

HOAN THANH NGO

Curriculum Vitae



Duke University, Durham, NC, USA 27708

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EDUCATION

Ph.D. student in Biomedical Engineering, **Duke University**, August 2011 - current
Major area: Biophotonics, Advisor: Prof. Tuan Vo-Dinh

M.S. in Control and Instrument Engineering, **Korea Maritime University**, August 2008
Dissertation: *A Study on a Low-Cost Attitude and Heading Estimation System for ROVs* (Advisor: Prof. Ha Yun Su)

B.Eng. in Mechatronics Engineering, Silver Medal, **University of Technology**, member of Vietnam National Universities in HCM City, April 2006
Dissertation: *Research, Design and Manufacture Bioreactor used for the rapid multiplication of Begonia shoots (Begonia tuberosus), a valuable ornamental plant* (Advisors: Dr. Duong Tan Nhut and Nguyen Thai Anh Tuan)

AWARDS & FELLOWSHIPS

Graduate study

Fitzpatrick Foundation **Scholars** (2014-2016)

Best Poster Award, Duke University Fitzpatrick Institute for Photonics 2015 Symposium – World Photonics Forum (March 9-10, 2015)

Best Paper Award from SPIE, The 5th International Conference on Biomedical Engineering in Vietnam (June 16-18, 2014)

Fitzpatrick Institute of Photonics **Chambers Fellow** (2011)

Vietnam Education Foundation **Fellow** (2011)

Undergraduate study

Graduated as one of the **Top Students** and received **Silver Medal** from president of the University of Technology (2006)

Four **certificates of merit** for having attained achievements in study from dean of the Mechanical Department (2001-2006)

Semester scholarship (2001-2006)

Champion of a robot contest organized by the University of Natural Science, HCM City (2005)

Certificate of merit for achievements in ROBOCON Vietnam 2005, the biggest robot contest in Vietnam (2005)

Intel Vietnam scholarship (2002)

PUBLICATIONS

Journal Paper

HT Ngo, N Gandra, AM Fales, SM Taylor, T Vo-Dinh, “Sensitive DNA detection and SNP discrimination using ultrabright SERS nanorattles and magnetic beads for malaria diagnostics”, *Biosensors and Bioelectronics*, 81, 8–14, 2016

HT Ngo, HN Wang, AM Fales, T Vo-Dinh, “Plasmonic SERS biosensing nanochips for DNA detection”, *Analytical and Bioanalytical Chemistry*, 408 (7), 1773-1781, 2016

T Vo-Dinh, Y Liu, AM Fales, **HT Ngo**, HN Wang, JK Register, HK Yuan, SJ Norton, GD Griffin, “SERS Nanosensors and Nanoreporters: Golden Opportunities in Biomedical Applications”, *WIREs Interdisciplinary Reviews: Nanomedicine & Nanobiotechnology*, 7 (1), 17-33, 2015

HT Ngo, HN Wang, AM Fales, BP Nicholson, CW Woods, T Vo-Dinh, “DNA bioassay-on-chip using SERS detection for dengue diagnosis”, *Analyst* 139 (22), 5656-5660, 2014

HT Ngo, HN Wang, T Burke, GS Ginsburg, T Vo-Dinh, “Multiplex detection of disease biomarkers using SERS molecular sentinel-on-chip”, *Analytical and Bioanalytical chemistry* 406 (14), 3335-3344, 2014

HT Ngo, HN Wang, AM Fales, T Vo-Dinh, “Label-free DNA Biosensor Based on SERS Molecular Sentinel on Nanowave Chip”, *Analytical Chemistry* 85 (13), 6378-6383, 2013

T Vo-Dinh, AM Fales, GD Griffin, CG Khoury, Y Liu, **HT Ngo**, SJ Norton, JK Register, HN Wang, HK Yuan, “Plasmonic nanoprobe: from chemical sensing to medical diagnostics and therapy”, *Nanoscale* 5 (21), 10127-10140, 2013

YS Ha, **HT Ngo**, “A Tilt and Heading Estimation System for ROVs using Kalman Filters”, *Journal of the Korean Society of Marine Engineering*, Vol. 32, No. 7, 11 (ISSN 1226-9549), 2008

Conference Presentation

HT Ngo, HN Wang, T Burke, CW Woods, GS Ginsburg, T Vo-Dinh, “Multiplex DNA Biosensor for Viral Infection Diagnosis Using SERS Molecular Sentinel-on-Chip”, *The 5th International Conference on the Development of Biomedical Engineering in Vietnam*, 2014

HT Ngo, CV Nguyen, TMH Nguyen, and TV Vo, “A Portable Respiratory Monitor using Respiratory Inductive Plethysmography ”, *The 4th International Conference on the Development of Biomedical Engineering in Vietnam IFMBE Proceedings*, 222-225, 2013

E Lian, J Hachadorian, **HT Ngo**, TV Vo, “A Novel Electronic Cervical Range of Motion Measurement System ”, *The 3rd International Conference on the Development of Biomedical Engineering in Vietnam IFMBE Proceedings*, 140-143, 2010

LM Hoa, DN Huan, NH Thao, **HT Ngo**, TQD Khoa, NHM Tam, VV Toi, “Relationship between Dental Occlusion and Arm Strength ”, *The 3rd International Conference on the Development of Biomedical Engineering in Vietnam IFMBE Proceedings*, 266-269, 2010

HT Ngo, YS Ha, SS Park, YS Oh, HS Kim, “Goal Seeking Control of an AUV using Fuzzy Controller ”, *Proceedings of the KOSME*, Busan, Korea, 79-84, 2007

Poster Presentation

HT Ngo, N Gandra, AM Fales, SM Taylor, T Vo-Dinh, “Sensitive SERS-based DNA Target Detection and Single Nucleotide Mutation Identification for Molecular Diagnostics and Global Health”, *Fitzpatrick Institute of Photonics Annual Symposium*, Durham, North Carolina, USA, 2016

HT Ngo, HN Wang, AM Fales, BP Nicholson, CW Woods, T Vo-Dinh, “DNA Biosensor for Dengue Diagnosis using Strand Displacement and SERS Nanowave Chip”, *Fitzpatrick Institute of Photonics Annual Symposium – World Photonics Forum*, Durham, North Carolina, USA, 2015

HT Ngo, HN Wang, T Burke, CW Woods, GS Ginsburg, T Vo-Dinh, “Multiplex DNA Detection Using SERS Molecular Sentinel on Nanowave Plasmonic Chip”, *Fitzpatrick Institute of Photonics Annual Symposium*, Durham, North Carolina, USA, 2014

HT Ngo, CV Nguyen, TMH Nguyen, TV Vo, “A Portable Breathing Rate Monitor using Respiratory Inductive Plethysmography for Developing Countries”, *Biomedical Engineering Society Annual Meeting*, Hartford, Connecticut, USA, 2011

RESEARCH & TEACHING EXPERIENCES

Research Assistant, Vo-Dinh Lab, Duke University, Durham, North Carolina, USA
(August 2011 - current)

Lecturer, Biomedical Engineering Department, International University, Vietnam
National University HCM City, Vietnam (April 2009 - June 2011)

Lecturer, School of Electrical Engineering, International University, Vietnam National
University HCM City, Vietnam (December 2008 - April 2009)

Research Assistant, Intelligent Robot Lab, Korea Maritime University, Busan, Korea
South (September 2006 - October 2008)

Research Assistant, R&D Institute, SonarTech Ltd., Co., Busan, Korea (September 2006
- July 2008)

Lecturer, Mechatronics Department, Nong Lam University, Ho Chi Minh City, Vietnam
(May 2006 - August 2006)

NANOSCIENCE SKILLS

Scanning Electron Microscope, Transmission Electron Microscope, Atomic Force
Microscope, Near-field Scanning Optical Microscope, X-ray Photoelectron Spectroscopy,
Clean room skills, E-beam & Thermal Evaporation, RIE, PECVD, Photolithography,
Nanoparticle synthesis

OPTICAL & BIOLOGICAL SKILLS

Raman Spectroscopy, UV-Vis Spectroscopy, Reflectance Spectroscopy, Fluorescence
Spectroscopy & Imaging, Cell Culture, Nucleic Acid Detection

SOFTWARE SKILLS

Matlab, Labview, C/C++, Visual Basic, Microcontroller and Digital Signal Controller
Programming, Electronics Circuit and PCB Design, 3D modeling (SolidWorks),
COMSOL Multiphysics, Zemax

REFERENCES

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R. Eugene Susie E. Goodson Professor of Biomedical Engineering
Professor of Chemistry
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