

# **Master's Thesis**

## **Coil Array Inductive Power Transfer System for Autonomous Underwater Vehicle**

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January 5, 2021

A Master's Thesis  
submitted to Graduate School of Information Science,  
Nara Institute of Science and Technology  
in partial fulfillment of the requirements for the degree of  
Doctor of ENGINEERING

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# Coil Array Inductive Power Transfer System for Autonomous Underwater Vehicle\*

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## Abstract

For a long time, providing a stable, safe, and efficient power supply for underwater electromechanical equipment has always been a concern in deep-sea exploration. Compared with the complicated docking mechanism, potential safety hazards, and expensive price of traditional wet-mate connectors, wireless power transmission (WPT) technology can transmit energy without any electrical contact between the power supply and the electrical equipment, which provides an effective solution to the aforementioned drawbacks of wired charging. There are many uncontrollable factors in the seawater working environment. Therefore, this topic takes the equivalent circuit and magnetic field distribution as the theoretical basis to study the energy transmission characteristics of underwater WPT and proposes corresponding improvements and solutions to the current problems and deficiencies. Especially for the unstable output voltage of the receiver and excessive magnetic flux density at the internal of AUV.

## Keywords:

Autonomous underwater vehicle, inductive power transfer, underwater wireless power transfer, undersea

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\*Master's Thesis, Graduate School of Science and Technology, Nara Institute of Science and Technology, January 5, 2021.

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# 1 Introduction

## 1.1 Background

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## 2 Definition

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### 3 Proposed method

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## 4 Conclusion

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# Acknowledgements

Thank you, and thank you.

# References

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## Publication List

- [1] John Doe, Who am I, 1934.