INFORMATION ON DOCTORAL DISSERTATION

Title of the thesis:

SOLUTIONS FOR THE TRANSMISSION AND RELAYING OF OPTICAL SIGNAL BASED ON HIGH-ALTITUDE PLATFORMS

Specified field of study: Telecommunications Engineering

Code of specialty: 9.52.02.08

Name of the candidate: **Nguyễn Thị Thu Nga**

Name of the research supervisor: **Assoc. Professor Đặng Thế Ngọc, Ph.D.**

Academic Institution: Posts and Telecommunications Institute of Technology

THE SCIENTIFIC CONTRIBUTIONS

The scientific contributions of the thesis are as follows:

1. Propose a method to improve the performance of high -altitude platform (HAP) based optical communication systems using optical-electrical-optical relaying.
2. Propose a design model and build an analytical model to evaluate the performance of a unidirectional all-optical transmission system based on HAP.
3. Propose a design model and build an analytical model to evaluate the performance of a bidirectional all-optical transmission system based on HAP.

ON PRACTICAL APPLICABILITY AND FURTHER STUDIES

The thesis proposes novel theoretical models provides analytical models for evaluating the performance of HAP- based relaying optical communication systems. The research contributions of this thesis could help for further studies as well as system designs and evaluation of the feasibility of HAP- based relaying optical communication systems. Besides, these research results also have potential application in research and education at the Universities.

Research supervisor **Candidate**

Assoc. Professor Đặng Thế Ngọc, Ph.D. **Nguyễn Thị Thu Nga**