

Institute of Bioengineering and Nanotechnology (IBN)

**Nanomedicine**

<b>Name</b>	<b>Project</b>	<b>Degree By</b>
Dr KURISAWA Motoichi mkurisawa@ibn.a-star.edu.sg	Injectable biodegradable hydrogels and micellar nanocomplexes for drug delivery/tissue engineering.	NTU / NUS
Dr WANG Shu Adj A/Prof at FOS, NUS swang@ibn.a-star.edu.sg	Stem cells for cancer gene therapy and cancer immunotherapy. Insect baculovirus to combat human cancer.	NUS
Dr Yi-Yan YANG Adj A/Prof at FOS, NUS yyyang@ibn.a-star.edu.sg	Codelivery of genes/proteins and small drug molecules for targeting cancer stem cells using biocompatible polymer nanocarriers.  Targeted delivery of multiple anticancer drugs using biodegradable functional polymer nanoparticles to prevent metastasis and relapse.  Development of cationic amphiphilic polymers/short synthetic peptides as antimicrobial agents to overcome multidrug resistance.	NTU / NUS

**Cell and Tissue Engineering**

<b>Name</b>	<b>Project</b>	<b>Degree By</b>
Dr William Sun wsun@ibn.a-star.edu.sg	Stem cell differentiation and direct reprogramming for generating specific cell types. Antibody engineering for targeted delivery of macromolecules. Bioengineering for ophthalmological applications. Cardiac tissue engineering for regenerative medicine.	NTU / NUS
Dr WAN Chwee Aun Andrew awan@ibn.a-star.edu.sg	Fiber-based matrices for 3D cell culture and tissue engineering.	NTU / NUS
Dr Shigeki SUGII shigekis@ibn.a-star.edu.sg	1. Molecular understanding of adipose-derived stem cells for clinical applications 2. Stem cells and novel synthetic biology (collaboration)	NUS
Dr. YU Hanry Adj Prof at YLLSOM, NUS hyu@ibn.a-star.edu.sg	Quantitative pathology with advanced microscopy technologies. Development of in vitro toxicity testing platforms with micro-tissue constructs. Micro-tissue fabrication factory to precisely engineer inter-cellular epithelial tissue structures. Maturation of stem-cell differentiated cells for drug testing applications. Macromolecular therapeutics/nanomedicine for treatment of multidrug-resistant tuberculosis mycobacterial infections.	NUS

### **Biodevices and Diagnostics**

<b>Name</b>	<b>Project</b>	<b>Degree By</b>
Dr. LEE Su Seong sslee@ibn.a-star.edu.sg	Development of protein capture agents for biomarkers.	NTU / NUS
Dr. TAN Min-Han Adj Ast/Prof at 1) Duke-NUS GMS 2) SSHSPH, Clinical Senior Lecturer, YLLSOM, NUS mhtan@ibn.a-star.edu.sg	Circulating tumor cells as noninvasive evaluation of outcomes in cancer. Genetic determinants of outcomes of cancer therapeutics. Induced pluripotent stem cells as ex vivo toxicology models.	NUS
Ichiro HIRAO ichiro@ibn.a-star.edu.sg	Novel synthetic biology: genetic alphabet expansion toward diagnostic and therapeutic applications	Nil

### **Green Chemistry and Energy**

<b>Name</b>	<b>Project</b>	<b>Degree By</b>
Dr. ZHANG Yugen ygzhang@ibn.a-star.edu.sg	New catalysis in green chemistry and sustainable energy. Development of novel heterogeneous catalysts and their application in organic synthesis.	NTU / NUS