Spectroscopy and Chemometrics for Cell Monitoring AI-aided Hyperspectral Imager for Food Safety and Inspection	NTU/NUS

Microfluidics and Lab on Chip Technology

Name	Project	Degree By
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Dr Wang Zhiping zpwang@simtech.a-star.edu.sg	Microfluidics for Diagnostic Applications Organ on Chip Microfluidics design and manufacturing technologies	NTU/ NUS
Dr Wu Ruige rgwu@simtech.a-star.edu.sg	1-step sample preparation module for low cost molecular diagnostics	NUS/NTU/SUTD
Dr Charles Wang Wei wwang@simtech.a-star.edu.sg	Droplet microfluidics for bio-medical applications (e.g. Digital PCR for nucleic detection;) Microfluidic based IEF separation of protein (e.g. Hemoglobin) for disease screening (e.g. thalassemia); Microfluidics and Lab-on-a-Chip system development (e.g. Rapid, sensitive, and highly specific PCR-based detection of pathogen on microfluidic chip;)	NUS/NTU/SUTD

Micro-Electro-Mechanical Systems

Technology, Sensors and Detectors

Name	Project	Degree By
Dr Teo Chek Sing csteo@simtech.a-star.edu.sg	Precision Motion Control Strategies in Roll-to-Roll System	NUS
Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg	Chip-scale Optomechanical Devices for High-efficiency High Harmonic Generation	NTU/ NUS
Dr Huang Hui huang@SIMTech.a-star.edu.sg	Materials and device fabrication for sensors	NUS/NTU/SUTD

Attosecond Physics & Photonics

Name	Project	Degree By
Dr Li Hao hli@simtech.a-star.edu.sg	Tabletop Coherent X-ray Sources Using High Order Harmonics	NTU

Electronics & Photonics

Name	Project	Degree By
Dr Ng Boon Ping bpng@simtech.a-star.edu.sg	Free-form Optics Design and Fabrication	NTU
Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg	Miniaturizing the Large Hadron Collider with Optics	NTU/ NUS
Dr Wang Zhongke	Laser sigulation of electronic chips	NUS/NTU/SUTD
Dr Huang Hui	Electroluminescent materials and devices; Flexible, wearable and printable electronics and devices	NUS/NTU/SUTD

Computational Fluid Dynamics or Computational Mechanics

Name	Project	Degree By
Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg	Plasma-driven High-gradient Electron Acceleration	NTU/ NUS
Dr Song Xu xsong@simtech.a-star.edu.sg	Novel unit cell design through numerical simulation for flexible lightweight honeycomb structure	NTU/ NUS
Dr Stefanie Feih feih@simtech.a-star.edu.sg	Design optimization for additive manufacture	NTU/ NUS
Dr Chew Youxiang chewyxiang@simtech,a-star.edu.sg	Simulation and development of joining of metal to polymeric materials Coupled thermal-fluid dynamics and residual stress simulation in welding and additive manufacturing Microstructure simulation for welding and additive manufacturing Prediction of material properties of additvely manufactured parts	NTU/ NUS

Computational Material Sciences

Name	Project	Degree By
Dr Wong Liang Jie wonglj@simtech.a-star.edu.sg	Numerical Theory and Algorithms for Design of Efficient X-ray Photonic Devices	NTU/ NUS

Dr Mikhail Kovalev mikhail_kovalev@SIMTech.a-star.edu.sg	Modelling of nanomaterials synthesis	NUS/NTU/SUTD
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3D Computed Tomography

Name	Project	Degree By
Dr Liu Tong tliu@simtech.a-star.edu.sg	Scattering-free Industrial Helical Computed tomography	NTU

Sustainable Manufacturing

Name	Project	Degree By
Dr Lau Soo Khim lausk@SIMTech.a-star.edu.sg	Development of biodegradable polymers and/or recycled plastics for extrusion foaming process.	NUS/NTU