

Hội nghị Khoa học Quốc tế lần 1 – 2024
Y tế thông minh, chiến lược phát triển y tế chuyên sâu trong hiện tại và
tương lai

BIOMEDICAL ENGINEERING IN VIETNAM

Vietnam National Universities - HCMC
International University
School of Biomedical Engineering



Computing
Accreditation
Commission





Overview





SCHOOL OF BIOMEDICAL ENGINEERING (BME)

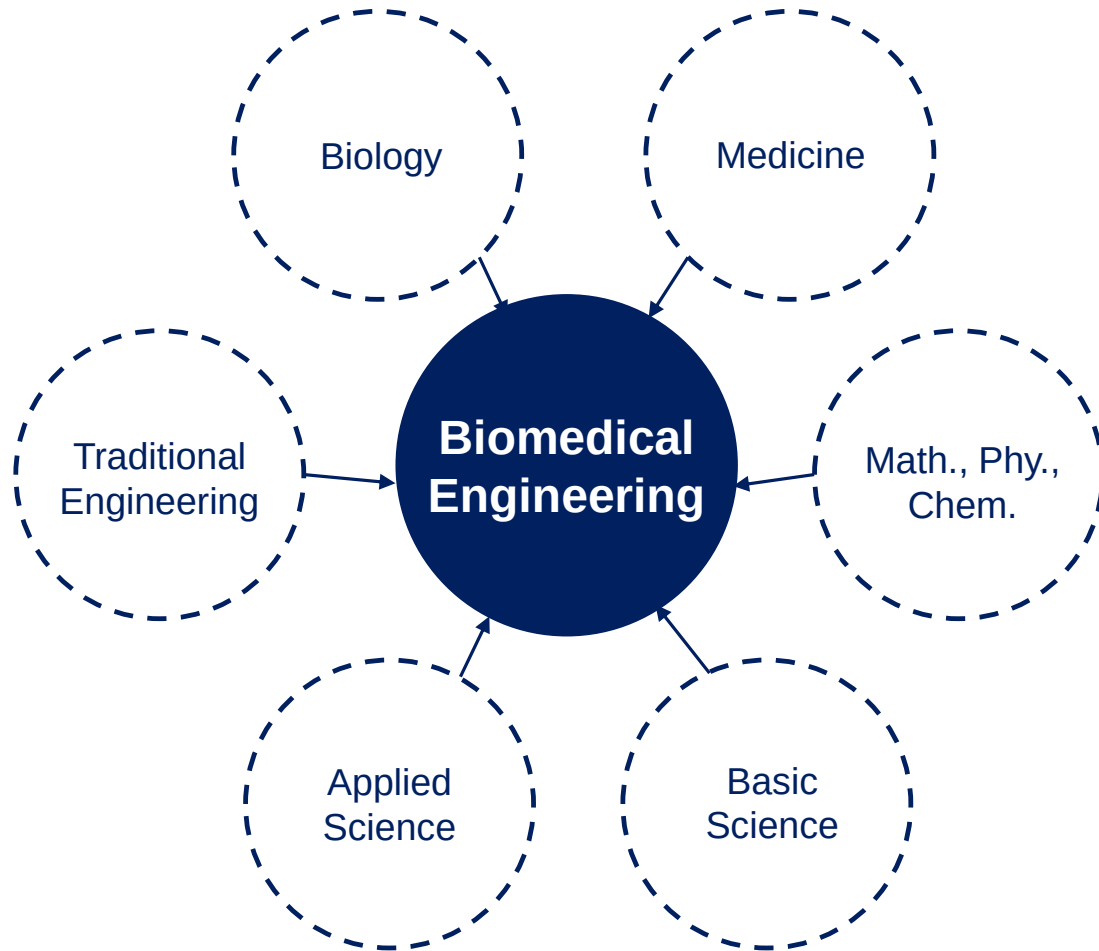
BME is an emerging **multidisciplinary field** that involves the applications of **state-of-the-art technology** to the **creation** of new **methodologies** and **devices** for **human welfare** and for a better **understanding** of **human biological processes**.

- According to NIH -

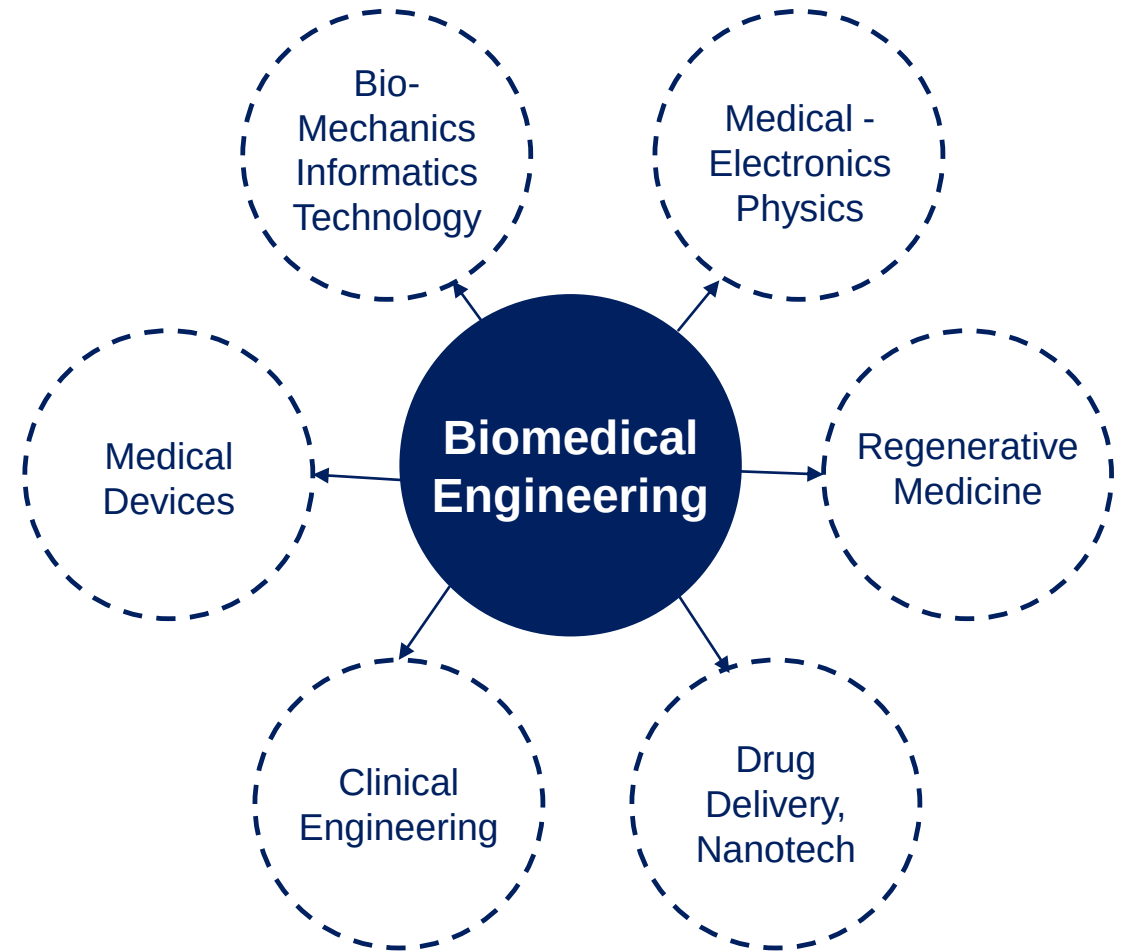


SCHOOL OF BIOMEDICAL ENGINEERING

MULTIDISCIPLINARY FIELD



SUB - FIELDS



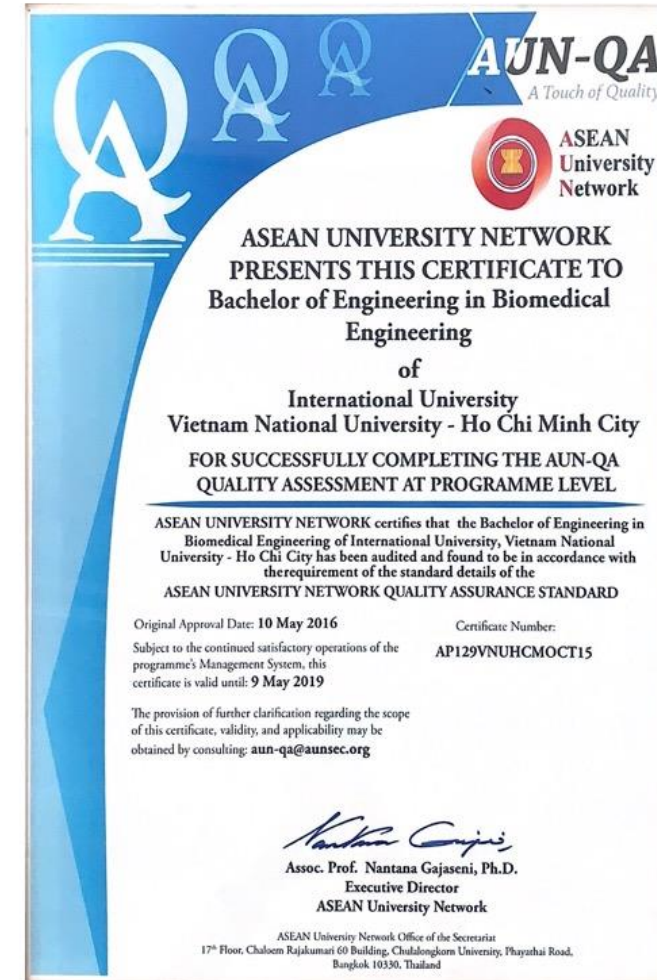


HISTORY OF BME

- ❖ **Mars 2009:** Creation of the BME Department
- ❖ **Aug. 2009:** BME undergraduate degree was established and accredited, the first of this name in the country
- ❖ **Jan. 2013:** Establishment of BME Master's Degree Program
- ❖ **Oct. 2015:** AUN-QA accredited and ranked us 1st in the country, 2nd in ASEAN
- ❖ **Aug. 2019:** ABET accreditation
- ❖ **Aug. 2019:** Establishment of School of BME
- ❖ **Oct. 2019:** Establishment of Ph.D. Degree Program

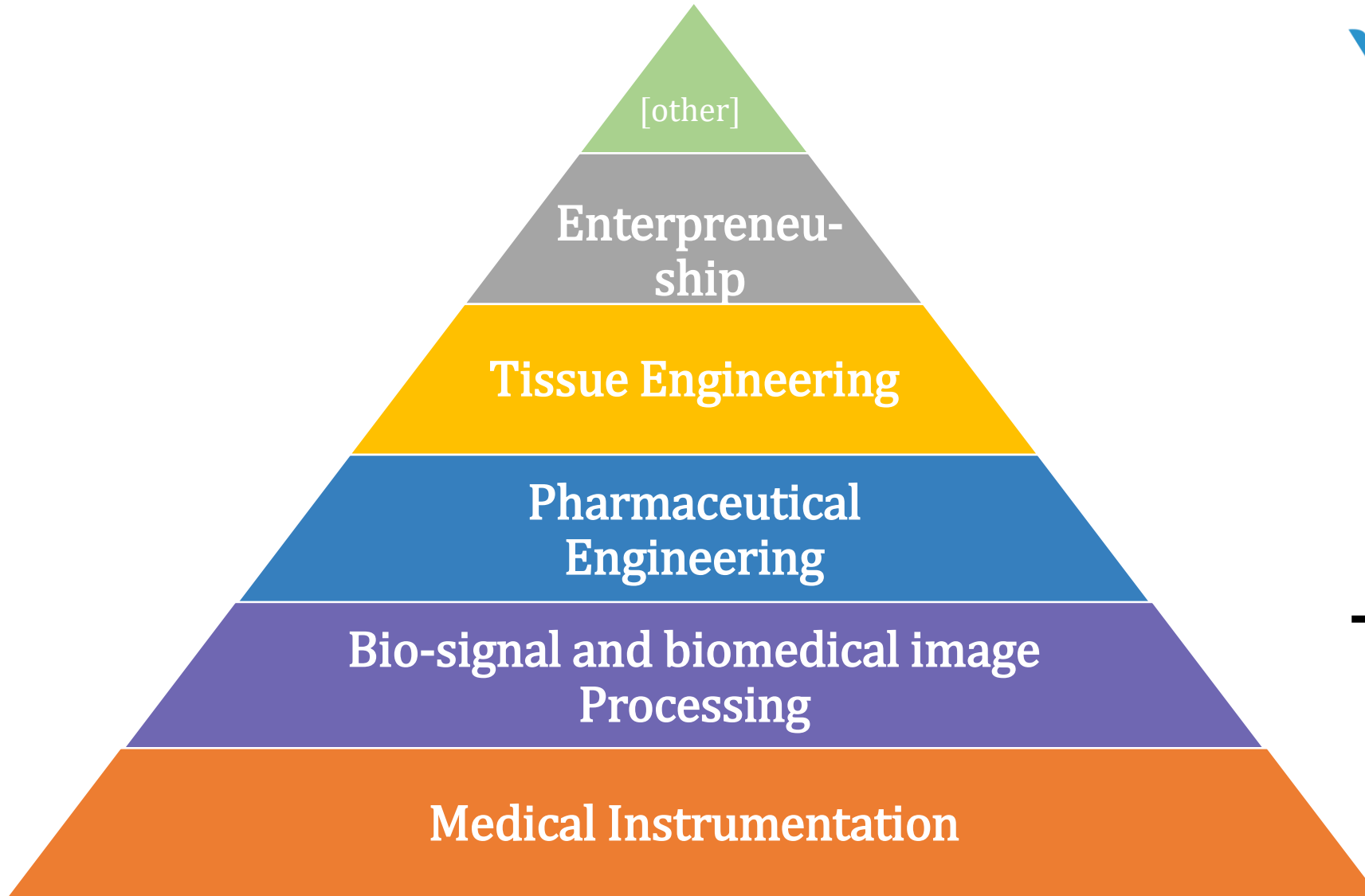


Accreditation Board for Engineering and Technology (ABET)



AUN-QA (ASEAN University Network - Quality Assurance)

BME Orientations



Motto

- High quality
- Sustainability
- Usefulness

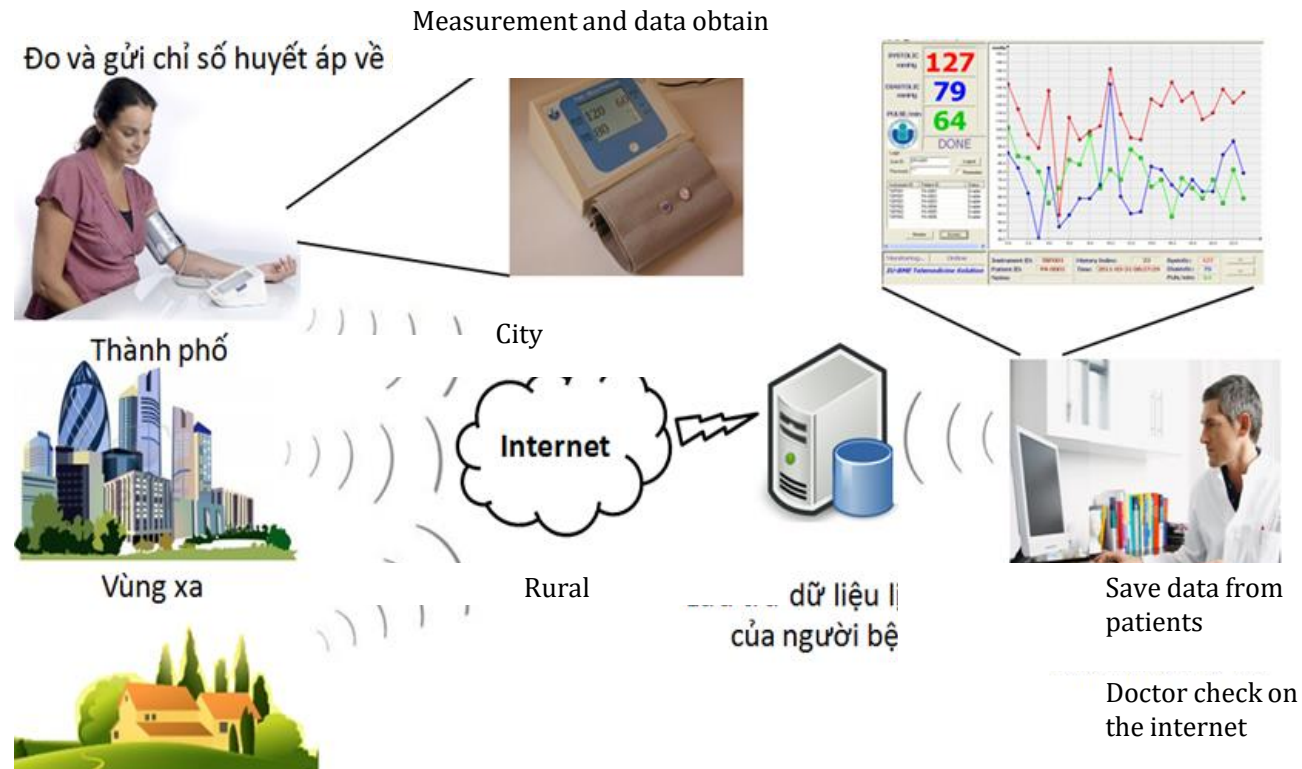


Supportive environment to recruit high-quality personnel and foster diverse research orientations



Department of Medical Instrumentation

Telemedicine



Prof. Võ Văn Tới
Email: vvtoi@hcmiu.edu.vn



Blood pressure holter





Ngoc-Bich Le, Ph.D

Follow me on RS: https://www.researchgate.net/profile/Ngoc-Bich_Le

Design of Medical Instrumentation

Research focus



Robotics for healthcare



Wearable devices



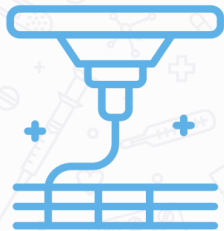
Biomechanics



Computer vision and
AI for healthcare



Rehabilitation devices



3D Bioprinter



E-Wheel chair transformer

- Convert manual wheelchair to e-wheel chair
- Quick installation
- Safety functions: object detection, falling detection, GPS tracking,...
- Competitive price



Patient assist mobile robot

- Toilet activity assist
- Daily activities locomotion
- Control modes: Manual, automatic, remote
- Competitive price



Multifunction self-driving mobile robot

- Medication dispensing and delivery
- Sterilization
- Technologies: Self-mapping, self-navigating, automatic object detection and avoiding
- Competitive price



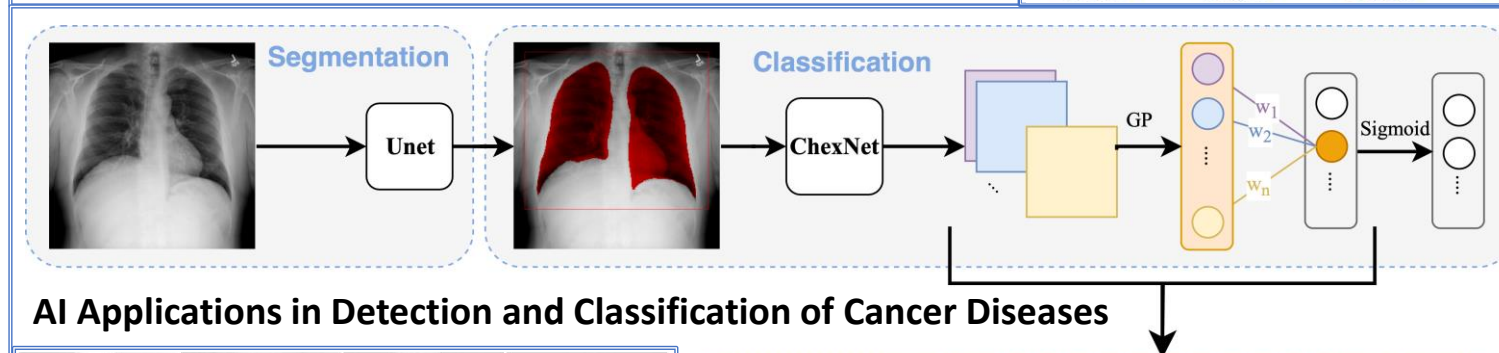
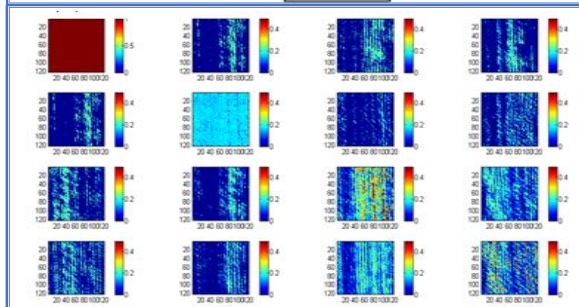
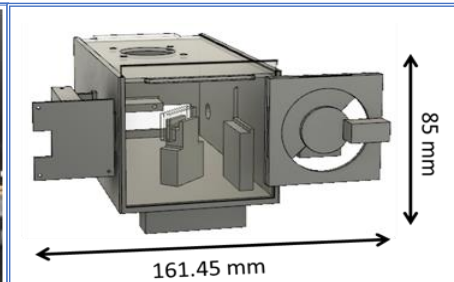
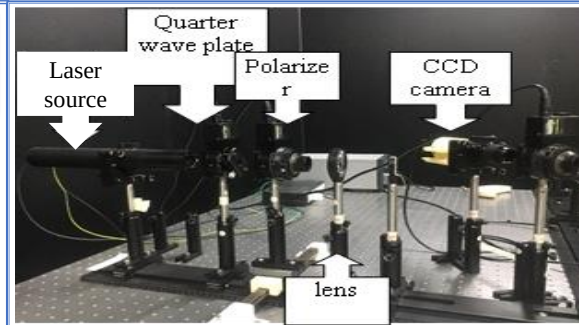
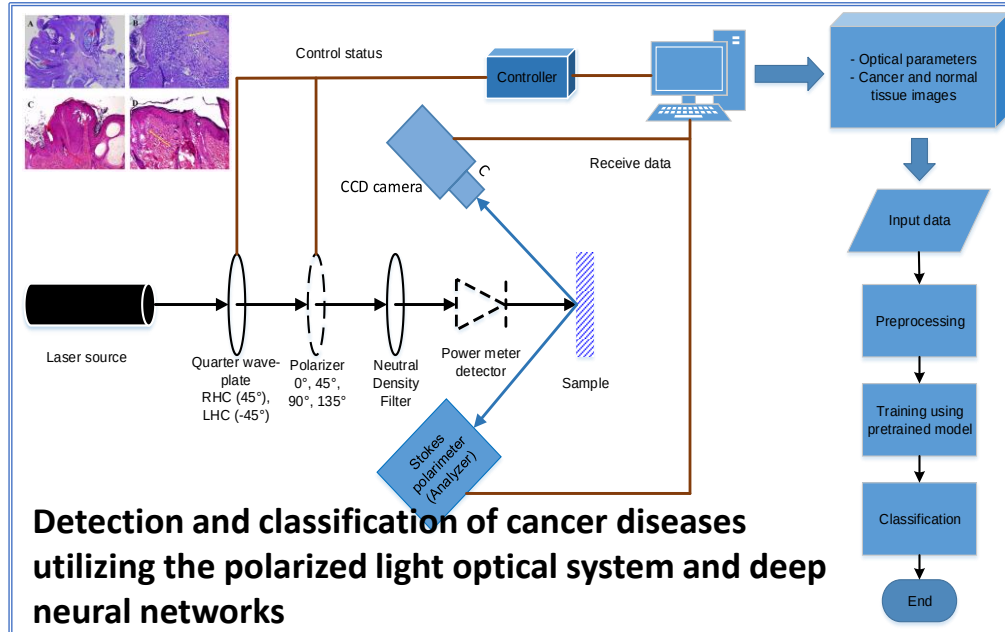
Hand rehabilitation

- Portable
- Pneumatic soft actuation
- Movements sensing and evaluation
- Low cost
- Simple to use

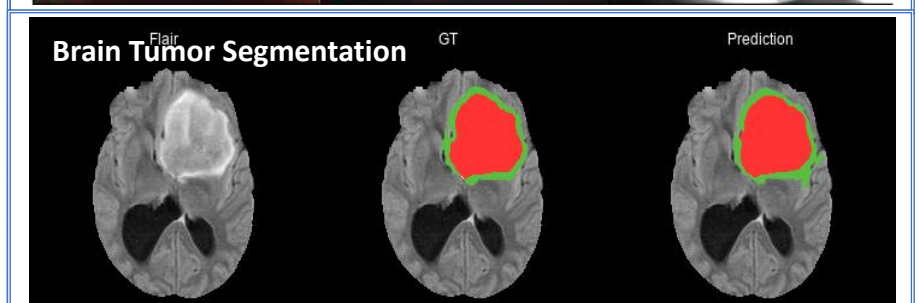
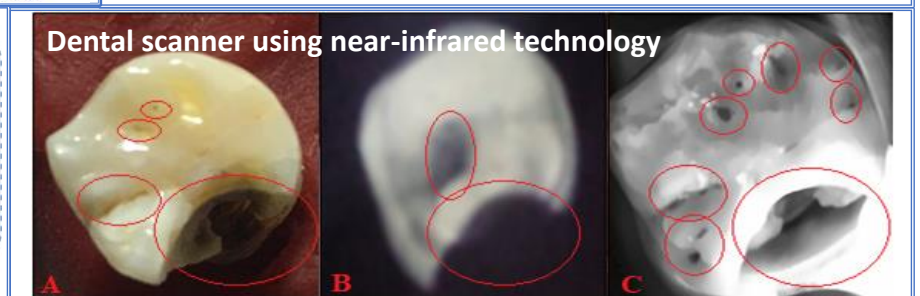
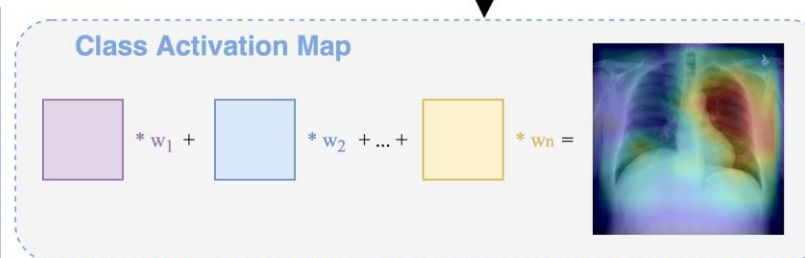
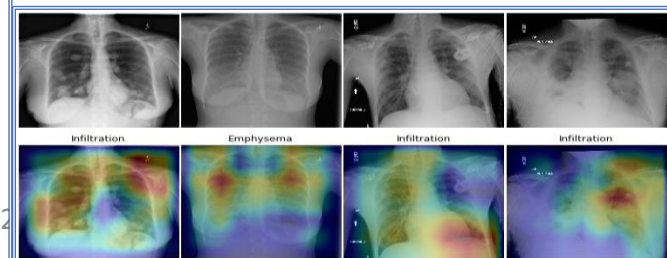


Knee joint rehabilitation

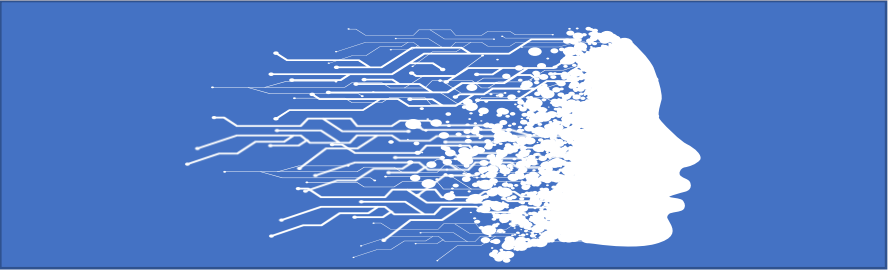
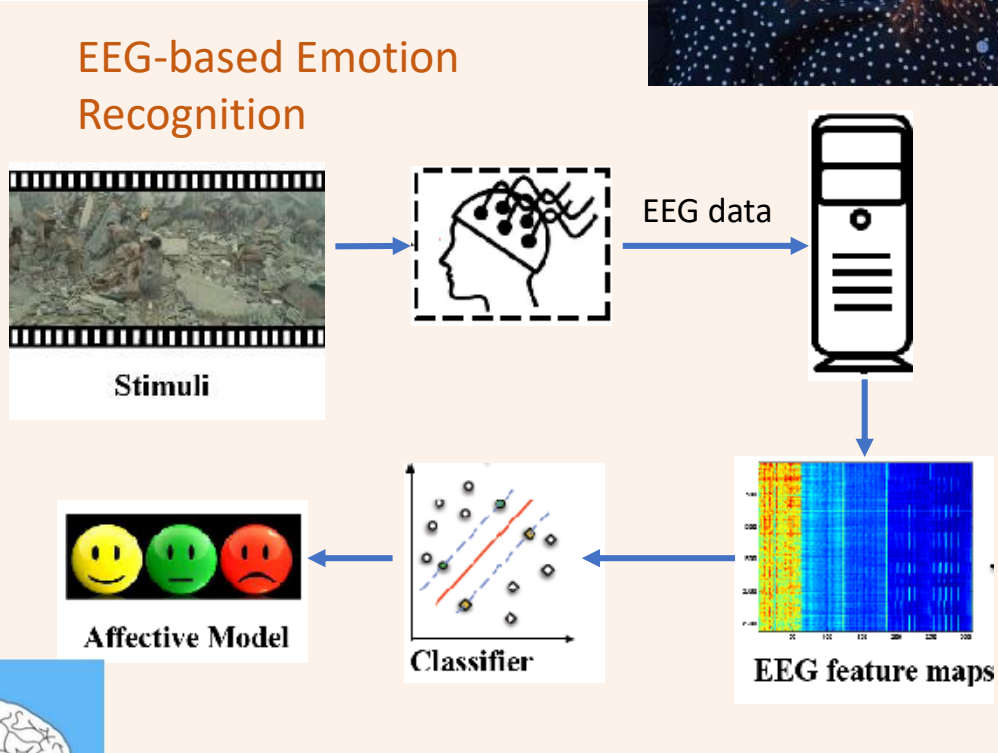
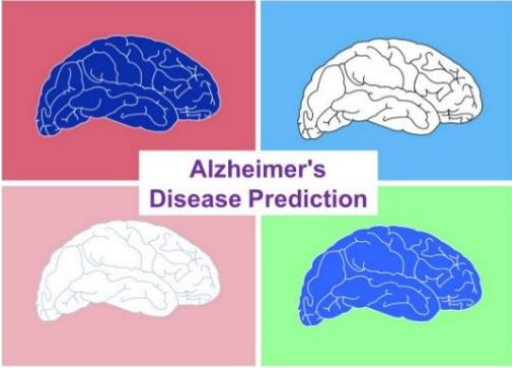
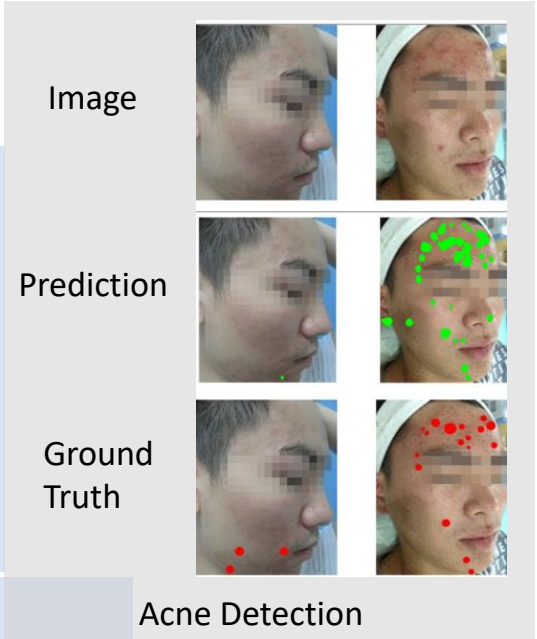
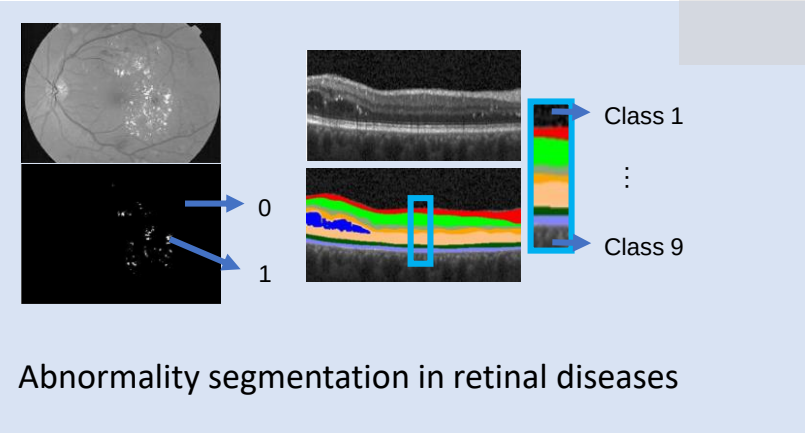
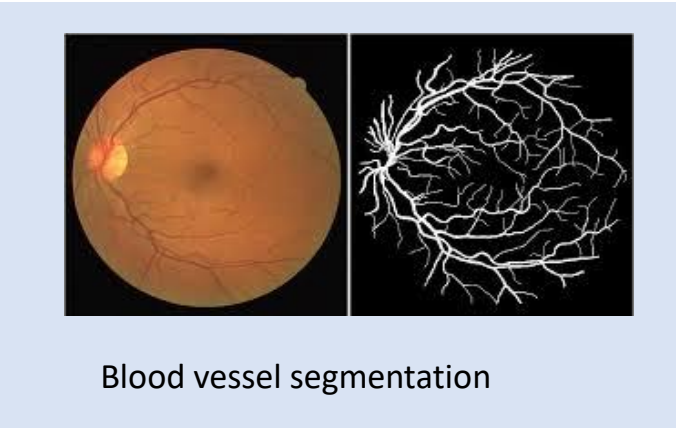
- Portable
- Comfortable
- Multi-modes
- Low cost
- Simple to use



AI Applications in Detection and Classification of Cancer Diseases



Image/Signal Processing using Artificial Intelligence (AI)



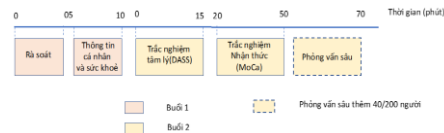
__ NEUROENGINEERING: BRAIN HEALTH LAB __

DEVELOPING DIAGNOSIS AND INTERVENTION FOR ALZHEIMER'S DISEASE

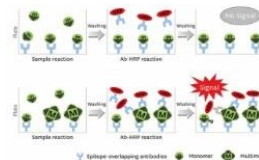
(1) AI analysis for Alzheimer's disease



(2) Survey on mental health problems of Vietnamese elderly (GCRF)



(3) Alzheimer Molecular Diagnostic

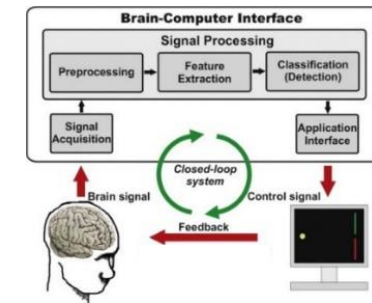


(4) BrainTrain application to improve cognition of elderly MCI



BRAIN – COMPUTER INTERFACE

- Establish database of Vietnamese sensorimotor rhythm (SMR) induced by imagined movements to create a cursor control interface

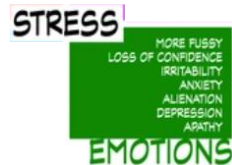


STRESS DETECTION AND INTERVENTION

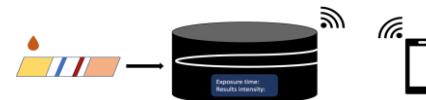
(1) Investigate the effect of alpha music on stress level, cognitive function and brain activity



(2) Study the effect of stress on emotion response



(3) Develop a point of care (POC) device to quantify cortisol



(4) Mindfulness-Based Stress Reduction (MBSR)



Dr. Hà Thị Thanh Hương

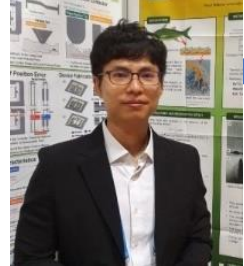
- Chair, Department of Tissue Engineering and Regenerative Medicine
- School of Biomedical Engineering, International University, VNU HCMC
- Email: htthuong@hcmiu.edu.vn

Contact:

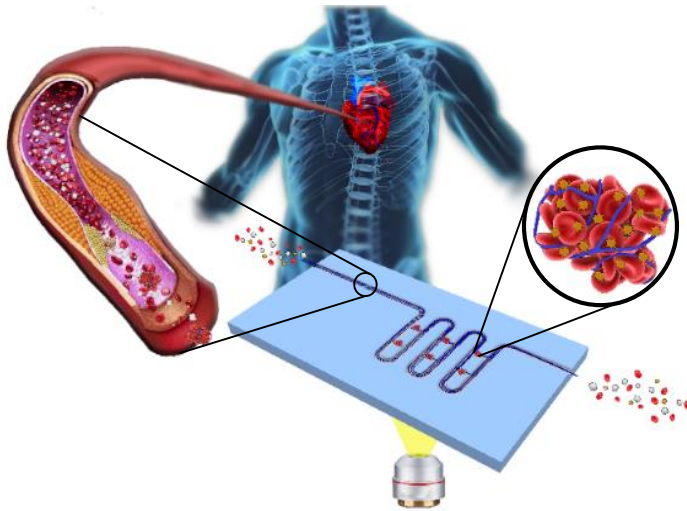
- Brain Health Lab (room A.513), International University
- Email: bmebrainhealthlab@gmail.com

Micro/Nano Manufacturing for Medical Instrumentations

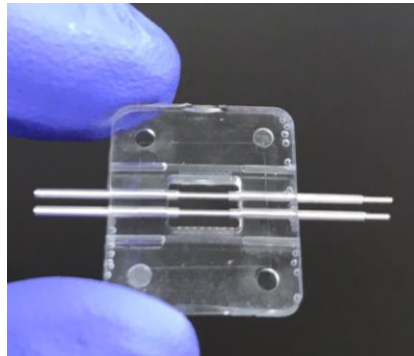
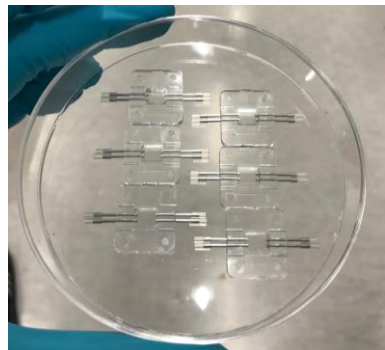
Nguyen Thanh Qua Ph.D.
nguyenthanhqua87@gmail.com



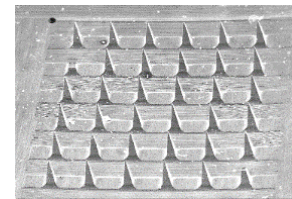
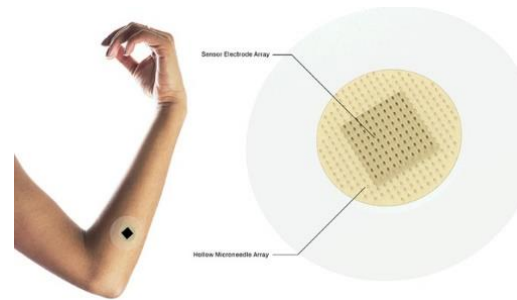
Tran Le Giang Ph.D.
tlgiang@hcmiu.edu.vn



Blood clot modelling on-a-chip



Mass production of Lab-on-a chip devices



- Dry electrode
- Low noise
- Biocompatible

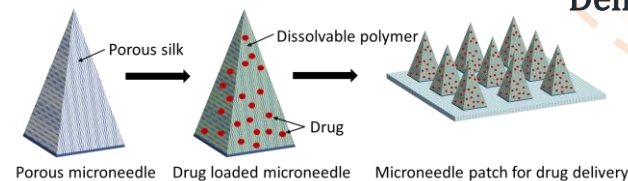
Biopotential
Electrode

MICRONEEDLE

Drug
Delivery

Wound
Sealing

- Using microneedle to seal open wound
- Fast and convenience



Porous silk fibroin scaffold



Microneedle filled with drug-contained polymer

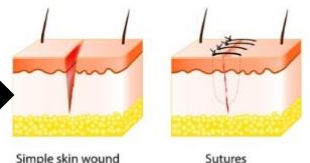


Microneedle patch for control drug delivery

Microneedle with hooks



Wound closure



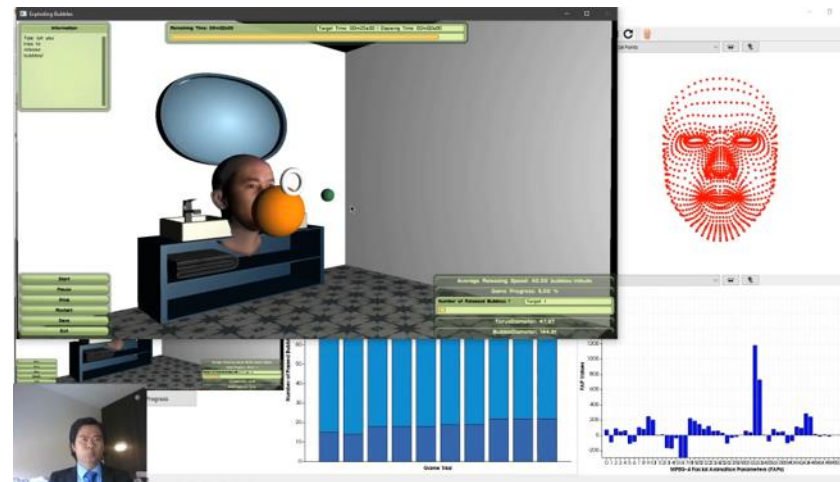
Biomechanics

Dr. Nguyễn Tấn Như

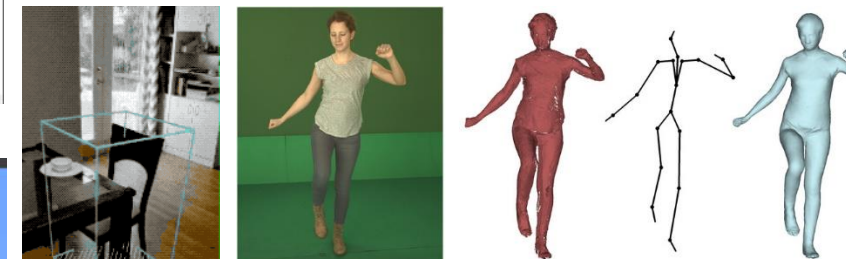
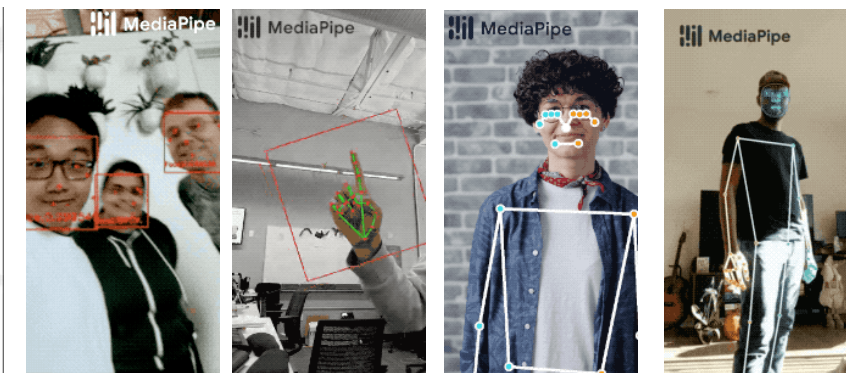
Augmented Reality for Faces



Serious Games for Health Care



Computer Vision for Lives

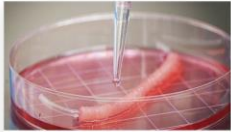


P. Fechteler et al., 2019

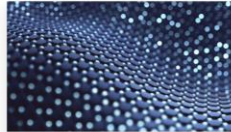


Department of Tissue Engineering & Regenerative Medicine

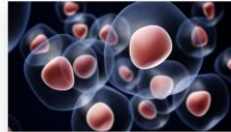
CÁC HƯỚNG NGHIÊN CỨU



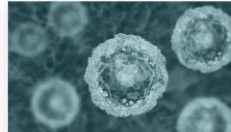
Kỹ thuật mô



Khoa học vật liệu



Yếu tố tăng trưởng



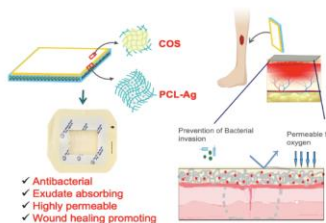
Công nghệ tế bào gốc



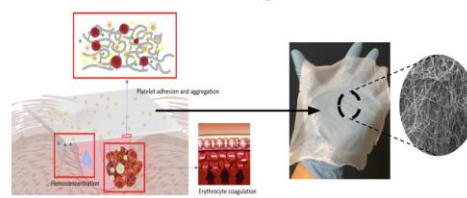
Principal Investigator: Assoc. Prof. Nguyen Thi Hiep
Dean, School of Biomedical Engineering - IU VNU HCMC
Email: nthiep@hcmiu.edu.vn
Contact:
Room A1.412, International University, Vietnam National University-
Ho Chi Minh City (VNU-HCMC)

CÁC ĐỀ TÀI ĐANG THỰC HIỆN

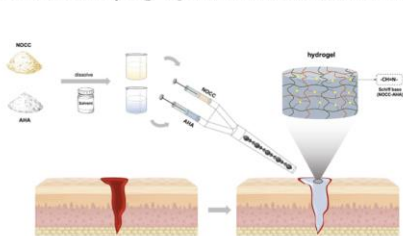
Băng gạc kháng khuẩn PCL-Nano Ag-COS



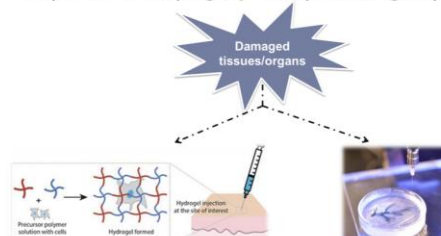
Màng cầm máu từ cellulose gốc vi khuẩn tải chitosan oligomer



Keo sinh học giúp làm lành vết thương



Mực in sinh học giúp tái tạo xương/ sụn



TERM RESEARCH GROUP (LA1.406)

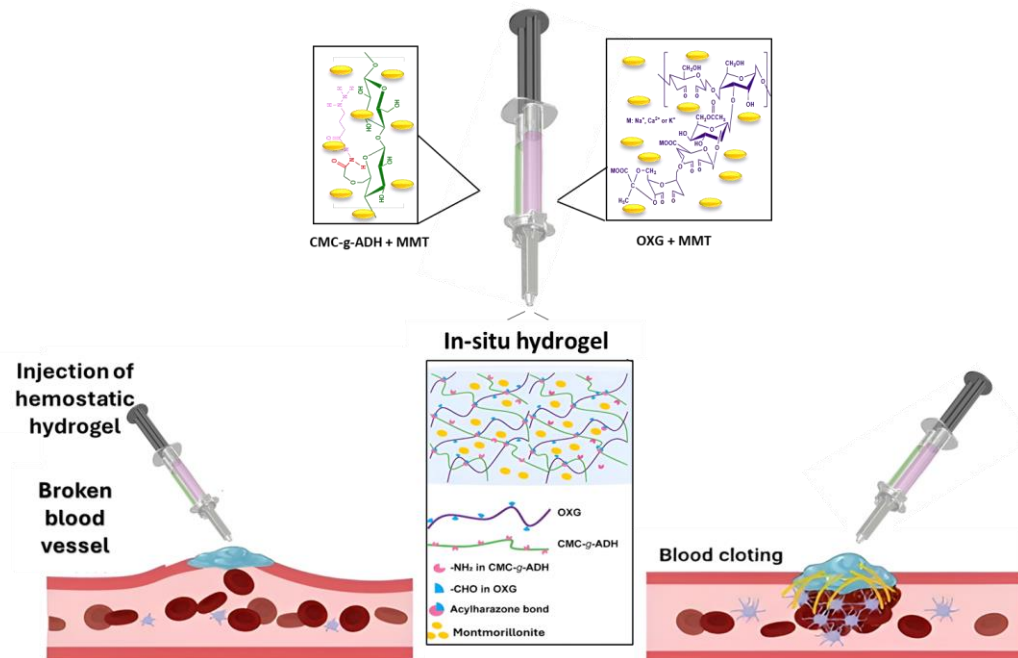


TERM-HCMIU → <https://sites.google.com/view/term-hcmiu>

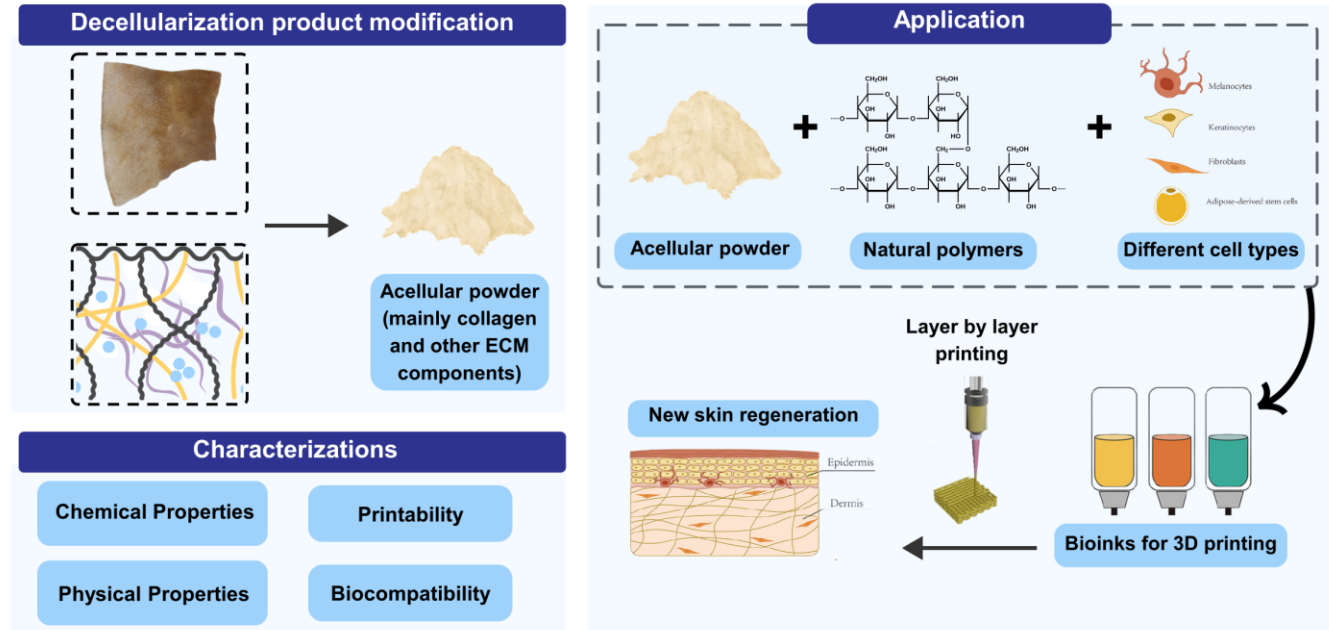


Doan Ngoc Hoan, D.Eng

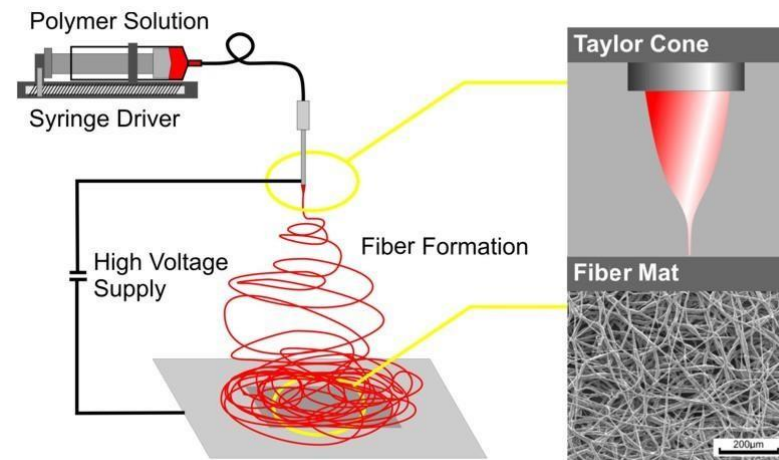
Injectable hydrogel for hemostasis



ACELLULAR FISH SKIN- BASED BIOINK FOR BIOMEDICAL APPLICATIONS



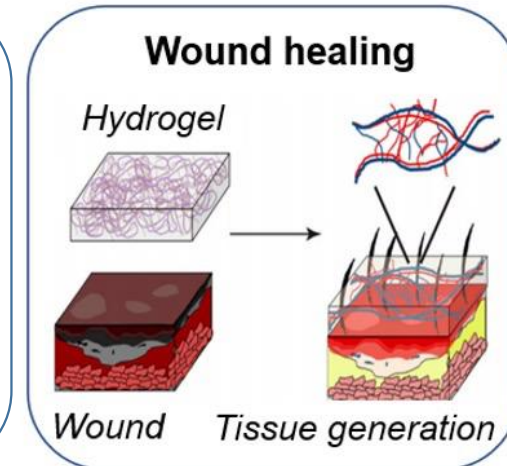
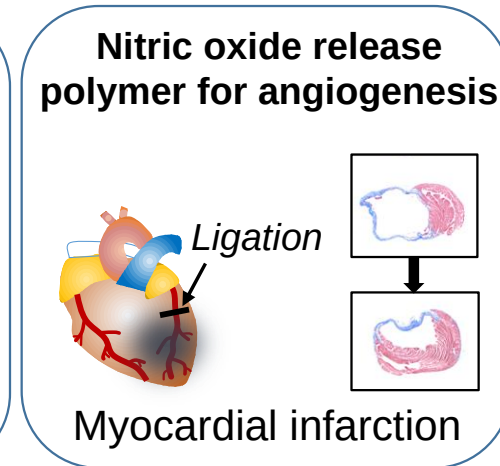
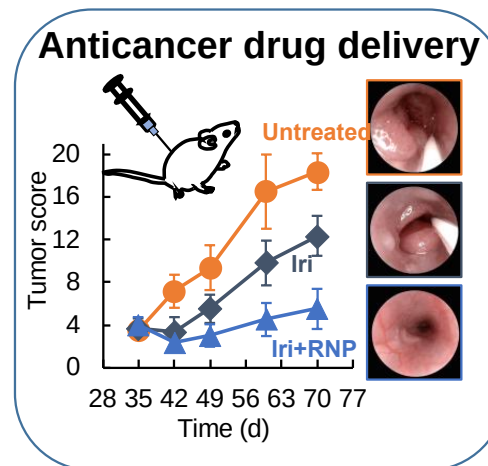
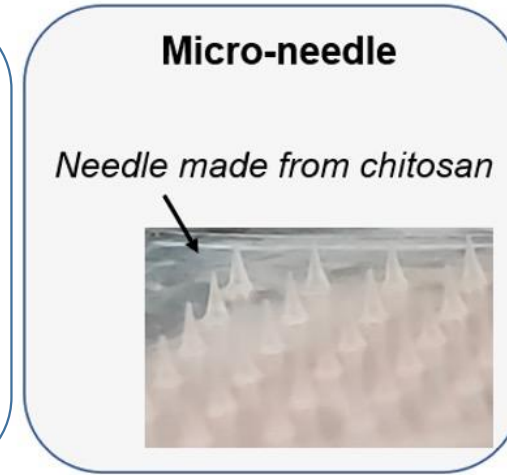
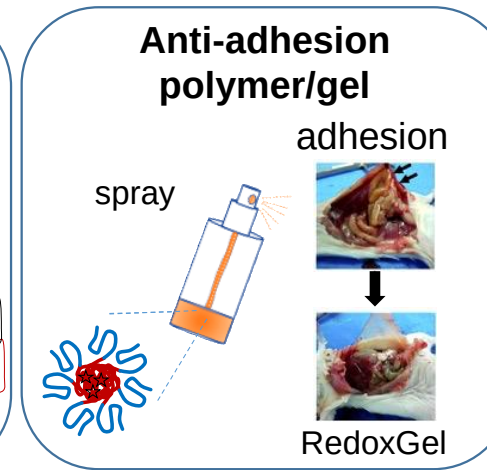
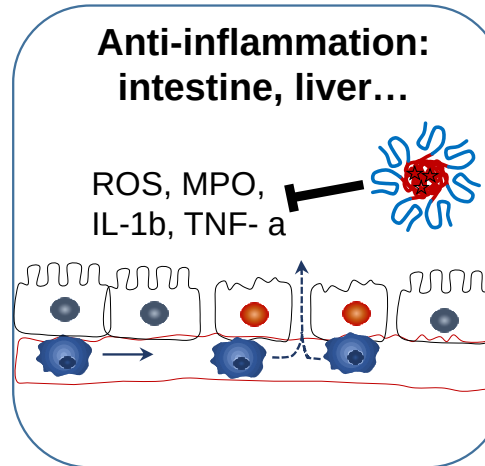
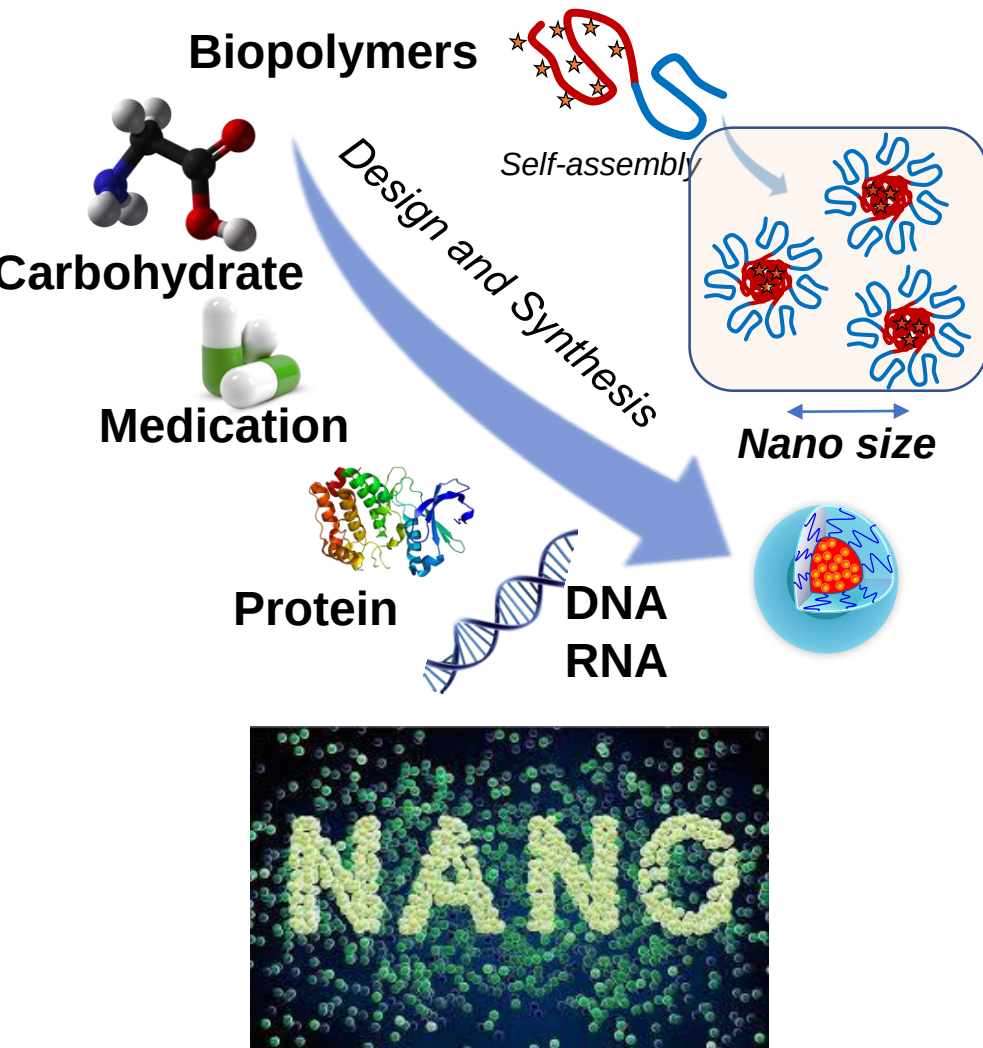
Electrospun membrane for wound dressing



Design of Nanobiomaterials for Drug Delivery System



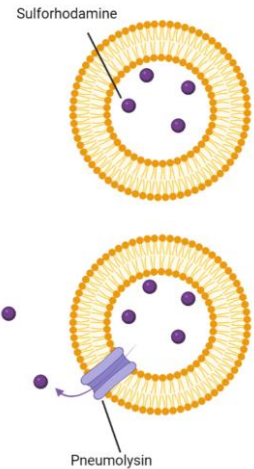
Assoc. Prof.
Vòng Bính Long



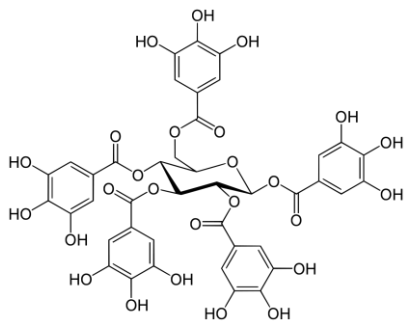
Duong Duc Anh NGUYEN's Research Interests

Master of Biomedical Science

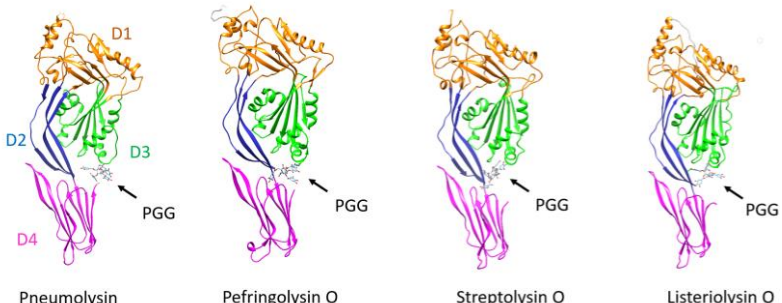
ANTIVIRULENCE



Liposome-Rupture Model

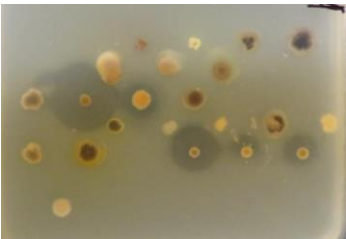


Pore-Forming Toxins Inhibitor Identification

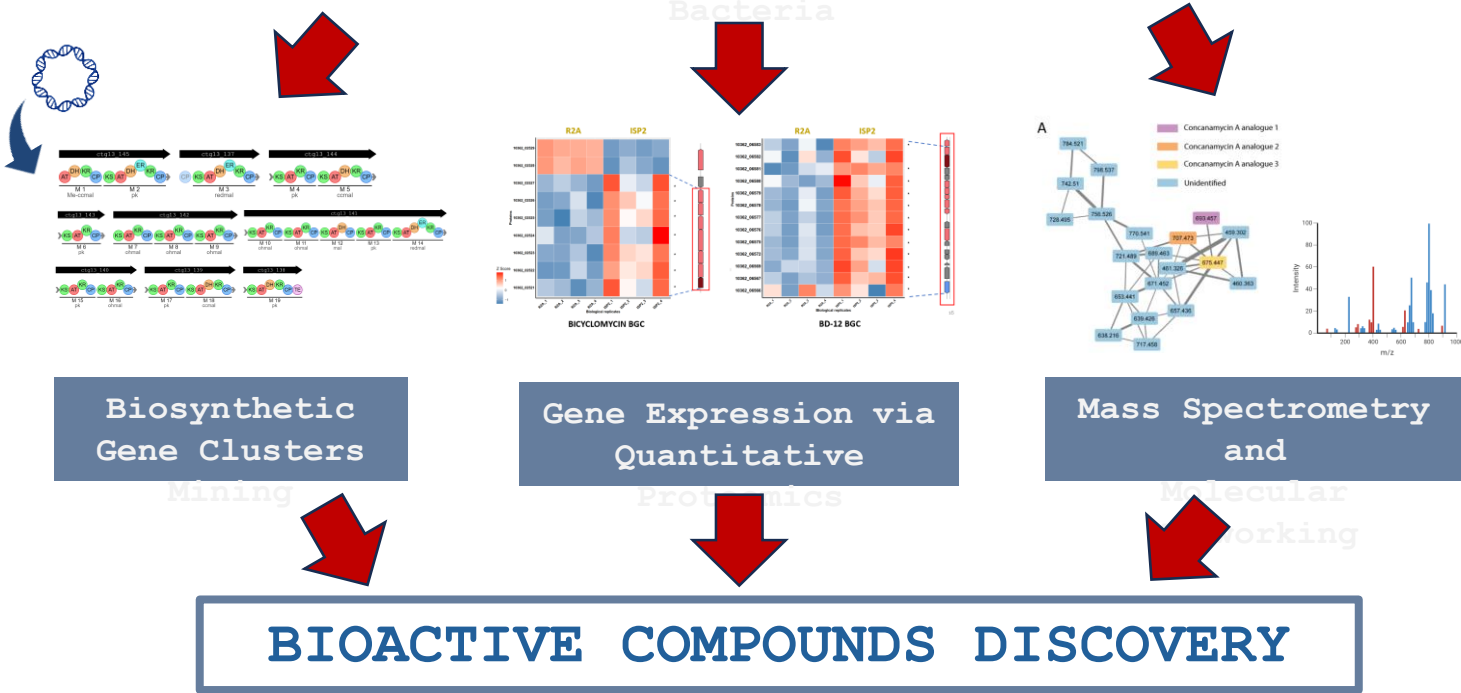


Inhibition Mechanism Investigation

ANTIBACTERIAL



Antimicrobial Screening from Soil

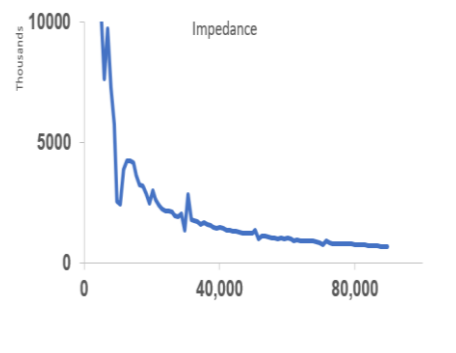
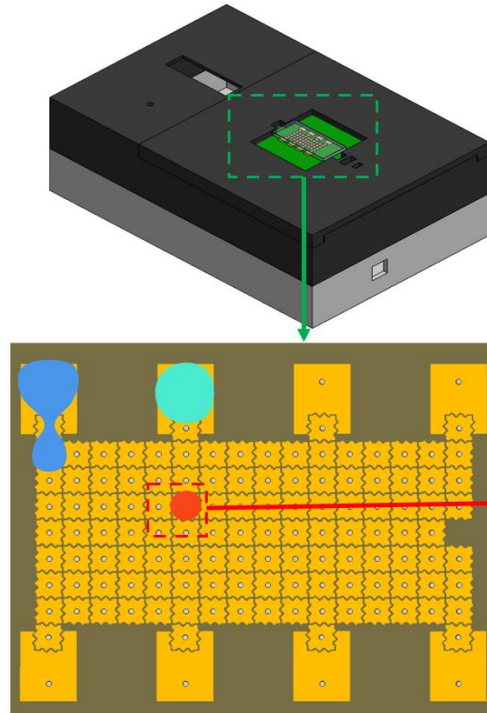




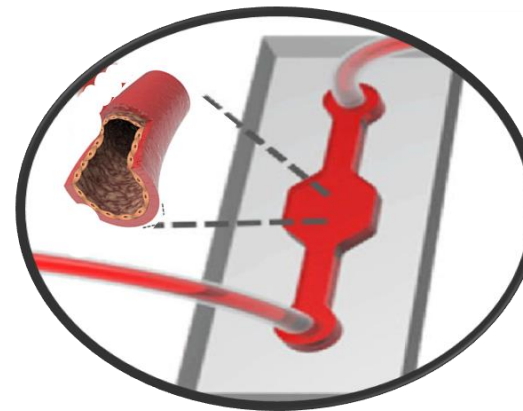
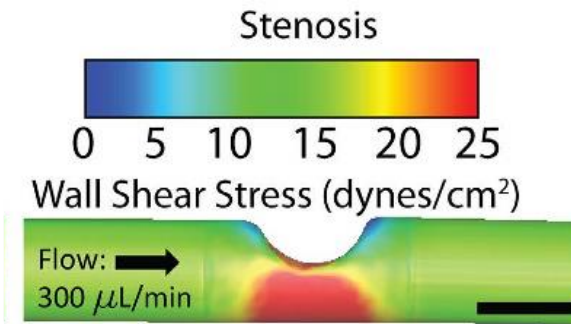
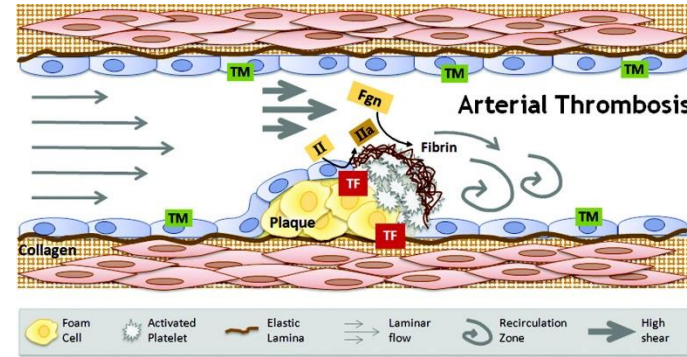
Assoc. Prof. Huynh Chan Khon
Email: hckhon@hcmiu.edu.vn

Biosensor and Lab-on-Chip

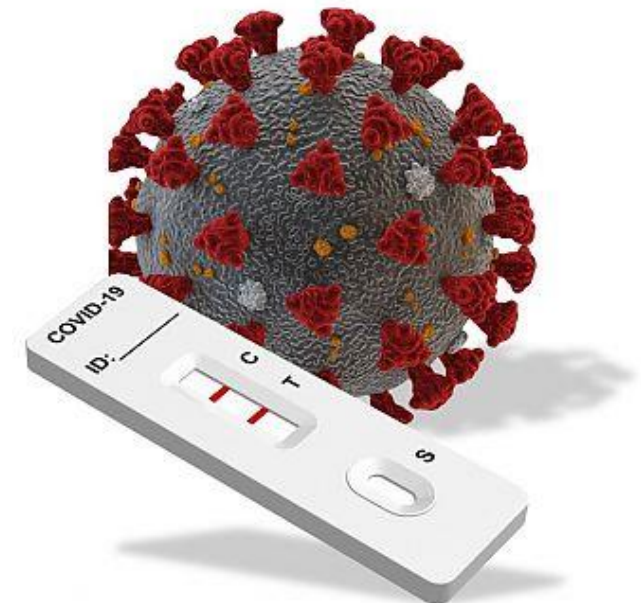
Automated POCD device, sample-to-result



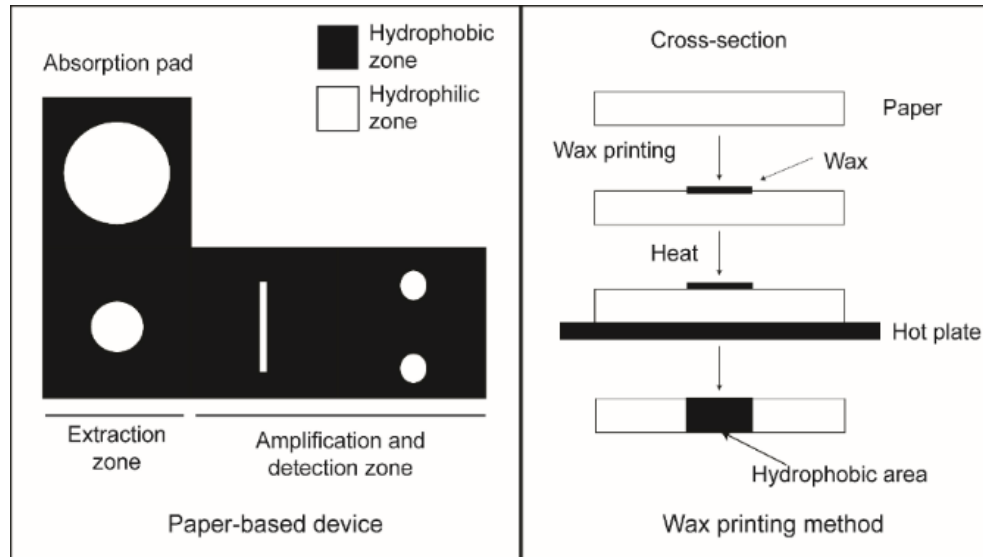
Vessel on a chip for Arterial Thrombosis modeling



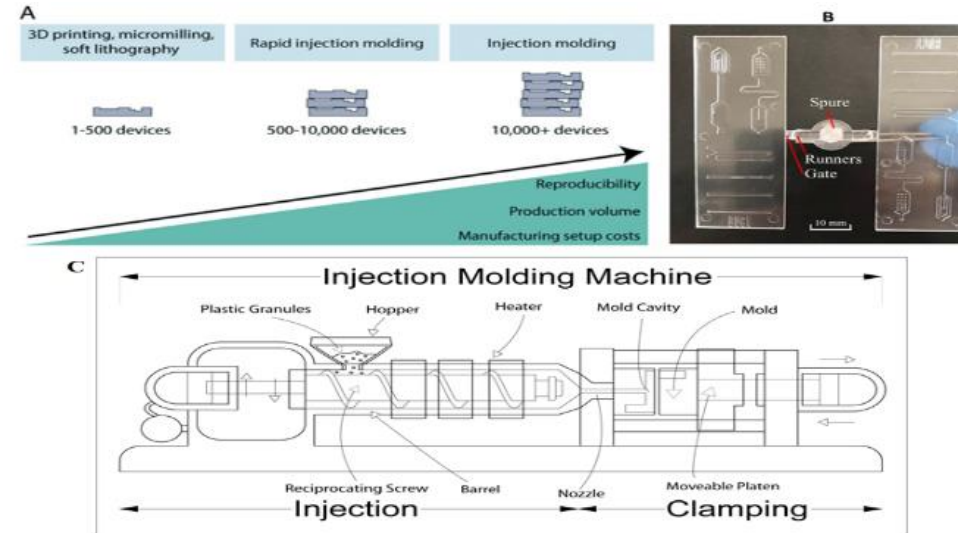
Sars-CoV2 rapid Ag detection from Saliva



Development of novel sensing platform and lab on a chip for clinical diagnostics



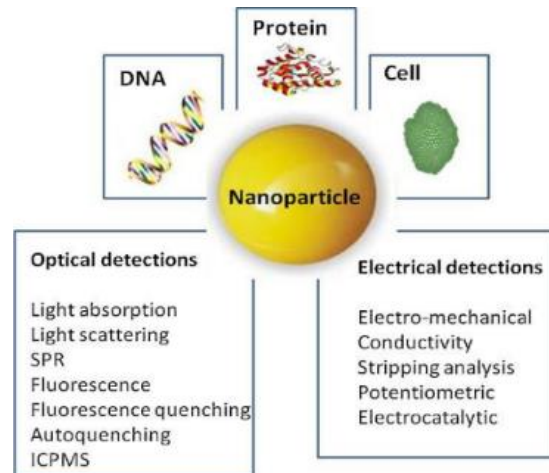
Paper-based microfluidic device fabrication



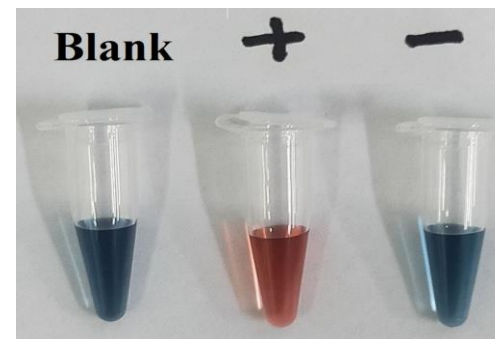
(A) Microdevice fabrication methods in term of advantages and limitations, (B) Fabricated microfluidic chips using injection molding, (C) Injection molding machine.



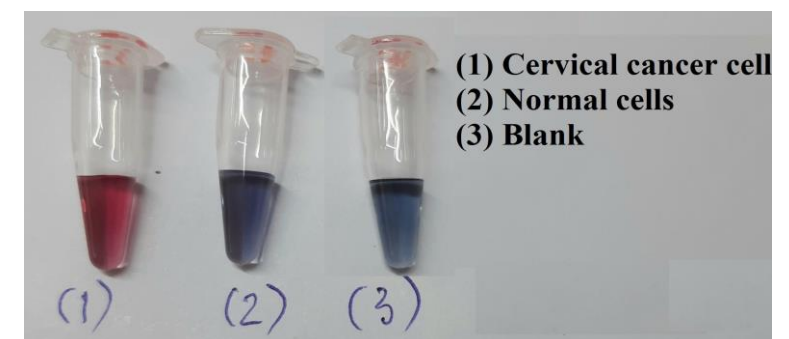
Truong Phuoc Long PhD.
tplong@hcmiu.edu.vn



Nanobiosensors used for DNA, proteins and cells analysis

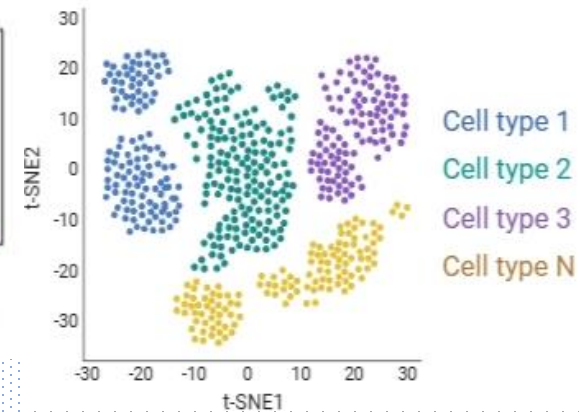
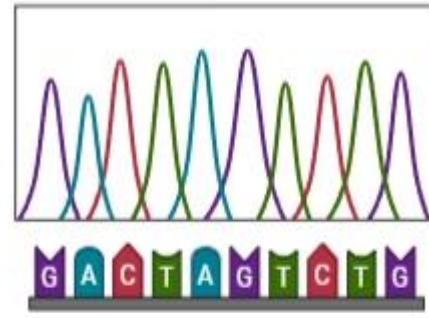
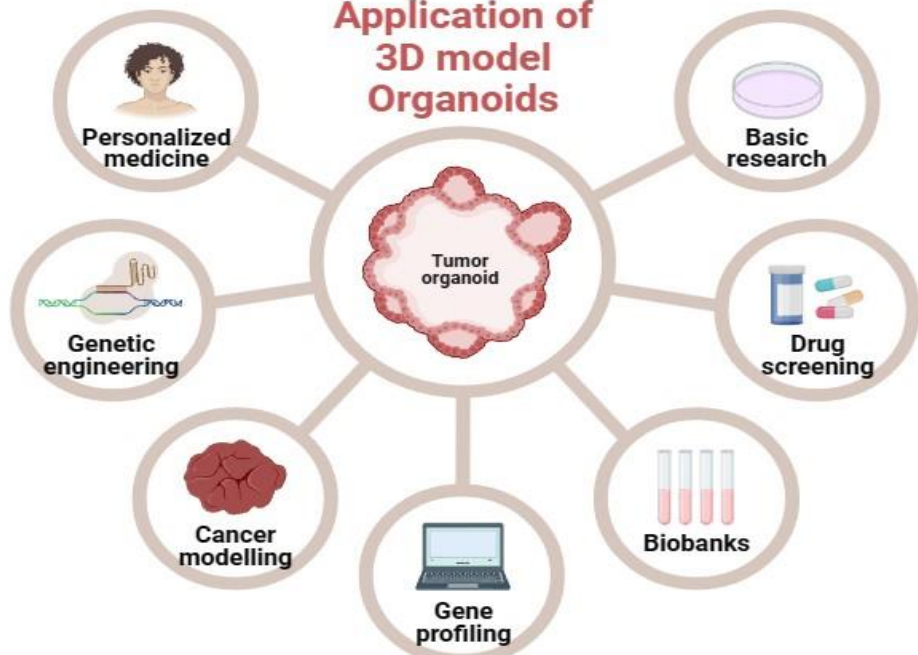


A novel colorimetric nanosensor for detection of RNA viruses



Plasmonic nanosensor for visual detection of telomerase in cancer cells

Application of 3D model Organoids



Biomarker from
Genomic Data

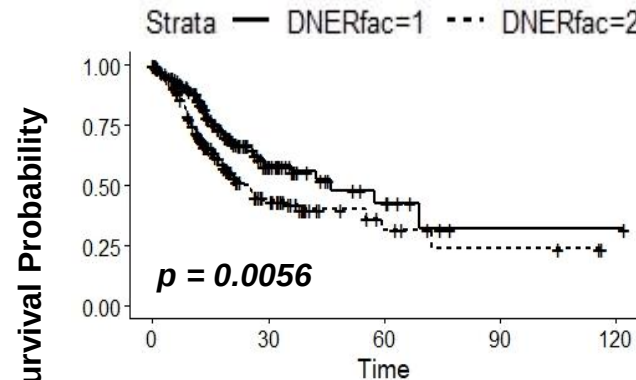
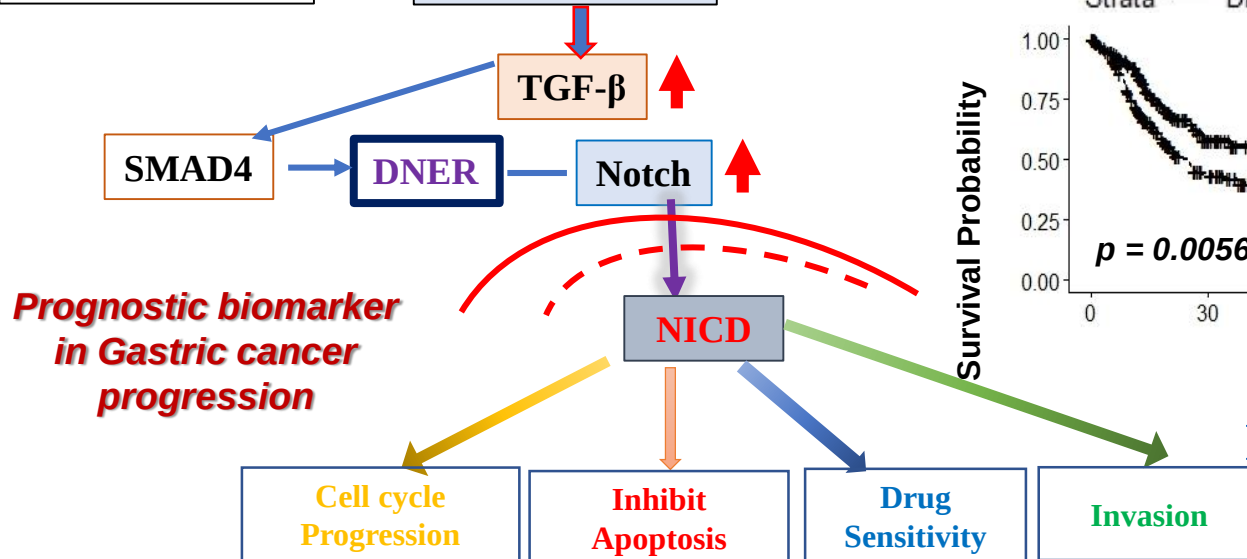
Single cells
sequencing



To Thi Ngoc Han Ph.D.,
ttnhan@hcmiu.edu.vn

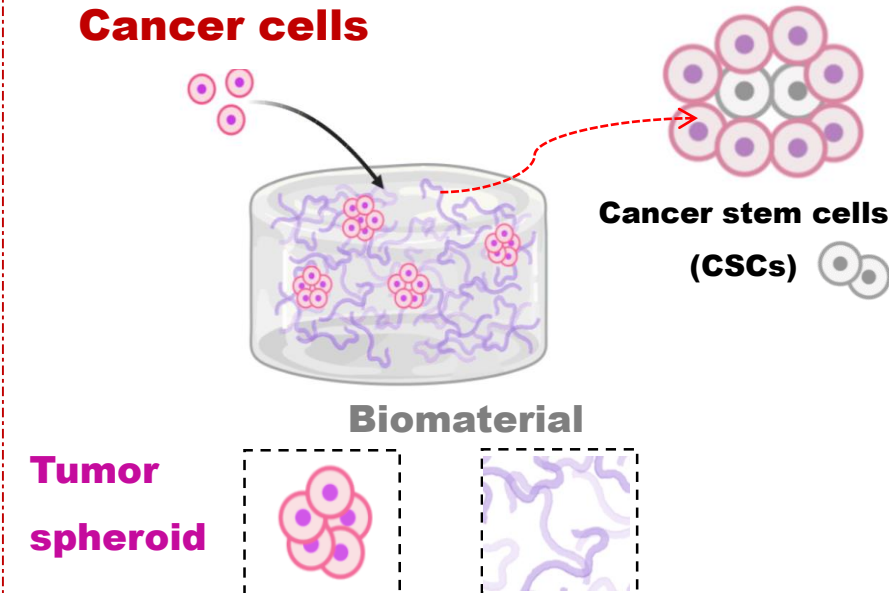
Application of
Organoid Models in
Oncology

Adherent growth → Tumor Spheroid



<https://doi.org/10.3390/ijms241210077>

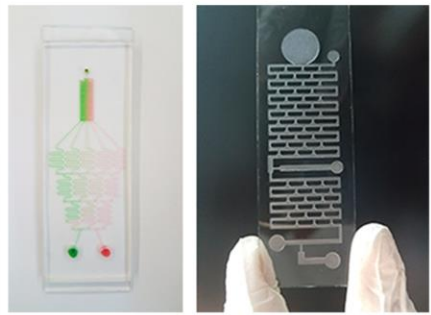
Cancer cells





Research products

Pharmaceutical and TERM products



Lab on the chip



Bio Glue



Nano-Ag loaded urgo
for anti-bacterial

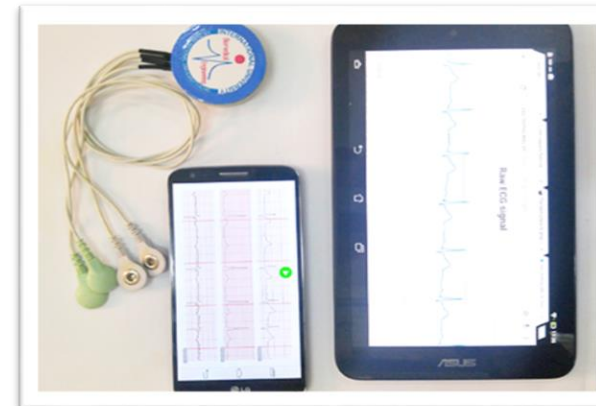
Medical equipment products



Tele blood pressure



Smart Wheel chair



Portal ECG system

BrainTrain Application
<http://www.braintrainhcmiu.com/>





Key activities to promote research collaboration, technology invention, and gender balance



BME9
Dec. 2022



BME10
July 2024



Bi-annual International BME conference

Collaboration with other university, companies and hospitals



World Class Healthcare in Vietnam



筑波大学
University of Tsukuba





Industrial Advisory Board

FV Medical Instrument shortcourse

MEDICAL INSTRUMENTATION
 From Principles to Applications
 plus Safety, Regulations, Maintenance, and Hands-on Practice

REGISTER QR CODE





FIRST SESSION ON MARCH 6TH

EQUIPMENT

- Patient Monitor
- Ultrasound
- Biochemistry Analysers
- Haemodialysis Machines
- Anaesthesia Machine

CONTENT

- Working Principles
- Applications
- Safety, regulations, and maintenance
- Hands on practice with real Patient Monitor, Ultrasound, Anaesthesia Machine

VENUE

FV Hospital, 6 Nguyen Luong Bang st, Phu My Hung, Quan 7, HCMC

TIME

- Weekly on Saturday (11:30 AM – 2:30 PM)
- Duration: 6 weeks

CONTACT

Dr. Ngo Thanh Hoan, Email: nthoan@hcmiu.edu.vn
Fanpage: FV-HU Short Course: Medical Instrumentation

INSTRUCTORS

- Mr. Monojit Mitra, Facility Director, FV Hospital
- Dr. Ngo Thanh Hoan, School of Biomedical Engineering, International University, VNU-HCM
- Representatives from Medical Equipment Companies (e.g., Draeger, Philips, Siemens, etc.)

TUITION FEE

4,000,000 VND
Discount 50% for students
Max.: 20 students/class

CERTIFICATE

Jointly issued by International University and FV Hospital

REGISTER

Register Link:
<https://forms.gle/6W61GaSBHJYuv9iX9>



short course

MEDICAL
INSTRUMENTATION

FROM PRINCIPLES TO APPLICATION

CERTIFICATE ISSUED BY INTERNATIONAL UNIVERSITY AND FV HOSPITAL

- ★ Patient Monitor
- ★ ECG Monitor
- ★ Defibrillation
- ★ Ultrasound
- ★ X-ray machine
- ★ CT-scan machine
- ★ ICU Ventilator
- ★ Anaesthesia machine



Introduction to Technology

Application Knowledge

Working Principle

Hands-on

ORGANIZERS



INSTRUCTORS

by Mr. Monojit Mitra (Facility Director) and:



Discount for students

50%

Duration:

6 weeks

Schedule: Saturday

Time: 13:00 - 16:00

Venue: FV Hospital

Scan to register



Contact us:

Assos.Prof Pham Thi Thu Hien
Email: ptthien@hcmiu.edu.vn

Mr. Monojit Mitra (Facility Director)
Email: m.mitra@fvhospital.com



short course

MEDICAL
INSTRUMENTATION

FROM PRINCIPLES TO APPLICATION

CERTIFICATE ISSUED BY INTERNATIONAL UNIVERSITY AND FV HOSPITAL

- ★ Patient Monitor
- ★ ICU Ventilator
- ★ Ultrasound
- ★ MRI machine
- ★ X-ray / CT-scan
- ★ Field Trip



Introduction to Technology

Application Knowledge

Working Principle

Hands-on, as possible

ORGANIZERS



INSTRUCTORS

by Mr. Monojit Mitra (Facility and Biomedical Director) and:



Discount for students

50%

Duration:

6 weeks

Schedule: SAT 15/7-19/8

Time: 12:00 - 15:00

Venue: FV Hospital

Scan to register



Contact us:

Mr. Lê Khắc Thiên Phúc (TA)
Email: phuclkt25@mp.hcmiu.edu.vn

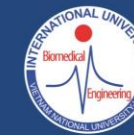
Mr. Nguyễn Nhật Minh (TA)
Email: sbeiu19015@mp.hcmiu.edu.vn





SCHOOL OF BIOMEDICAL ENGINEERING

"HIGH QUALITY-SUSTAINABILITY-USEFULNESS"



NGUYỄN THỊ HIỆP Dean

Assoc. Prof.
Email: nthiep@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Huệ High School, HCMC
 - BS., University of Science, HCMC
 - MS., Soonchunhyang University, Korea
 - Ph.D., Soonchunhyang University, Korea
- RESEARCH INTERESTS**
- Bone, dental and skin regeneration
 - Cell and Biomaterials Interaction
 - Stem Cell Differentiation
 - Anti-thrombotic materials
 - Artificial Blood vessels
 - Stop bleeding materials
 - Drug delivery systems for cancer treatment



VÒNG BÌNH LONG Vice-Dean

Assoc. Prof.
Email: vblong@hcmiu.edu.vn

- EDUCATION**
- Nam Hà High School, Biên Hòa
 - BS., University of Science, HCMC
 - MS., University of Science, HCMC
 - Ph.D., University of Tsukuba, Japan
- RESEARCH INTERESTS**
- Designs of Novel Drug Delivery and Nanomedicine in Theranostics
 - Bio-Nano Polymers for Biomedical Applications
 - In vitro – in vivo disease models



MEDICAL INSTRUMENTATION DEPARTMENT



PHẠM THỊ THU HIỀN
Department Chair,
Assoc. Prof.
Email: pthien@hcmiu.edu.vn

- EDUCATION**
- Cao Lãnh High School, Đồng Tháp
 - BE., HCMC University of Technology
 - MS., Southern Taiwan Uni. Science and Technology, Taiwan
 - Ph.D., National Cheng Kung Uni., Taiwan
- RESEARCH INTERESTS**
- Polarized light-tissue studies
 - Applications of Artificial Intelligence (AI) or signal/image processing
 - Cancer detection (skin, liver, and breast...) or cell/tissue characterization
 - Noninvasive glucose measurement
 - Laser/LED applications.



NGÔ THỊ LỆ
Ph.D., Lecturer
Email: ngothi@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, Gia Lai
 - BE., HCMC University of Technology
 - MS., Southern Taiwan University of Science and Technology, Taiwan
 - Ph.D., Korea University, Korea
- RESEARCH INTERESTS**
- Artificial intelligence, pattern recognition
 - Image/signal processing
 - Brain-computer interface, cognitive engineering
 - Mental disorder and neurodegeneration detection and interventions.



LÊ NGỌC BÍCH
Ph.D., Lecturer
Email: lbich@hcmiu.edu.vn

- EDUCATION**
- Long Bình High School, Tiền Giang
 - BE., HCMC University of Technology
 - MS., Southern Taiwan University of Science and Technology, Taiwan
 - Ph.D., Southern Taiwan University of Science and Technology, Taiwan
- RESEARCH INTERESTS**
- Medical device: robotics; measurement instrument; assisting devices; application of AI, machine learning and big data
 - MEMS: PZT thin film, pressure sensor, SAW sensor
 - Microfluidics: MicroPump, MicroMixer, Lab-on-a-Chip
 - Optics: manufacturing technology, thin film coating.



NGUYỄN THÀNH QUÀ
Ph.D., Lecturer
Head of Laboratories
Email: ntqua@hcmiu.edu.vn

- EDUCATION**
- Gò Vấp High School, HCMC
 - BE., HCMC University of Technology
 - MS., Seoul National University, Korea
 - Ph.D., Seoul National University of Science and Technology, Korea
- RESEARCH INTERESTS**
- Postdoctoral Fellow, Korea Institute of Science and Technology (KIST), Korea
 - Low-cost microfluidics and Lab-on-a-chip
 - Transdermal drug delivery via microneedles patch
 - Organ-on-a-chip technology.



TRẦN LÊ GIANG
Ph.D., Lecturer
Email: giangt@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương Gifted High School, Bình Dương
 - BE., International University, HCMC
 - MS., Seoul National University of Science and Technology, Korea
 - Ph.D., Seoul National University of Science and Technology, Korea
- RESEARCH INTERESTS**
- Sensors: piezoresistive and piezoelectric
 - Microneedle: fabrication and biomedical application
 - Medical Instrumentation.



NGUYỄN TẤN NHỰT
Ph.D., Lecturer
Email: ntan@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Trãi High School, Bình Dương
 - BE., Ho Chi Minh City University of Technology and Education, HCMC
 - Ph.D., University of Technology of Compiègne, France
- RESEARCH INTERESTS**
- Postdoc, University of Caen Normandy, France and University of Technology of Compiègne, France.
 - Biomechanics, AI for Healthcare
 - Statistical Shape Modeling
 - Computer Vision for Biomedical Engineering
 - Serious Games for Rehabilitation.



HÀ THỊ THANH HƯƠNG
Department Chair
Ph.D., Lecturer
Email: htthuong@hcmiu.edu.vn

- EDUCATION**
- VNU-HCM High School for the Gifted
 - BS., University of Science, VNU, HCMC
 - BE., Nong Lam University, HCMC
 - Ph.D., Stanford University, US
- RESEARCH INTERESTS**
- Neural Engineering: human-centered design, instrumentation and application
 - Nutritional, pharmaceutical and cognitive neuroscience
 - Neurodegeneration and Neurological Disorders.



HUỖNH CHẤN KHÔN
Assoc. Prof.
Email: tckhon@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, HCMC
 - BS., University of Science, VNU, HCMC
 - MS., Ajou University, Korea
 - Ph.D., University of Technology, VNU, HCMC
- RESEARCH INTERESTS**
- Bioactive Scaffold Design for Tissue Engineering
 - Biomolecular Engineering
 - Cell-Material Interaction
 - Low cost microfluidic
 - Point of care diagnostics.



ĐOÀN NGỌC HOAN
Ph.D., Lecturer
Email: dngoc@hcmiu.edu.vn

- EDUCATION**
- Thống Nhất B High School, Đồng Nai
 - BS., Nong Lam University, HCMC
 - MS., University of Science, VNU, HCMC
 - Ph.D., Sungkyunkwan University, Korea
- RESEARCH INTERESTS**
- DNA and Protein Chip and POC devices
 - Synthesis of metal-organic framework for biomedical applications
 - Exosome/liposome-based drug delivery.



TRƯƠNG PHƯỚC LONG
Ph.D., Lecturer
Email: tplong@hcmiu.edu.vn

- EDUCATION**
- Bình Chánh High School, HCMC
 - BS., University of Science, VNU, HCMC
 - MS., University of Science, VNU, HCMC
 - Ph.D., Sungkyunkwan University, Korea
- RESEARCH INTERESTS**
- Biomedical science, stem cell, and cancer stem cell
 - Drug resistance, and drug screening in cancer
 - Dermatology/inflammatory skin disorder, skin regeneration.



TÔ THỊ NGỌC HÂN
Ph.D., Lecturer
Email: ttngoc@hcmiu.edu.vn

- EDUCATION**
- Bến Tre High School for the Gifted, Bến Tre
 - BS., International University, VNU HCMC
 - B-Med, The University of Melbourne, Australia
 - M-Biomed, The University of Melbourne, Australia
- RESEARCH INTERESTS**
- Drug discovery
 - Antimicrobial compound
 - Bioactive natural products.



NGUYỄN DƯƠNG ĐỨC ANH
M-Biomed, Lecturer
Email: anhnd@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Bình Khiêm High School for the gifted, Quảng Nam
 - Auckland International College, New Zealand
 - B-Med, The University of Melbourne, Australia
 - M-Biomed, The University of Melbourne, Australia
- RESEARCH INTERESTS**
- Drug discovery
 - Antimicrobial compound
 - Bioactive natural products.

SECRETARIES



TỪ THỊ TUYẾT NGA
Secretary
Email: ttngoc@hcmiu.edu.vn

- EDUCATION**
- Tây Ninh High School, Bình Định
 - BE., Biotechnology, International University, VNU HCMC



BÙI THỊ HỒNG ANH
Secretary
Email: bthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Văn Tấn High School, HCMC
 - Bachelor Of Economics, University of Transport and Communications, HCMC



NGUYỄN HOÀNG THÚY KHANH
Secretary
Email: nhthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Văn Tấn High School, HCMC
 - Bachelor Agricultural Business, Nong Lam University, HCMC



ĐẶNG NGỌC THẢO NHI
Head of Laboratories
Email: dnngoc@hcmiu.edu.vn

- EDUCATION**
- Gia Định High School, HCMC
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Bone and dental regeneration.



TRẦN NGỌC VIỆT
Laboratory Technician
Email: tvniet@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, Gia Lai
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Medical Instrumentation
 - Bio-Signal and Image Processing
 - Data Science for Biomedical Engineering
 - Lab on the Chip.



NGUYỄN THỊ THANH NGỌC
Laboratory Technician
Email: ntthanh@hcmiu.edu.vn

- EDUCATION**
- Cần Đước High School, Long An
 - BS., Medicine and Pharmacy, HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Wound healing
 - Microfluidic.



NGUYỄN LÊ Ý
Laboratory Technician
Email: nly@hcmiu.edu.vn

- EDUCATION**
- Hermann Greiner, Đà Lạt
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Biomedical Instrumentation
 - Biosignal and Image Processing
 - Data Science for Biomedical Engineering
 - Software Programming.



NGUYỄN THỊ THU HÀ
Laboratory Technician
Email: ntthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Hữu Nhuận High School, HCMC
 - BS., University of Science, VNU, HCMC
- RESEARCH INTERESTS**
- Nanomedicine in Therapeutics
 - Treatment of inflammation and cancer
 - In vitro - in vivo diseased models.



NGUYỄN THỊ THỦY KIỀU
Laboratory Technician
Email: ntthanh@hcmiu.edu.vn

- EDUCATION**
- Song Đức High School, Cà Mau Province
 - BS., Physics Teacher Education, Can Tho University
 - MS., Materials Science, University of Science, VNU HCMC
- RESEARCH INTERESTS**
- Bioactive compound
 - Antibacterial materials
 - Biomimetic scaffolds.



PHAN THỊ THANH TÂM
Laboratory Technician
Email: pttam@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Văn Tấn High School, HCMC
 - BS., Biotechnology, International University, VNU HCMC
- RESEARCH INTERESTS**
- Tissue Engineering, Regenerative Medicine
 - Antibacterial material.



NGUYỄN THỊ PHƯƠNG THẢO
Laboratory Technician
Email: npthanh@hcmiu.edu.vn

- EDUCATION**
- Đặng Huy Trứ High School, Thừa Thiên Huế
 - BE., Biotechnology, International University, VNU HCMC
- RESEARCH INTERESTS**
- Tissue Engineering, Regenerative Medicine
 - Antibacterial material.



LÊ TRẦN MỸ AN
Teaching Assistant
Email: ltman@hcmiu.edu.vn

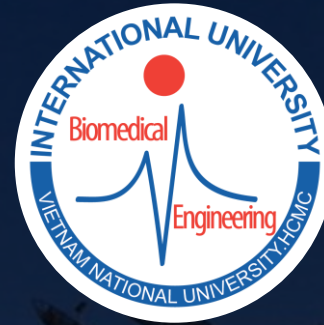
- EDUCATION**
- Bình Minh High School, Vĩnh Long
 - BE., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Biomaterials
 - Tissue Engineering, Regenerative Medicine.



HUỖNH THỊ THANH TRÚC
Laboratory Technician
Email: htthanh@hcmiu.edu.vn

- EDUCATION**
- Chu Văn An High School, An Giang
 - BE., Machine Manufacturing Technology, HCMC University of Technology and Education, HCMC
- RESEARCH INTERESTS**
- Mechanical Design
 - 3D printing Technology

TECHNICAL & TEACHING STAFF



thank you

CONTACT US: Vòng Bính Long, Associate Professor
Vice Dean of School of Biomedical Engineering
International University of Vietnam National Universities
HCM Ville, Vietnam
Email: nthiep@hcmiu.edu.vn
Website: www.hcmiu.edu.vn/bme

BME Innovation competition



ĐƠN VỊ TỔ CHỨC:  NHÀ TÀI TRỢ BẠCH KIM: 

BME INNOVATION COMPETITION²⁰²²

CUỘC THI SÁNG TẠO Y SINH 2022

CHỦ ĐỀ

“Giải pháp y tế hậu COVID cho thành phố thông minh”

THỜI GIAN

- 03.05 - 22.05: Vòng 1
- 30.05 - 24.06: Vòng 2
- 17.07: Chung kết

GIẢI THƯỞNG

Lên đến **30.000.000 VNĐ**

THAM GIA NGAY!

Mọi thắc mắc xin liên hệ:
Email: bmeyouthunion@iuyouth.edu.vn
Fanpage: BME Youth Union

ĐƠN VỊ TỔ CHỨC:  NHÀ TÀI TRỢ:  **DĂNG KÝ** 

BME²⁰²³ INNOVATION

CUỘC THI SÁNG TẠO Y SINH 2023

Chủ đề

“Hướng tới các giải pháp đổi mới trong y sinh học
- Toward innovation solutions in biomedicine”

Thời gian

- 02-03/2022: Vòng 1: Đăng kí ý tưởng đề tài
- 04/2022: Vòng 2: Trình bày đề cương đề tài/công trình
- 05/2022: Vòng Chung kết

Đối tượng

Tất cả Học sinh THPT & Sinh viên Đại học (<5 thành viên / nhóm)

GIẢI THƯỞNG

- 01 Giải Nhất: 10.000.000 VNĐ
- 01 Giải Nhì: 5.000.000 VNĐ
- 01 Giải Ba: 2.000.000 VNĐ
- 03 giải Khuyến khích: 1.500.000 VNĐ
- 01 giải Rising star: 1.000.000 VNĐ
- 01 giải Entrepreneurial Talent: 1.000.000 VNĐ
- 01 giải Best Young Talent: 5.000.000 VNĐ

 bmeyouthunion@iuyouth.edu.vn  www.facebook.com/iubmevietnam  Văn phòng Khoa Kỹ thuật Y Sinh: Phòng 01.405, Trường Đại học Quốc tế, Cơ sở Linh Trung, Thủ Đức, Thành phố Hồ Chí Minh

BME Alumni Association



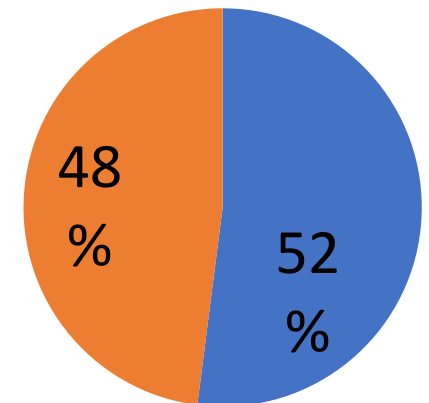
Proposing gender balance: students participating at national, international innovation competitions



Proposing gender balance: recruitment activities



**Gender ratio of
BME students**





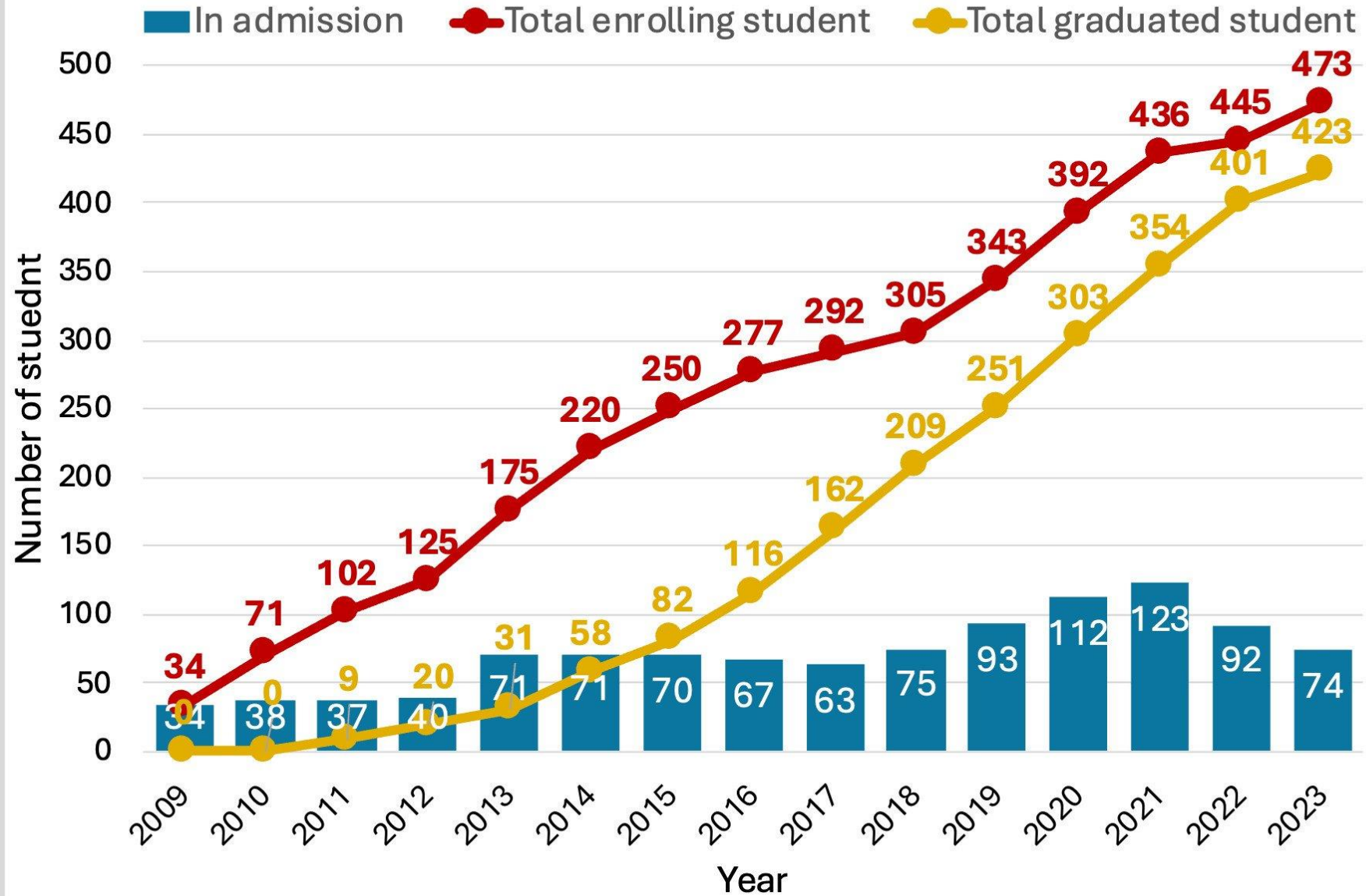
Education and Research Achievements

HCMC, December 27 - 29, 2022

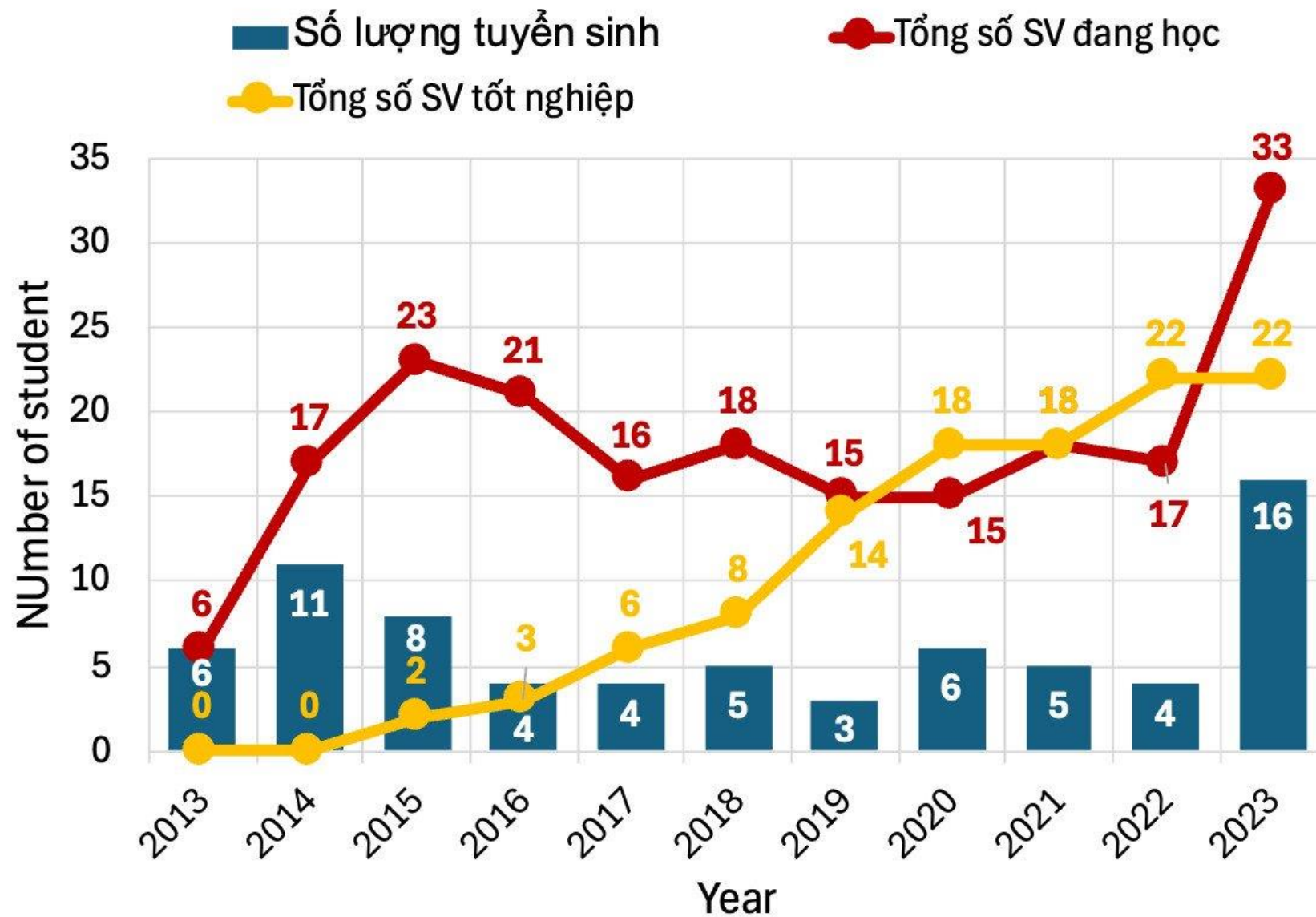
THE 9th INTERNATIONAL CONFERENCE IN VIETNAM
ON THE DEVELOPMENT OF BIOMEDICAL ENGINEERING



Total number of Bachelor student

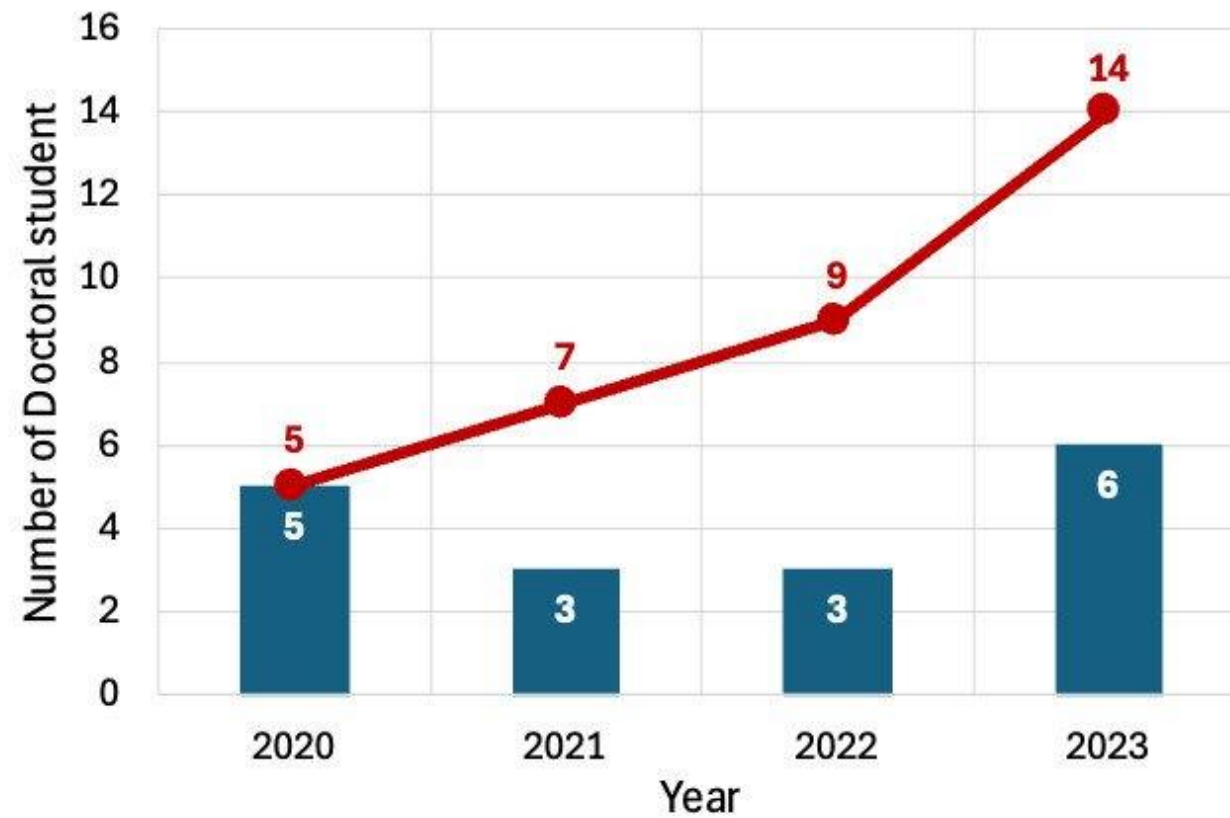


Number of Master student



Number of Doctoral student

■ Số lượng tuyển sinh ● Tổng số NCS đang theo học





Where our student works



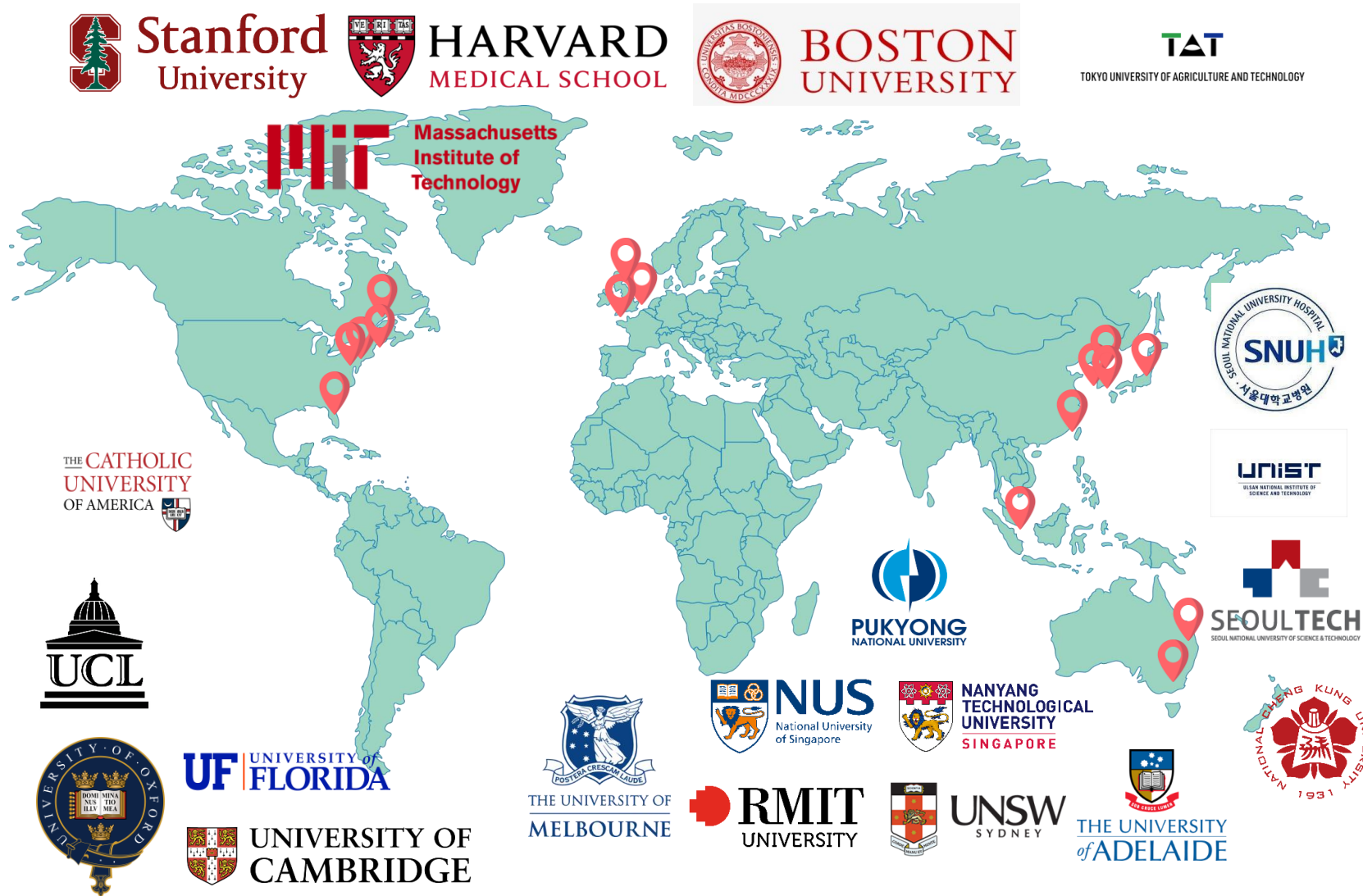
GE Healthcare

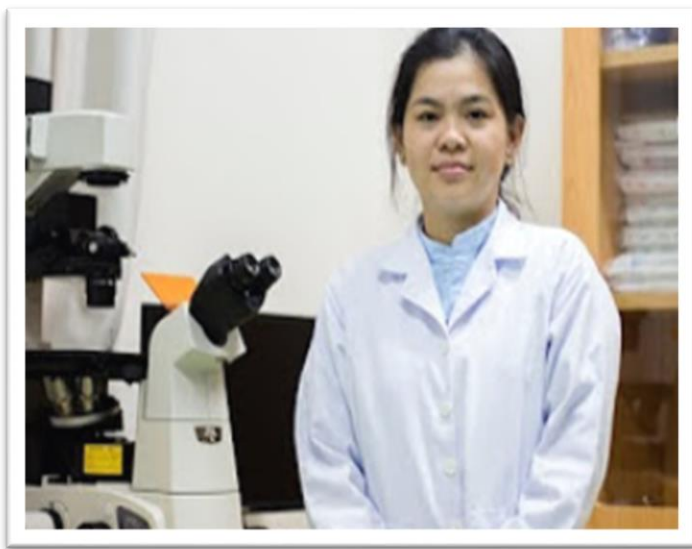


MILITARY HOSPITAL
BỆNH VIỆN QUÂN Y 175



Our graduates continue with master and Ph.D programs





Assoc. Prof. Nguyễn Thị Hiệp - the first Vietnamese winner of 2017 ASEAN-U.S. Science Prize for Women International Rising Talents of UNESCO (2018)

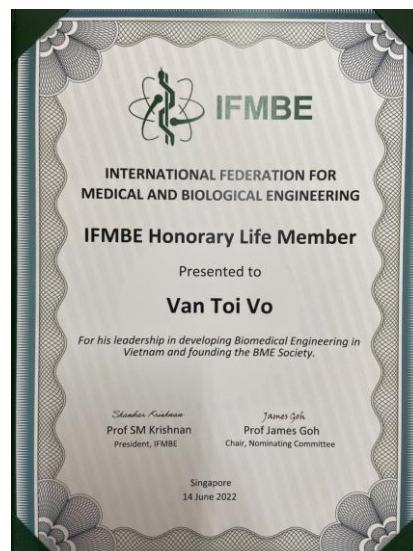


Assoc. Prof. Vong Binh Long – Golden globe for research achievement



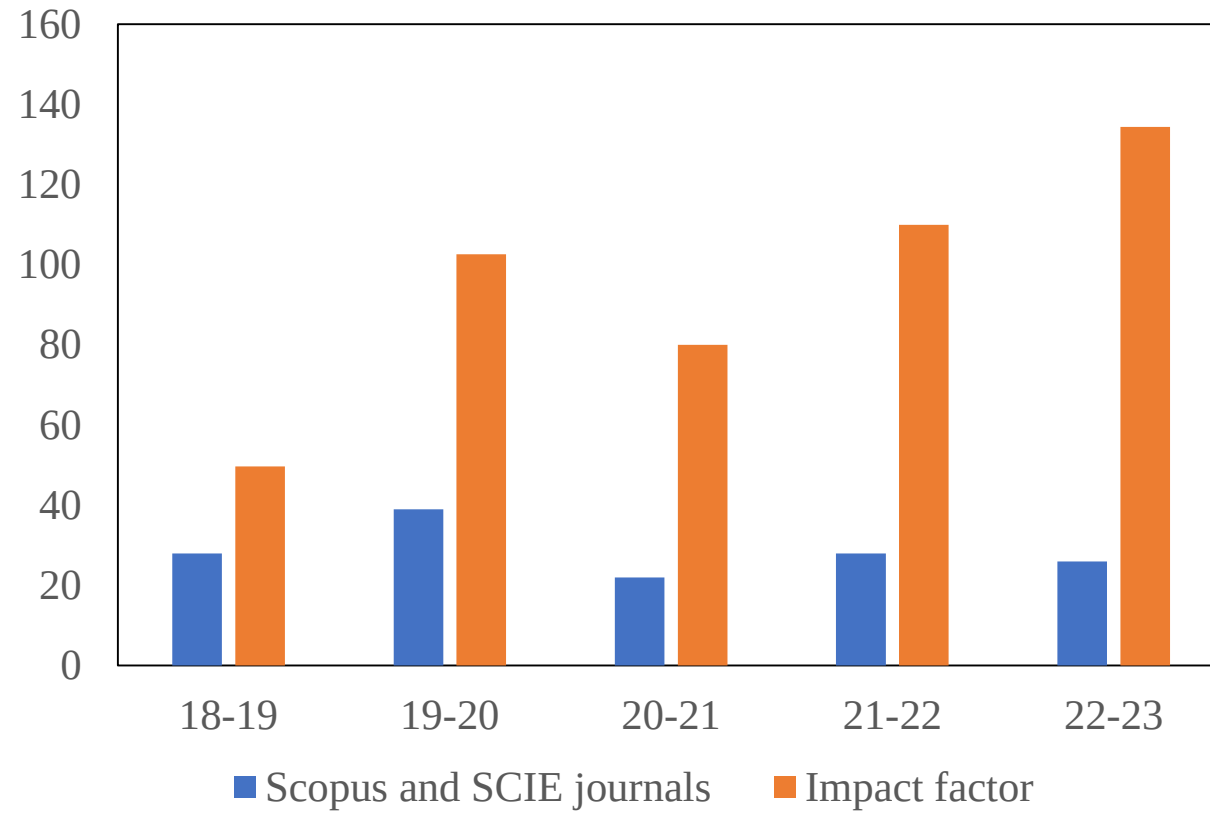
Assoc. Prof. Pham Thi Thu Hien– Third prize in the field of Science and Technology of Ho Chi Minh City Creative Awards 2023,

Prof. Vo Van Toi
IFMBE Honorary Life Member
(2022)

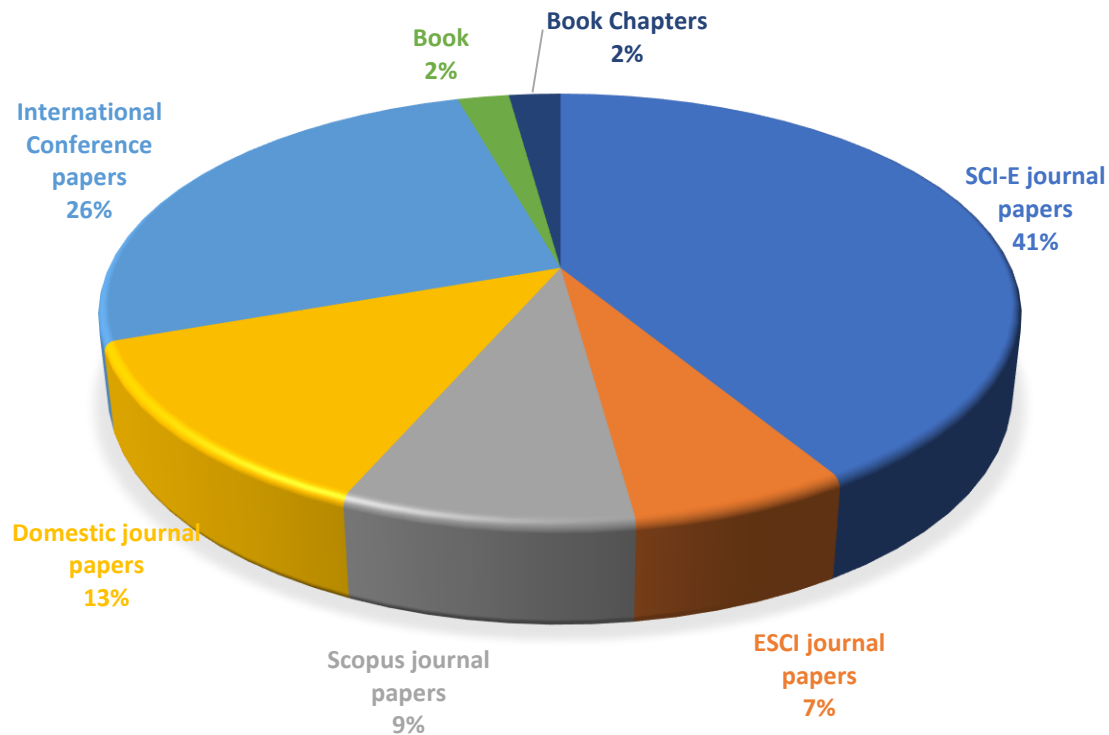


Dr. Ha Thi Thanh Huong – Women of the Future Awards Southeast Asia Shortlist 2023, Golden globe for research achievement 2023, National Outstanding Teacher in 2023, Typical young citizen of Ho Chi Minh city 2023, L’Oreal UNESCO 2022 , Early Career Award IBRO 2020,..

Publications through the years



Specific publications in 2022 - 2023

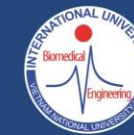


Publications	Number
SCI-E journal papers	19
ESCI journal papers	3
Scopus journal papers	4
Domestic journal papers	6
International Conference papers	12
Book	1
Book Chapters	1
Total	46



SCHOOL OF BIOMEDICAL ENGINEERING

"HIGH QUALITY-SUSTAINABILITY-USEFULNESS"



NGUYỄN THỊ HIỆP

Dean

Assoc. Prof.
Email: nthiep@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Huệ High School, HCMC
 - BS., University of Science, HCMC
 - MS., Soonchunhyang University, Korea
 - Ph.D., Soonchunhyang University, Korea
- RESEARCH INTERESTS**
- Bone, dental and skin regeneration
 - Cell and Biomaterials Interaction
 - Stem Cell Differentiation
 - Anti-thrombotic materials
 - Artificial Blood vessels
 - Stop bleeding materials
 - Drug delivery systems for cancer treatment



VÒNG BÌNH LONG

Vice-Dean

Assoc. Prof.
Email: vblong@hcmiu.edu.vn

- EDUCATION**
- Nam Hà High School, Biên Hòa
 - BS., University of Science, HCMC
 - MS., University of Science, HCMC
 - Ph.D., University of Tsukuba, Japan
- RESEARCH INTERESTS**
- Designs of Novel Drug Delivery and Nanomedicine in Theranostics
 - Bio-Nano Polymers for Biomedical Applications
 - In vitro – in vivo disease models



MEDICAL INSTRUMENTATION DEPARTMENT



PHẠM THỊ THU HIỀN
Department Chair,
Assoc. Prof.
Email: pthien@hcmiu.edu.vn

- EDUCATION**
- Cao Lãnh High School, Đồng Tháp
 - BE., HCMC University of Technology
 - MS., Southern Taiwan Uni. Science and Technology, Taiwan
 - Ph.D., National Cheng Kung Uni., Taiwan
- RESEARCH INTERESTS**
- Polarized light-tissue studies
 - Applications of Artificial Intelligence (AI) or signal/image processing
 - Cancer detection (skin, liver, and breast...) or cell/tissue characterization
 - Noninvasive glucose measurement
 - Laser/LED applications.



NGÔ THỊ LỆ
Ph.D., Lecturer
Email: ngothi@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, Gia Lai
 - BE., HCMC University of Technology
 - MS., Southern Taiwan University of Science and Technology, Taiwan
 - Ph.D., Korea University, Korea
- RESEARCH INTERESTS**
- Artificial intelligence, pattern recognition
 - Image/signal processing
 - Brain-computer interface, cognitive engineering
 - Mental disorder and neurodegeneration detection and interventions.



LÊ NGỌC BÍCH
Ph.D., Lecturer
Email: lbich@hcmiu.edu.vn

- EDUCATION**
- Long Bình High School, Tiền Giang
 - BE., HCMC University of Technology
 - MS., Southern Taiwan University of Science and Technology, Taiwan
 - Ph.D., Southern Taiwan University of Science and Technology, Taiwan
- RESEARCH INTERESTS**
- Medical device: robotics; measurement instrument; assisting devices; application of AI, machine learning and big data
 - MEMS: PZT thin film, pressure sensor, SAW sensor
 - Microfluidics: MicroPump, MicroMixer, Lab-on-a-Chip
 - Optics: manufacturing technology, thin film coating.



NGUYỄN THÀNH QUÀ
Ph.D., Lecturer
Head of Laboratories
Email: ntqua@hcmiu.edu.vn

- EDUCATION**
- Gò Vấp High School, HCMC
 - BE., HCMC University of Technology
 - MS., Seoul National University, Korea
 - Ph.D., Seoul National University of Science and Technology, Korea
- RESEARCH INTERESTS**
- Postdoctoral Fellow, Korea Institute of Science and Technology (KIST), Korea
 - Low-cost microfluidics and Lab-on-a-chip
 - Transdermal drug delivery via microneedles patch
 - Organ-on-a-chip technology.



TRẦN LÊ GIANG
Ph.D., Lecturer
Email: giangt@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương Gifted High School, Bình Dương
 - BE., International University, HCMC
 - MS., Seoul National University of Science and Technology, Korea
 - Ph.D., Seoul National University of Science and Technology, Korea
- RESEARCH INTERESTS**
- Sensors: piezoresistive and piezoelectric
 - Microneedle: fabrication and biomedical application
 - Medical Instrumentation.



NGUYỄN TẤN NHỰT
Ph.D., Lecturer
Email: ntthong@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Trãi High School, Bình Dương
 - BE., Ho Chi Minh City University of Technology and Education, HCMC
 - MS., Ho Chi Minh City University of Technology and Education, HCMC
 - Ph.D., University of Technology of Compiegne, France
- RESEARCH INTERESTS**
- Postdoc, University of Caen Normandy, France and University of Technology of Compiegne, France.
 - Biomechanics, AI for Healthcare
 - Statistical Shape Modeling
 - Computer Vision for Biomedical Engineering
 - Serious Games for Rehabilitation.



HÀ THỊ THANH HƯƠNG
Department Chair
Ph.D., Lecturer
Email: htthuong@hcmiu.edu.vn

- EDUCATION**
- VNU-HCM High School for the Gifted
 - BS., University of Science, VNU, HCMC
 - BE., Nong Lam University, HCMC
 - Ph.D., Stanford University, US
- RESEARCH INTERESTS**
- Neural Engineering: human-centered design, instrumentation and application
 - Nutritional, pharmaceutical and cognitive neuroscience
 - Neurodegeneration and Neurological Disorders.



HUỖNH CHẤN KHÔN
Assoc. Prof.
Email: tckhon@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, HCMC
 - BS., University of Science, VNU, HCMC
 - MS., Ajou University, Korea
 - Ph.D., University of Dusseldorf, Germany
- RESEARCH INTERESTS**
- Bioactive Scaffold Design for Tissue Engineering
 - Biomolecular Engineering
 - Cell-Material Interaction
 - Low cost microfluidic.
 - Point of care diagnostics.



ĐOÀN NGỌC HOAN
Ph.D., Lecturer
Email: dngoc@hcmiu.edu.vn

- EDUCATION**
- Thống Nhất B High School, Đồng Nai
 - BS., Nong Lam University, HCMC
 - MS., University of Science, VNU, HCMC
 - Ph.D., Sungkyunkwan University, Korea
- RESEARCH INTERESTS**
- DNA and Protein Chip and POC devices
 - Synthesis of metal-organic framework for biomedical applications
 - Exosome/liposome-based drug delivery.



TRƯƠNG PHƯỚC LONG
Ph.D., Lecturer
Email: tplong@hcmiu.edu.vn

- EDUCATION**
- Bình Chánh High School, HCMC
 - BS., University of Science, VNU, HCMC
 - MS., University of Science, VNU, HCMC
 - Ph.D., Sungkyunkwan University, Korea
- RESEARCH INTERESTS**
- Biomedical science, stem cell, and cancer stem cell
 - Drug resistance, and drug screening in cancer
 - Dermatology/inflammatory skin disorder, skin regeneration.



TÔ THỊ NGỌC HÂN
Ph.D., Lecturer
Email: ttngoc@hcmiu.edu.vn

- EDUCATION**
- Bến Tre High School for the Gifted, Bến Tre
 - BS., International University, VNU HCMC
 - B-Med, The University of Melbourne, Australia
 - M-Biomed, The University of Melbourne, Australia
- RESEARCH INTERESTS**
- Drug discovery
 - Antimicrobial compound
 - Bioactive natural products.



NGUYỄN DƯƠNG ĐỨC ANH
M-Biomed, Lecturer
Email: anhnd@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Bình Khiêm High School for the gifted, Quảng Nam
 - Auckland International College, New Zealand
 - B-Med, The University of Melbourne, Australia
 - M-Biomed, The University of Melbourne, Australia
- RESEARCH INTERESTS**
- Drug discovery
 - Antimicrobial compound
 - Bioactive natural products.

SECRETARIES



TỪ THỊ TUYẾT NGA
Secretary
Email: ttngoc@hcmiu.edu.vn

- EDUCATION**
- Tây Ninh High School, Bình Định
 - BE., Biotechnology, International University, VNU HCMC



BÙI THỊ HỒNG ANH
Secretary
Email: bthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Văn Tấn High School, HCMC
 - Bachelor Of Economics, University of Transport and Communications, HCMC



NGUYỄN HOÀNG THÚY KHANH
Secretary
Email: nhthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Văn Tấn High School, HCMC
 - Bachelor Agricultural Business, Nong Lam University, HCMC



ĐẶNG NGỌC THẢO NHI
Head of Laboratories
Email: dngoc@hcmiu.edu.vn

- EDUCATION**
- Gia Định High School, HCMC
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Bone and dental regeneration.



TRẦN NGỌC VIỆT
Laboratory Technician
Email: tviet@hcmiu.edu.vn

- EDUCATION**
- Hùng Vương High School, Gia Lai
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Medical Instrumentation
 - Bio-Signal and Image Processing
 - Data Science for Biomedical Engineering
 - Lab on the Chip.



NGUYỄN THỊ THANH NGỌC
Laboratory Technician
Email: ntthong@hcmiu.edu.vn

- EDUCATION**
- Cần Đuộc High School, Long An
 - BS., Medicine and Pharmacy, HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Wound healing
 - Microfluidic.



NGUYỄN LÊ Ý
Laboratory Technician
Email: nly@hcmiu.edu.vn

- EDUCATION**
- Hermann Greiner, Đà Lạt
 - BE., Biomedical Engineering, International University, VNU HCMC
 - ME., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Biomedical Instrumentation
 - Biosignal and Image Processing
 - Data Science for Biomedical Engineering
 - Software Programming.



NGUYỄN THỊ THU HÀ
Laboratory Technician
Email: ntthanh@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Hữu Nhuận High School, HCMC
 - BS., University of Science, VNU, HCMC
- RESEARCH INTERESTS**
- Nanomedicine in Therapeutics
 - Treatment of inflammation and cancer
 - In vitro - in vivo diseased models.



NGUYỄN THỊ THỦY KIỀU
Laboratory Technician
Email: tdkieu@hcmiu.edu.vn

- EDUCATION**
- Song Đức High School, Cà Mau Province
 - BS., Physics Teacher Education, Can Tho University
 - MS., Materials Science, University of Science, VNU HCMC
- RESEARCH INTERESTS**
- Bioactive compound
 - Antibacterial materials
 - Biomimetic scaffolds.



PHAN THỊ THANH TÂM
Laboratory Technician
Email: pttam@hcmiu.edu.vn

- EDUCATION**
- Nguyễn Hữu Nhuận High School, HCMC
 - BS., Biotechnology, International University, VNU HCMC
- RESEARCH INTERESTS**
- Bioactive compound
 - Antibacterial materials
 - Biomimetic scaffolds.



NGUYỄN THỊ PHƯƠNG THẢO
Laboratory Technician
Email: npthao@hcmiu.edu.vn

- EDUCATION**
- Đặng Huy Trứ High School, Thừa Thiên Huế
 - BS., Biotechnology, International University, VNU HCMC
- RESEARCH INTERESTS**
- Tissue Engineering, Regenerative Medicine
 - Antibacterial material.



LÊ TRẦN MỸ AN
Teaching Assistant
Email: ltran@hcmiu.edu.vn

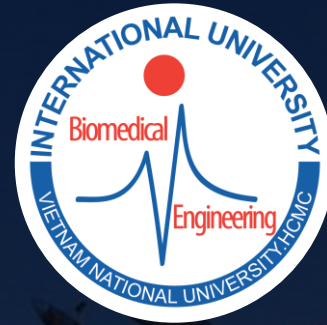
- EDUCATION**
- Bình Minh High School, Vĩnh Long
 - BE., Biomedical Engineering, International University, VNU HCMC
- RESEARCH INTERESTS**
- Biomaterials
 - Tissue Engineering, Regenerative Medicine.



HUỖNH THỊ THANH TRÚC
Laboratory Technician
Email: httruc@hcmiu.edu.vn

- EDUCATION**
- Chu Văn An High School, An Giang
 - BE., Machine Manufacturing Technology, HCMC University of Technology and Education, HCMC
- RESEARCH INTERESTS**
- Mechanical Design
 - 3D printing Technology

TECHNICAL & TEACHING STAFF



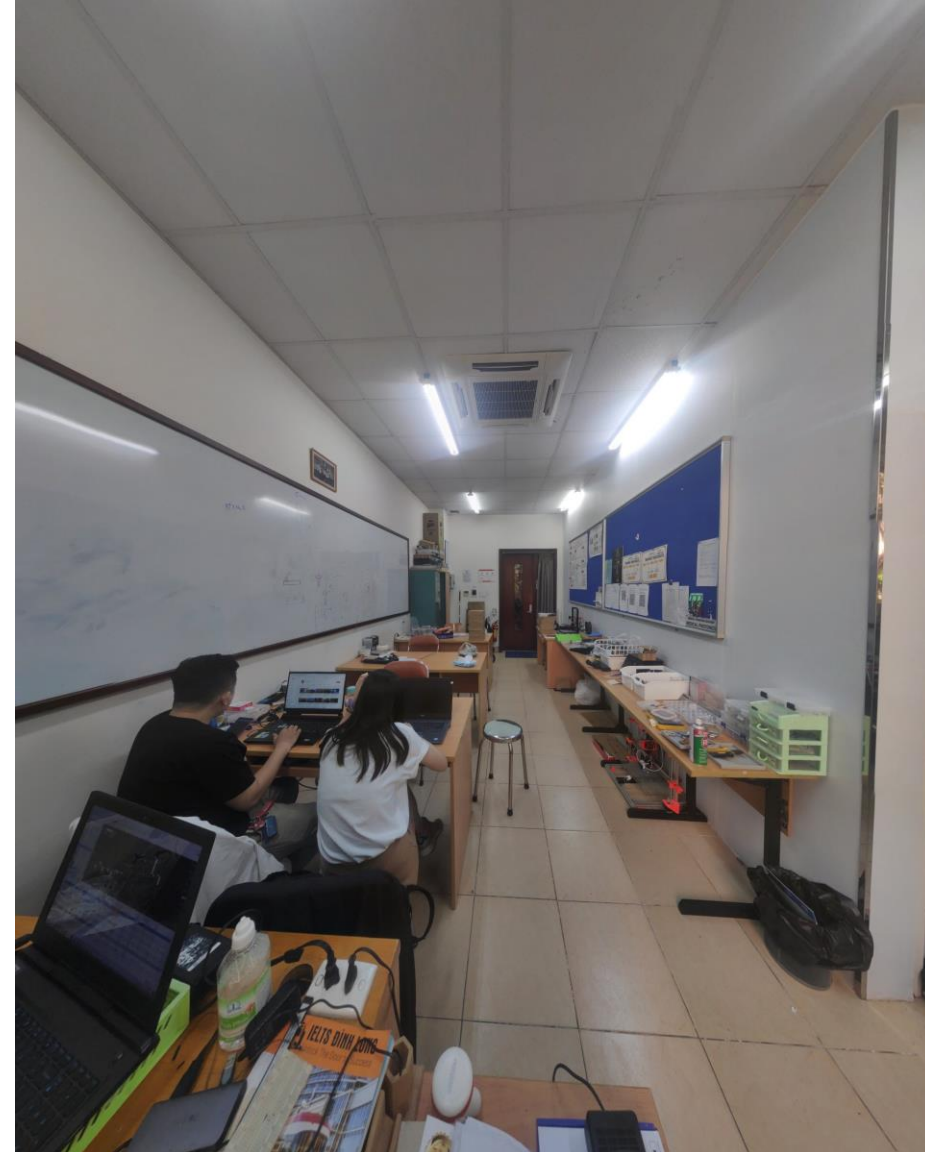
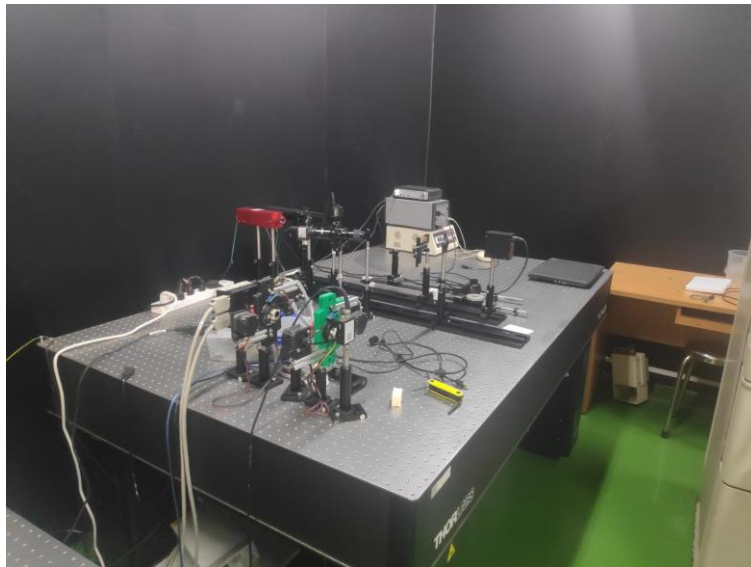
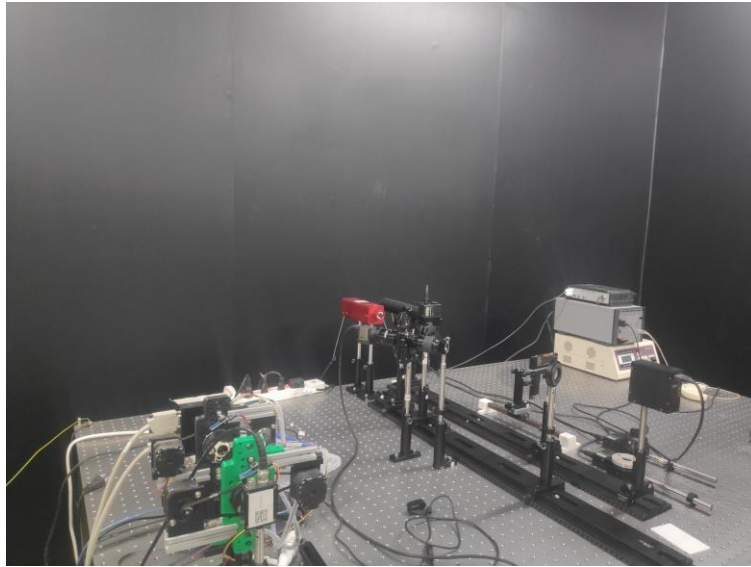
thank you

CONTACT US: Vòng Bính Long, Associate Professor
Vice Dean of School of Biomedical Engineering
International University of Vietnam National Universities
HCM Ville, Vietnam
Email: nthiep@hcmiu.edu.vn
Website: www.hcmiu.edu.vn/bme

Medical Instrumentation Lab



Biophotonic lab



Tissue Engineering and Regenerative Medicine Lab



Students carried out experiments at the Tissue Engineering and Regenerative Medicine Laboratory under the guidance of Assoc. Prof. Nguyen Thi Hiep



Laboratory equipment for research and teaching with modern machines and tools

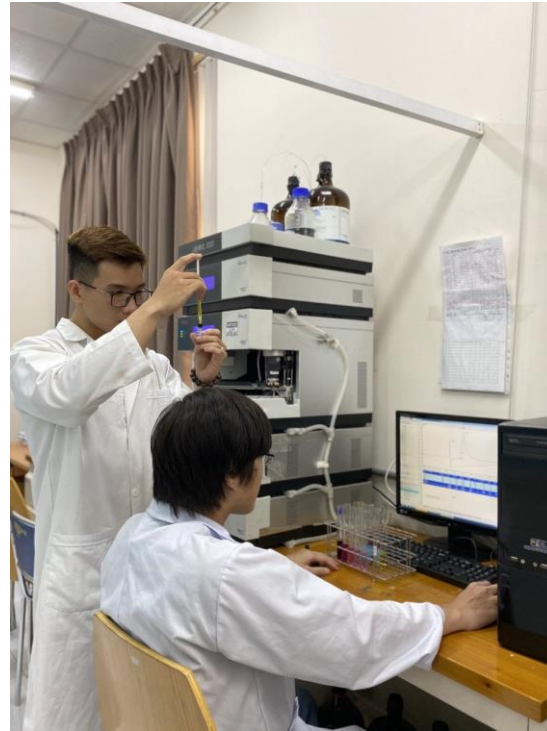


Some typical products in the laboratory

Pharmaceutical Engineering Lab



Students carried out experiments at the Pharmaceutical Engineering Laboratory



Laboratory equipment for research and teaching with modern machines and tools



Some typical products in the laboratory

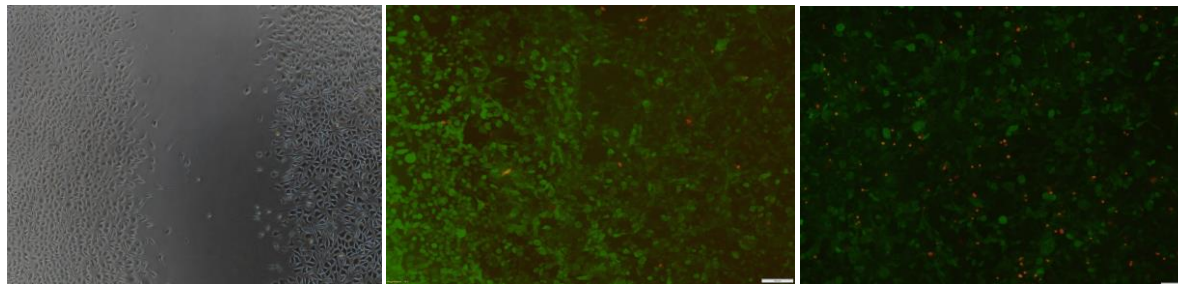
Tissue Culture and SEM lab



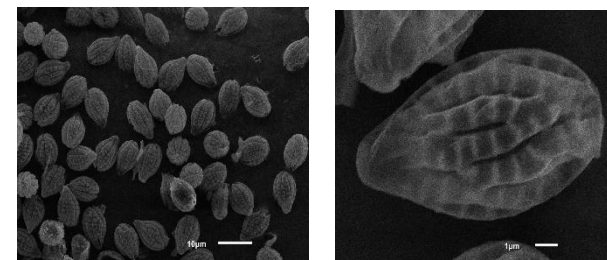
Graduate students conducted in vitro experiments to assess material biocompatibility and cell-biomaterial interaction at the In Vitro Laboratory



Technician is working with the scanning electron microscope



Scratch assay to assess cell migration under effect of biomaterial extract (A), and live/dead staining of positive control (B) and biomaterial sample (C)



(A) (B)
SEM image of reishi mushroom spores at 1500x (A) and 10000x (B) magnification