（別紙様式６）

専攻分野及び研究計画

Field of Study and Research Plan

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name in full,  in your native language | พนาวัฒนกุล |  | ภาคิน |  |
| （姓名（自国語）） | , |
|  | (Surname) |  | (Given name) | (Middle name) |
| Name in Roman capital letters | PANAWATTANAKUL |  | PAKIN |  |
| (姓名（ローマ字）) | , |
|  | (Surname) |  | (Given name) | (Middle name) |
|  |  |  |  |  |
| Nationality | Thai | | | |
| （国　籍） |

Proposed study program in Japan (Outline your field of study on this side and the specific of your study program on the reverse side of this sheet. This section is one of the most important references for selection. The statement must be typewritten or written in block letters. Additional sheets of paper may be attached if necessary. If plagiarism or fraud is discovered after selection, the selection will be cancelled retroactively.)

（日本での研究計画；この研究計画は，選考の重要な参考となるので，表面に専攻分野の概要を，裏面に研究計画の詳細を具体に記入すること。記入はタイプ又は楷書によるものとし，必要な場合は別紙を追加してもよい。なお、採用後に不正、盗用等が判明した場合は遡って採用を取り消す。）

If you have Japanese language ability, write in Japanese. （相当の日本語能力を有する者は，日本語により記入すること｡）

　１　Present field of study（現在の専攻分野）

I am currently in my fourth year of studying Computer Engineering at Mahidol University International College. The curriculum provides a broad foundation in the computer field, covering programming, electronic circuits, networking, and computer system design. My academic interests focus on digital circuit design, computer architecture, operating systems, and FPGA design. This inspires me to pursue research in FPGA design in my master’s degree.

　２　Your research topic in Japan: Describe articulately the research you wish to carry out in Japan.

（渡日後の研究テーマ：日本においてどういった研究がしたいかを明確に記入すること）

I would like to research hardware acceleration of post-quantum cryptography on FPGAs. Currently, I am working on my senior project, which involves implementing a cryptographic accelerator on FPGA. Building on this experience, I aim to deepen my knowledge and focus on advanced algorithms such as post-quantum cryptography, for example, Kyber.

Through my research in Japan, I intend to design, implement, and evaluate FPGA-based accelerators for post-quantum key exchange mechanisms. The goal is to contribute to both theoretical understanding and practical applications, particularly in the field of secure embedded systems and future communication networks.

３　Study program in Japan: (Describe in detail and with specifics - particularly concerning the ultimate goal(s) of your research in Japan)

（研究計画：詳細かつ具体に記入し、特に研究の最終目標について具体的に記入すること。）

My master’s research will focus on FPGA-based accelerator of post-quantum cryptography. In the first year, I plan to improve my foundation in computing knowledge through course works at JAIST, while also conducting literature review on post-quantum cryptography and FPGA designs. In my second year, I will then develop FPGA implementation of cryptography accelerator. Then focus on optimization, applying techniques such as pipelining to improve performance, reduce computation time, and efficiency of resource utilization. I will conduct comparative comparison, to evaluate the effectiveness of FPGA-based accelerator.

Final Goal: The ultimate goal of my research is to design practical and efficient FPGA accelerators for post-quantum key exchange, contributing to secure embedded systems and future communication infrastructures.