

INFORMATION OF DOCTORAL THESIS

Full name of PhD candidate: **Xuan Cuong Ngo**

Thesis title: *"Research on plasma spraying technology for fabrication of silicon carbide plasma coating on steel surface to protect against corrosion in the fluorine-containing acidic medium"*

Major: Mechanical Engineering

Training code: 9520103

Full name of the scientific supervisors:

1. **Dr. Ha Tuan Nguyen**
2. **Dr. Tuan Anh Nguyen**

Institution of education: National Research Institute of Mechanical Engineering– Ministry of Industry and Trade

SUMMARY OF NEW CONCLUSIONS OF THE THESIS

1. Scientific significances of the thesis

- The study provides a reasonable SiC-Cu mixing ratio to ensure the basic quality coating formation as a basis for further studies.
- Establishing a suitable set of technological parameters for creating SiC/Cu plasma coating on steel surface
- Data processing by Taguchi experimental planning plan, using ANOVA to evaluate the relationship between technological parameters and achieved quality criteria..

2. Pactical significances of the thesis

- The research results of the thesis contribute to creating a solution to protect against wear for equipment and works working in chemically corrosive environments, namely creating protective coatings on impellers and pump impellers. working in a fluorine-containing environment at Lam Thao Superphosphate and Chemical Factory.
- Contributing to improving the level and supplementing technical documents for the domestic water spray technology industry.

3. New findings of the thesis

- This is the first project in Vietnam to study the technology of creating SiC/Cu plasma coating on steel surface.
- Improved method of plasma spraying technology in the air by plasma spraying in Ar shielding gas.
- Finishing SiC/Cu coating on steel surface by PTFE penetration.

- Design and manufacture of composite wear equipment to provide a method of synthetic wear assessment.contributions of the thesis sentence

Hanoi, March 22 , 202 3

Scientific supervisors

PhD candidate

Dr. Ha Tuan Nguyen Dr. Tuan Anh Nguyen

Ngo Xuan Cuong