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| Dissertation for Doctoral Degree |
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| Spectroscopic Studies on Photocatalytic Properties of Chiral Peptoid on UCNP and Applications for Molecular Diagnostics and Natural Product Synthesis |
| Soonshin Lee |
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| Department of Chemistry |
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| Gwangju Institute of Science and Technology |
|  |
| 2021 |

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UCNP위 카이랄 펩토이드의 광촉매 물성에 관한 분광학 연구와 분자진단 및 합성으로의 응용 |

Spectroscopic Studies on Photocatalytic Properties of Chiral Peptoid on UCNP and Applications for Molecular Diagnostics and Natural Product Synthesis

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A dissertation submitted to the faculty of Gwangju Institute of Science and Technology in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Chemistry

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Spectroscopic Studies on Photocatalytic Properties of Chiral Peptoid on UCNP and Applications for Molecular Diagnostics and Natural Product Synthesis

Soonshin Lee

Accepted in partial fulfillment of the requirements for

the degree of Doctor of Philosophy

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**Abstract (less than 1,000 words)**

**(Times New Roman, size 10, double space, first line 5-character indent)** We were born on this ground to have some historical mission of the national restoration. It is time to revive the shining spirit of our ancestors today, establish a posture of self-independence inside, and contribute to human co-prosperity outside. Therefore, we reveal our course of action and use it as an indicator of education.

With a sincere heart and a strong body, we learn and master our learning and skill; we develop our own natural qualities; and we cultivate the power of creation and the spirit of pioneering, using our situation as a springboard for advancement. It takes over the tradition of mutual assistance, which honors efficiency and substance with the public interest and order at the forefront, and takes over the tradition of mutual assistance rooted in reverence and faithfulness, thereby boosting the spirit of cheerful and warm cooperation. Realizing that the country develops on the basis of our creativity and cooperation, and that the country's fusion is the basis of my development, fulfilling the responsibilities and duties that follow freedom and rights, and raising the national spirit of participating in and serving the nation on its own.

Patriotic love is the path to our lives and the foundation for realizing the ideals of the free world. Let us look forward to the future of our glorious unified homeland that Gil will pass down to our descendants, and as a hardworking people with faith and pride, gather the wisdom of the people and create a new history with a ceaseless effort.

**Contents**

Abstract ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ i

 List of contents ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ iii

 List of tables ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ vi

 List of figures ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ vii

 I. INTRODUCTION ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 1

1. 1. OO OOO OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 1

1. 2. OO OO OOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 2

1. 2. 1. OO OOO OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 2

1. 2. 2. OO OO OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 3

 II. REVIEW OF RELA..... ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 5

2. 1. OO OOO OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 5

2. 2. OO O OOOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 9

2. 2. 1. OO OOO OOOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 9

2. 2. 2. OO OO OO OOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 10

2. 2. 3. O O O O ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 12

2. 3. OOOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 12

2. 3. 1. OO OO OO OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 14

2. 3. 2. O OOO OO OOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 14

2. 3. 3. OO O OO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 25

2. 3. 4 OO OOOO ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 28

2. 3 . 4 O O O ․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․․ 30

**List of Tables**

**List of Figures**

**Chapter I. Introduction**

1. **1 Background**

(Times New Roman, size 10, double space, first line 5-character indent) On the 16th, Gapsin. Sunny. Early in the morning, the Starmangun came and said, "The enemy ship is on its way." Immediately he ordered the entire fleet to anchor and went out to sea, and about 330 enemy ships surrounded our entire fleet. The priests repeatedly avoided and tried to escape, considering themselves as gross and irrational. The boat carrying Usuksa Kim Eok-chu was far away. I hastened the oars and went forward, and the guns of the local, the wise, and the angular, went on a stormy storm, and the soldiers stood tightly on the ship and went on a rain-swept rampage. The enemy group would not be able to cope with the enemy and would step back for a while, but we could not predict the war situation because we were surrounded by layers of people, and the soldiers of the same ship were looking back at each other. I said, calmly admonishing. Even if you have a thousand enemy ships, you can't fight our ships, so never be shaken and shoot the enemy with all your might."
When I looked around the boats of the chiefs, they seemed to be trying to turn the boat around, instead of just taking a wait-and-see approach. I wanted to be behead and filial to Kim Eung-ham, Jung-gun, but if my ship turns the lead, many ships trembling with fear will gradually retreat, and the enemy ships will gradually pressure me, making the situation a disaster. As soon as I ordered the establishment of a heavy military operation and set up a super-yogi, the ship of Kim Eung-ham, the lieutenant general and commander of the U.S. port, gradually came closer to my ship, and the ship of Anwi, the prefect of Geoje, came first. I stood on the boat and called out the safety myself. Are you going to die in military law? Are you going to die in the military law? Where will you live if you run away? Anxiety entered the enemy line in bewilderment. I also called Kim Eung-ham and said, How can you escape sin because you have not saved the general while avoiding far away by becoming a heavy army? I'd like to execute him right now, but the enemy is also in a hurry, so make a contribution.

As the two ships went straight into the gap of the battle, the enemy commander commanded the three ships under his command, clung to the boat like ants, and clung to the boat. The soldiers on the boats of An and An were ready to die and attacked like mad, reaching the point where they were almost exhausted. I turned the boat around and went on a rainy day, and destroyed all three enemy ships. The boats of Song Yo-jong and Jeong Eung-du, the captain of Pyongsanpo, arrived one after another and joined forces to shoot the enemy. Junsha, who had surrendered in the enemy camp of Angol, was on my boat and looked down at the sea and said, "The man in red silk with a picture pattern is Madashi, the enemy of Angol camp." I brought Kim Dol-son [16] to the forefront with a hook. Then Junsha saw and jumped and said, "This is Mardash!" Therefore, they were beheaded immediately, and the enemy's morale was greatly dampened. The entire fleet advanced in unison, pounding the drum at once, and each local government, the wise men, and the arrows were fired like rain, making the sound of the river vibrate. The enemy fleet fled when it struck 30 enemy ships and never dared to approach our army again. This was indeed the luck of heaven. As the defensive power was extremely harsh and the allies' forces were exhausted and in danger, they moved their camp to Guido.

**Summary**

(Times New Roman, size 10, double space, first line 5-character indent)

**References**

(ACS format or AIP format are recommended)

***Curriculum Vitae***

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**Professional Activities**

**Honors and Awards**

**Publications**

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