

Assoc. Prof. Dr. Dang The Ngoc

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**Job Titles**

Vice Dean, in charge of Faculty of Telecommunications, Posts and Telecommunications Institute of Technology, Vietnam

Education and Qualifications

- 1994–1999: Engineering Degree in Electronic and Telecommunication, Hanoi University of Science and Technology, Vietnam.
- 2002–2005: Master Degree in Electronic and Telecommunication, Posts and Telecommunications Institute of Technology, Vietnam.
- 2007–2010: Doctoral Degree in Computer Science and Engineering, The University of Aizu, Japan.

Job Experiences

- 1999–present: Lecturer at Posts and Telecommunications Institute of Technology, Vietnam.
- 2011: Invited Researcher at FOTON-ENSSAT Lab., Université de Rennes 1, France.
- 2012, 2013, 2015, 2017: Visiting Researcher at Computer Communications Lab., The University of Aizu, Japan.

Teaching Experiences

- Undergraduate Program in Electronic and Telecommunication Engineering:
 - TEL1415 - Mobile Communications
 - TEL1462 - RF Transceiver Engineering
 - TEL1456 - Wireless Networks
 - TEL1436 - Broadband Wireless Technologies
- Graduate Program in Telecommunication Engineering:
 - Advanced Wireless Communications
 - Broadband Wireless/Optical Access Technologies

Research (over the last 5 years)**Research Interests**

- Optical fiber and optical wireless communications (FSO, VLC): systems design, performance analysis, and optimization.

- Enabling technologies and techniques for next-generation wireless networks.
- Radio over fiber and backhaul networks.
- Quantum Key Distribution

Research Projects

- Outage Performance of RIS-Aided FSO-Based Ground-Air Integrated Vehicular Networks. Grant No. 12B4-HV-2023-VT. Role: Project Member. Year: 2023. University Project
- Research on quantum communication technology for high-security requirements in 6G mobile networks. Grant No. DT.26/23. Role: Project Manager. Year: 2023. Ministry Project
- Design and security analysis of satellite-based free-space quantum key distribution systems for wireless and vehicular networks. Grant No. 102.02-2019.08. Role: Project Manager. Year: 2019 - 2022. NAFOSTED Project
- Cross-Layer Design and Optimization of High-Altitude Platform based Optical Communication Networks. Grant No. 102.02-2018.305. Role: Project Member. Year: 2018 - 2022. NAFOSTED Project

Book Publication

- Dang The Ngoc, Pham Thi Thuy Hien "Nguyen ly va hieu nang he thong truyen thong quang khong day", Nha xuất bản thông tin và truyền thông, ISBN:3639024168, Oct. 2024.

Journal/Conference Publication

- Minh B. Vu, Ngoc T. Dang, Sangmi Moon, and Oh-Soon Shin, Van-Dinh Nguyen, "Optimizing Mixed FSO-RF Downlink Systems with Active RIS and SLIPT-enabled UAV-BSs," IEEE Transactions on Communications, vol. X, no. Y, pp. 2026.
- Minh B. Vu, Ngoc T. Dang, and Oh-Soon Shin, "Optimization of Mixed FSO-RF Downlink Systems with SLIPT-enabled UAV Base Station and HAP-mounted Optical RIS," IEEE Access, vol. X, no. Y, pp. 2026. DOI: 10.1109/ACCESS.2026.3653293
- T. H. Do, H. D. Le, T. V. Nguyen, N. T. Dang and A. T. Pham, "DRL-Based Optimization for FSO-based UAV Systems With XP-HARQ and Adaptive Rate/Power Control," IEEE Communications Letter, vol. 30, pp. 432-436, 2026. DOI: 10.1109/LCOMM.2025.3639171
- Thang V. Nguyen, Hien T. T. Pham, Ngoc T. Dang, "Optimizing UAV Trajectories in Optical IRS-Aided Hybrid FSO/RF Aerial Access Networks Using DRL Technique," EAI Endorsed Transactions on Industrial Networks and Intelligent Systems, vol. 12, iss. 4, pp. 2025. DOI: 10.4108/eetinis.124.10134
- Hoa T. Le, Thang V. Nguyen, Hien T. T. Pham, Ngoc T. Dang, "Leveraging RIS

and QoS-Aware Transmission Rate for Energy-Efficient FSO Non-Terrestrial Networks," IEEE Transactions on Aerospace and Electronic Systems, vol. 61, no. 6, pp. 16528-16540, Dec. 2025. DOI: 10.1109/TAES.2025.3597911

- Thang V. Nguyen, Hien T. T. Pham, Ngoc T. Dang, "Joint Adaptive Modulation and Power Control Scheme for Energy Efficient FSO-based Non-Terrestrial Networks ," EAI Endorsed Transactions on Industrial Networks and Intelligent Systems, vol. 12, no. 1, 2025.
- Dang Tien Sy, Minh Q. Vu, and Ngoc T. Dang, "Design and Performance of Entanglement-based Underwater VLC/QKD Systems," Opt. Continuum, vol. 3, pp. 1817-1832, 2024.
- Huynh Thi Thanh Binh, Nguyen Thi Hanh, Nguyen Phuc Tan, La Van Quan, Dang The Ngoc, Nguyen Huu Nhat Minh, Huynh Cong Phap, "A heuristic node placement strategy for extending network lifetime and ensuring target coverage in mobile wireless sensor networks," Evolutionary Intelligence, pp. 1-18, 2024.
- Thang V. Nguyen, Hoa T. Le, Hien T. T. Pham, Vuong V. Mai, and Ngoc T. Dang, "Enhancing Design and Performance Analysis of Satellite Entanglement-based CV-QKD/FSO Systems," IEEE Access, vol. 11, pp. 112097-112107, 2023.
- Thang V. Nguyen, Hoa T. Le, Hien T. T. Pham, Ngoc T. Dang "Availability of Free-Space Laser Communication Link with the Presence of Clouds in Tropical Regions," EAI Endorsed Transactions on Industrial Networks and Intelligent Systems, vol. 10, no. 3, 2023.
- Dieu Linh Truong and The Ngoc Dang, "Optimal multiple FSO transceiver configuration for using on High-altitude platforms" IEEE Access, vol. 11, pp. 47053-47069, May 2023.
- Hang T. T. Phan, Minh B. Vu, Hien T. T. Pham, and Ngoc T. Dang, "Satellite continuous-variable quantum key distribution systems using code-division multiple access," Opt. Continuum, vol. 2, no. 2, pp. 289-302, Feb. 2023.
- La Van Quan, Nguyen Thi Hanh, Huynh Thi Thanh Binh, Vu Van Toan, Dang The Ngoc, Bui Thu Lam, "A Bi-Population Genetic Algorithm Based on Multi-Objective Optimization for A Relocation Scheme with Target Coverage Constraints in Mobile Wireless Sensor Networks," Journal of Expert Systems With Application, vol. 217, 2023.
- Dieu Linh Truong, Xuan Vuong Dang, The Ngoc Dang, "Survivable Free Space Optical Mesh Network using High-Altitude Platforms," Optical Switching and Networking, vol. 47, p. 100716, 2023.

Signature

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