

Research, Informatics and Graduate Studies

<https://sites.qtiit.edu.cn/research/positions/qs-2022006/>

PhD/Master (MSc) Positions in Synthetic Biology and Intelligent Control (GS-2022006) – Group of Assoc. Prof. Peng Xu

Description

The Chemical Engineering Program (Group of Peng Xu), Synthetic Biology and Intelligent Control Laboratory (SBIC-Lab, <http://sbiclab.com>), is looking for 3-4 PhD/MS students to pursue their graduate study in:

- Metabolic Engineering / Green manufacturing
- Synthetic Biology / Bio-Intelligence and bio-computing
- Feedback control theory / Biochemical reaction network
- Bio-mathematical modeling / Microbiome interactions

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Contract duration: 2 years for MS, 3 + 1 years for PhD.

About the University

Guangdong Technion – Israel Institute of Technology (GTIIT) is a satellite university of Technion – Israel Institute of Technology, located in Shantou, China. Technion is world-renowned for its exceptional research and education. Since 2004, three faculty members in Technion received the Nobel prize, consistently ranked as a top-100 university (ARWU-Shanghai Ranking).

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About the Group ????????

Prof. Xu has interacted with international research teams and thought-leaders in the past 10 years to solve challenges in health, medicine, energy and environment. Professor Xu joined GTIIT, as an Associate professor of Guangdong-Technion Chemical Engineering program in Fall 2021. He was an Assistant Professor at the Department of Chemical, Biochemical and Environmental Engineering at University of Maryland Baltimore County from 2016 to 2020. He obtained his PhD in Chemical and Biological Engineering from Rensselaer Polytechnic Institute (2013) and completed his postdoc training in the Stephanopoulos lab at MIT (2016).

Dr. Xu has received a number of awards and recognitions, including the Chinese Government Award for Outstanding Self-Financed Students Abroad (2012), the Bill & Melinda Gates Foundation Award (2018), the Biotechnology & Bioengineering (B&B) Daniel IC Wang Award (2020), the Biochemical Engineering Journal Young Investigator Award (2021) and the NSFC Excellent Young Scientist Award (2022). He served in the editorial board for the journal *Metabolic Engineering* (IF = 9.7) and *Current Opinion in Biotechnology* (IF = 9.4), as the Associate editor for *BioDesign Research*. Professor Xu published more than 85 journal articles with a

Position

PhD/Master

Program

Chemical Engineering

Research Area

Metabolic Engineering / Green manufacturing

Synthetic Biology / Bio-Intelligence
and bio-computing

Feedback control theory /
Biochemical reaction network

Bio-mathematical modeling /
Microbiome interactions

Contact

Assoc. Prof. Peng Xu

Email: peng.xu@atiit.edu.cn

Web Page Link

Date posted

March 7, 2022

Location

Guangdong Technion – Israel
Institute of Technology (GTIIT),
China & Technion-Israel Institute of
Technology, Israel.

Fees & Finance

How to Apply

google scholar citation of 4440 and an H-index of 33, on world-leading journals including *Nature Biotechnology*, *Nature Communications*, *Nature Chemical Biology*, *PNAS*, *Trends in Biotechnology*, *Metabolic Engineering*, *Biotechnology & Bioengineering*, *Current Opinion in Biotechnology* and *ACS Synthetic Biology* et al.

Project Details

The SBIC-Lab, led by Professor Peng Xu, focuses on applying chemical engineering analysis, control theory, molecular tools and computational models to decode biological intelligence, drive the convergence of synthetic biology and artificial design for green manufacturing, better health and medicine. The research team will focus on (1) Decoding biological intelligence for cellular design and computation; (2) Microbial metabolic engineering for manufacturing value-added compounds; (3) Understanding the interplay of antimicrobial resistance and gut microbiota; (4) Microbiome, natural products and precision medicine *et al.*

The research topics of the positions include:

- Chemical biology, molecular biology and genetic engineering;
- Feedback control theory, gene circuits and bio-intelligent design;
- Bio-computing based on biochemical reaction network;
- Yeast genome engineering and genome evolution;
- Natural product synthesis and human/animal gut health;
- C1 feedstock utilization.

Keywords

Synthetic biology, Metabolic engineering, Intelligent control, Biocomputing, Natural Products, Human Microbiome, Biochemical reaction network, Molecular Biology, Microbiology, Medicine, Oleochemicals, Sustainability, Health, Artificial Intelligence, Computational modeling

Selection Criteria

- BS degree or MS degree in Chemical Engineering, Bioengineering, Biotechnology, Chemistry, Microbiology, Chemical Biology, Mathematical Biology, Molecular biology, Control theory or Machine learning
- Strong background in biochemistry and molecular biology (essential)
- Strong interest in synthetic biology and metabolic engineering (preferred)
- Strong skills in both experimental work and computational simulations (preferred)
- Good communication skills, both presentation and writing (essential)
- Ability to explore unknowns, think out of box, work independently as well as in a dynamic team environment
- Self-motivated, curiosity-driven, ready to explore unknowns and face challenges

We work in a collaborative English-speaking environment. The selected graduate students will have opportunities for: (1) international collaborations and conference travel to interact with world experts in China, Europe and the United States; (2) industrial partnership and professional development; (3) communication skills training on presentation and writing; (4) publishing original scholarly articles on high impact journals.

Application Procedures

- MS Application deadline: **10 April, 2022**
- **PhD Application deadline: Any time in the year**
- Send required documents electronically to: peng.xu@gtiit.edu.cn

- The PhD candidate must fulfill the requirements for admission to the Technion Graduate School and needs to comply with its regulations leading to the PhD/Master degree: <https://graduate.technion.ac.il/en/prospective-students/>
- Google Scholar page: <https://scholar.google.com/citations?user=vqLnxtEAAAAJ&hl=en>
- Are you seeking a firm footing to change the world with biology, chemistry and engineering? Please don't hesitate to contact Prof. Xu (peng.xu@gtiit.edu.cn) inquiring the positions in SBIC-Lab @ GTIIT.