Master of Electronic Information
Biomedical Engineering

The Biomedical Engineering Master's program applies modern approaches from engineering science and medicine fields with theoretical and computational methods from mathematics and computer science, to provide solutions for life and health problems of fundamental importance.

The Biomedical Engineering (BME) program began as an MS program in 1979 at Tsinghua University. BS and PhD programs were added in 1982 and 1986 respectively. In 2010, building on the strengths and opportunities of the Greater Bay Area and the high-tech medical industry in Shenzhen, the program launched in Tsinghua Shenzhen International Graduate School (Tsinghua SIGS) as a 3-year Master's and 4-year Ph.D. program. The program is not only widely recognized for producing high quality and high-level technical students but is also strongly connected to opportunities and technological support in Shenzhen and the Greater Bay Area.

Objectives of the BME Program are 1) to pursue innovative research on the foundation and application in the area of biomedical engineering, 2) to develop innovative medical instrumentations and biomedical applications of fundamental research outcomes, 3) to train leaders in biomedical engineering research and innovations.

Research

Our research aims to understand physiological mechanisms of the human body, and to develop methodologies and techniques to diagnose, treat and rehabilitate major human diseases and dysfunctions.
Research areas include:
1) Acoustic and Optical detection and imaging
2) High flux dynamic measurement
3) Digital diagnosis and treatment
4) Micro/Nano medicine and tissue engineering
5) Medical devices
6) Biomedical Big Data
7) Application of AI in medical field, etc.

Faculty & Instructors

Supervisors	Research Topics
Weiqiang Liu	Biomechanics / Implant and interventional devices / Biomedical materials
Jian Wu	Minimally invasive surgery technology / Surgical navigation / Medical image processing and biomedical measurement technology
Tian Guan	Hearing Rehabilitation / Optical Weak Measurement / Biomedical Image Processing

Kehong Yuan	AI Methods in medical field / Interpretability of AI Methods in medical field
Hui Ma	Polarized photon scattering / Mueller microscopy
Yonghong He	Optical weak measurement technology and its application in bio-molecular detection / High throughput liquid biochip detection technology and its application development / Optical coherence tomography (OCT) image detection technology
Shuqing Sun	Flexible Electronics / Ultrosensitive and high-throughput optical biosensing / Microneedle array based transdermal drug delivery
Nan Zeng	Polarization optical innovative technology and method / New application in biomedical and environmental fields
Honghui He	Polarization imaging techniques and data analysis / Biomedical applications of polarization imaging techniques

Contact Information

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