

## Bioprocessing Technology Institute (BTI)

No.	Department	A*STAR Supervisor's Name	Designation	Email	Project Title	Project Description	Degree Awarded By Upon Graduation	Website Link (if any)
1	Microbial Cells	Dr Ow, Siak Wei Dave		dave_ow@bti.a-star.edu.sg		Synthetic and Systems Biotechnology of Microbial Cells. Engineering and Application of Phages. Enzymes and Antibody Fragments. Understanding and Overcoming Microbial Stress Response during Bioprocesses.	NUS/NTU/SUTD	
2	Animal Cell Technology	Dr Ng Say Kong		ng_say_kong@bti.a-star.edu.sg		Recombinant protein expression and production in mammalian cells. Cell culture media and bioreactor process development. Development of anti-microbials.	NUS/NTU/SUTD	
3	Animal Cell Technology	Dr Yang Yuansheng	Adj Ast/Prof at SCBE, NTU	yang_yuansheng@bti.a-star.edu.sg		Vector design, cell line development, cell engineering, and bioprocess development to enhance production of recombinant protein production in mammalian cells.	NUS/NTU/SUTD	
4	Expression Engineering	Dr Song Zhiwei	Adjunct Associate Professor, Biochemistry, NUS	song_zhiwei@bti.a-star.edu.sg		Glycosylation of recombinant protein drugs and Glycoengineering of CHO cells with different genome editing tools Glycobiology: Structure, function and localization of nucleotide sugar transporters and glycosyltransferases. Developing cell lines to produce follow-on biologics such as therapeutic antibodies	NUS/NTU/SUTD	

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5	Stem Cells	Dr Andre Choo	Adj Ast/Prof at FOE, NUS	andre_choo@bti.a-star.edu.sg		Generation and characterization of novel monoclonal antibodies to cell surface markers on stem cells, progenitor cells and cancer cells (Antibody Discovery Platform).	NUS/NTU/SUTD	
6	Stem Cells	Dr Steve Oh	Adj A/Prof at SCBE, NTU	steve_oh@bti.a-star.edu.sg		Novel up- and down-stream bioprocessing for cell and gene therapies. CRISPR engineering cells and novel delivery for cell therapies.	NUS/NTU/SUTD	
7	Metabolomics	Dr Ho Ying Swan		ho_ying_swan@bti.a-star.edu.sg		Metabolic profiling/metabolomics studies of mammalian cell lines to further understanding of intracellular metabolic processes and their impact on recombinant protein.	NUS/NTU/SUTD	
8	Transcriptomics	Dr Andy Tan		andy_tan@bti.a-star.edu.sg		(1) Engineering of immune cells for cancer immunotherapy (2) Role of immune cell subsets in immune and autoimmune responses (3) Genetics and transcriptomics studies of cells of high industrial and commercial interest, e.g. Chinese Hamster Ovary (CHO), human, animal cells for bioproduction of biologics; development of know-how to grow cultured meat (4) Role of gut microbiome in food and nutrition	NUS/NTU/SUTD	

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9	Proteomics	Dr Bi Xuezhi	Adjunct Associate Professor, Duke-NUS Medical School	bi_xuezhi@bti.a-star.edu.sg		Biotherapeutics product quality attributes (CQAs) and bioprocessing parameters characterisation by mass spectrometry Application of proteomic technologies in alternative proteins as food and nutrition	NUS/NTU/SUTD	
10	Downstream Processing	Dr Wei Zhang		zhang_wei@bti.a-star.edu.sg		Downstream process development for the production of novel biotherapeutics	NUS/NTU/SUTD	
11	Sytems Biology	Dr Meiyappan Lakshmanan		meiyappan_lakshmanan@bti.a-star.edu.sg		Advancing mammalian bioprocess development using computational systems biology approaches Application of computational modeling to understand mammalian metabolism, protein synthesis/secretion and glycosylation for accelerating production of biotherapeutics, cell therapy and cultured meat	NUS/NTU/SUTD	
12	Biomanufacturing Technol	Dr Shireen Goh		shireen_goh@bti.a-star.edu.sg		Modelling novel phenomenon in Inertial Microfluidics using COMSOL Multiphysics Development of commercializable microfluidic devices for Biomanufacturing of the future	NUS/NTU/SUTD	

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13	Bio manufacturing Technol	Dr David Yeo		david_yeo@bti.a-star.edu.sg		Roller printing production of bio-active material coatings for wound healing, regenerative medicine and agri-technology applications.	NUS/NTU/SUTD	
14	Bio manufacturing Technol	Dr Deepak Choudhury		deepak_choudhury@bti.a-star.edu.sg		Scaffolds for manufacturing of cultured meat products Bio manufacturing process and platform development for extraction of extracellular matrix from mammalian cells, animal tissues, plants, fungi and algae Development of processes/platforms for the production of agricultural products from cell cultures (Cellular agriculture)	NUS/NTU/SUTD	
15	Bio manufacturing Technol	Dr Liu Dan		Liu_dan@bti.a-star.edu.sg		<ol style="list-style-type: none"> <li>Separation technologies for cells and cell derived materials <ul style="list-style-type: none"> <li>How to separate different cell subpopulations from a heterogeneous cell group continuously and efficiently without compromising the cell qualities?</li> <li>How to separate the cellular materials without labelling and in high throughput?</li> </ul> </li> <li>Adaptive homogenization model of cell culture in suspension <ul style="list-style-type: none"> <li>How to design the homogenization mechanism that enables effective mixing to cell suspension, yet minimizes interference to natural growth status of the cells?</li> <li>How to adapt the homogenization process to the constantly changing cell conditions?</li> </ul> </li> <li>Biomass sensing and monitoring for 3D cell culture in suspension <ul style="list-style-type: none"> <li>How to adapt the homogenization process to the constantly changing cell conditions?</li> <li>How to effectively sense and monitor long term 3D culture in suspension?</li> <li>How small can we make such sensors?</li> </ul> </li> </ol>	NUS/NTU/SUTD	