

## HIEU PHAM TRUNG NGUYEN, Ph.D.

### I. ACADEMIC APPOINTMENTS

Associate Professor	Texas Tech University	September 2023 - Present
Associate Professor	New Jersey Institute of Technology	September 2020 – August 2023
Assistant Professor	New Jersey Institute of Technology	September 2014 – August 2020
Postdoctoral Researcher	McGill University	June 2012 – August 2014

### II. EDUCATIONS

<i>Doctoral of Philosophy</i> , Ph.D., McGill University,	January 2010 – May 2012
<i>Master of Science</i> , Ajou University	March 2006 – August 2009
<i>Bachelor of Science</i> , Vietnam National University	September 2001 – September 2005

### III. HONORS AND AWARDS

- 2023 Hashimoto Award (for outstanding thesis dissertation) – NJIT, Ph.D. student – Ravi Teja Velpula)
- 2022 Best graduate student award, Newark College of Engineering – NJIT (Ph.D. student – Ravi Teja Velpula)
- SPIE scholarship in Optics and Photonics 2021 (Ph.D. student – Ravi Teja Velpula)
- NSF CAREER Award, 2020
- NJIT-NCE Saul K Fenster Innovation in Engineering Education Award, 2019
- SPIE scholarship in Optics and Photonics 2018 (Ph.D. student – Moab Rajan Philip received this award, for his potential long-range contributions to the field of optics, photonics, or related field)
- SPIE scholarship in Optics and Photonics 2012 (for his potential long-range contributions to the field of optics, photonics, or related field)

### IV. RESEARCH INTERESTS

(1) *epitaxial growth, fabrication, and characterization of nanoscale nitride semiconductors*; (2) *nanostructured photonics including light-emitting diodes (LEDs), laser diodes, waveguides, and photodetectors*; (3) *light-emitters for flexible electronics, displays, and AR/VR applications*; (4) *surface/air/water disinfection*; (5) *nanostructured single photon sources for quantum photonics*; (6) *solar cells and solar fuel cells*; and (7) *III-nitride and oxide based memory devices and field-effect transistors (FETs), and high-electron-mobility transistors (HEMTs)*.

### VI. PUBLICATIONS

#### BOOKS

- [B.1] T. R. Lenka, and **H. P. T. Nguyen**, “Nanoelectronics Devices and Applications”, Bentham, 2023 (In Progress)
- [B.2] T. R. Lenka, and **H. P. T. Nguyen**, “HEMT Technology and Applications”, Springer, 2022

#### BOOK CHAPTERS

- [BC.1] R. Singh, T. R. Lenka, **H. P. T. Nguyen**, “3D Simulation Study of Laterally Gated AlN/ $\beta$ -Ga<sub>2</sub>O<sub>3</sub> HEMT Technology for RF and High-Power Nanoelectronics”, *HEMT Technology and Applications*, Springer, 2022
- [BC.2] R. Singh, T. R. Lenka, **H. P. T. Nguyen**, “Evolution and Present State-of-Art Gallium Oxide HEMTs–*The Key Takeaways*”, *HEMT Technology and Applications*, Springer, 2022
- [BC.3] R. T. Velpula, B. Jain, D. Samadrita, T. R. Lenka, and **H. P. T. Nguyen**, “Advantages of Polarization Engineered Quantum Barriers in III-Nitride Deep Ultraviolet Light-Emitting Diodes: An Electron Blocking Layer Free Approach”, *Micro and Nanoelectronics Devices, Circuits and Systems*, Springer, 2022

- [BC.4] R. Singh, T.R. Lenka, D. Panda, R.T. Velpula, B. Jain, H.Q.T. Bui, and H.P.T. Nguyen. “RF Performance of Ultra-wide Bandgap HEMTs, *Emerging Trends in Terahertz Solid State Physics and Devices*”, Springer, 2020
- [BC.5] R. Singh, T. R. Lenka, D. Panda, R. T. Velpula, B. Jain, H. Q. T. Bui, and H. P.T. Nguyen, “Ga2O3 Based Heterostructure FETs (HFETs) for Microwave and Millimeter-Wave Applications”, *Emerging Trends in Terahertz Engineering and System Technologies*, Springer, 2020
- [BC.6] Q. Wang, **H. P. T. Nguyen**, S. Zhao, and Z. Mi, “Axial GaN nanowire-based light emitting diodes,” chapter in *Wide band gap semiconductor nanowires for optical devices*, edited by V. Consonni and G. Feuillet, **Hermes Science Publishing**, Published online on August 08, 2014

#### **PATENTS**

- [P.1] **H. P. T. Nguyen**, R. T. Velpula, and B. Jain, “Resistive Switching in a RRAM Device”, US Provisional Patent, Serial No. 63/410,293
- [P.2] Z. Mi, **H. P. T. Nguyen**, S. Zhao, "Methods and devices for solid state nanowire devices" (US 2016/0027961 A1)
- [P.3] Z. Mi, **H. P. T. Nguyen**, and K. Cui, "High efficiency broadband semiconductor nanowire devices and methods of fabricating without foreign metal catalysis", US 2012/0205613

#### **PEER-REVIEWED PAPERS AND CONFERENCE PRESENTATIONS (>100 PAPERS, >100 PRESENTATIONS)**

##### **Service to Community/Government**

- Reviewer for proposals from the National Science Foundation (NSF)
- Reviewer for proposals from Foundation for Polish Science
- Reviewer for Ton Duc Thang University Foundation for Science and Technology Development, Vietnam
- Reviewer for proposals to the Natural Sciences and Engineering Research Council of Canada (NSERC), Canada Foundation for Innovation (CFI)
- Reviewer for proposal from the Competitive Research Grant Program, King Abdullah University of Sciences and Technology (KAUST)

##### **Technical Committee member of**

- 33<sup>rd</sup> North American Conference on Molecular Beam Epitaxy, New York, 2017 (Session Chair)
- The 11<sup>th</sup> International Symposium on Semiconductor Light Emitting Diodes, 8-12 October 2018 in Banff, Canada (Publication Co-Chair)
- The 21<sup>st</sup> IEEE International Conference on High Performance Switching and Routing (2020 HPSR), 11-14 May, 2020, Newark, New Jersey (Local Arrangement Chair)
- The IEEE International Conference on Micro/Nanoelectronics Devices, Circuits and Systems (2021, 2022, 2023, 2024)
- Compound Semiconductor Week (2022), Michigan (Chair of Area on Nanostructures)
- The 1<sup>st</sup> International Conference on Advanced Smart Materials and Structures 2022, Vietnam (Co-host)
- SPIE Photonics West Conference 2023, California (Session Chair)
- Served as a judge for several scientific activities and STEM competitions for high schools in North Jersey area those include the Terra North Jersey Regional Science Fair (NJRSF), Dana Knox Research Showcase, and the annual BCA Research EXPO

##### **Editorial activity**

- Editor of Material Science in Semiconductor Processing (Elsevier)
- Associate Editor of Frontiers in Materials (Frontiers)
- Early-Career Editorial Board Member of Materials Futures (IOP).
- Editorial Board of Micromachines (MPDI)