

INFORMATION OF A DOCTOAL THESIS IN ENGINEERING

Name of PhD candidate: Tran Thi Van Nga

Name of thesis: *“Research on fabrication and assessment cutting ability of electroplated metal-bonded CBN grinding wheel”*

Specialization: Mechanical Engineering

Code No: 62.52.01.03

Scientific supervisors:

Dr. Truong Hoanh Son

Assoc.Prof.Dr. Tran Vinh Hung

Training institutions: National Research Institute of Mechanical Engineering –
Ministry of Industry and Trade

CONTRIBUTIONS TO THESIS

1. Scientific contributions

The results of this study have the following scientific contributions: i) Conducting study of applying electroplating technology to fabricate metal-bonded single-layer CBN grinding wheel; ii) Determining the impact of the technology parameters (current density, plating time, rotation speed of catot, temperature of the solution) of electroplating process to the distribution of the abrasive on grinding wheel surface in the fabrication; iii) Making assessment of the cutting ability to the grinding wheel through the G-ratio and surface roughness of machined surface.

The study initially creates the scientific base for manufacturing technology for the fabrication of electroplated metal-bonds single-layer CBN grinding wheel in Vietnam.

2. Practical contributions

The research results of the thesis are the starting steps for the fabrication of electroplated metal-bonds single-layer CBN grinding wheel in laboratory. Then, it can be applied to practical production in Vietnam and be references for teaching and scientific research in the future.

3. New contributions

- Proposal of a fabrication method and a set of technology parameters to fabricate electroplated metal-bonds single-layer CBN grinding wheel;
- Establishment the formula for distribution coefficient (K_{PBQU} and K_{PBT}) and the equation for determining the approximate plating thickness;
- The method for assessment of cutting ability to electroplated metal-bonds single-layer CBN grinding wheel.

Hanoi, 3rd July 2017

Supervisors

PhD candidate

Dr. Truong Hoanh Son Assoc.Prof.Dr. Tran Vinh Hung Tran Thi Van Nga