

## The collaboration research for the Dual Graduate School between VNU and JAIST

[Title of collaboration research]

**Development of Eco-materials from Viet nam-indigenous plant or microorganism**

[The members of collaboration research]

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[Other references]

**Our research on eco-plastics appears in Nature Materials online at 26<sup>th</sup> Nov.**

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**In order to solve the environmental problems such as global warming, extraordinary living systems, desertification, extreme event, endocrine disrupters, and salt damage, we must develop the new-functional eco-materials. Since environmentally-circulating conventional materials such as poly(lactic acid)s have insufficient thermostability, mechanical modulus, or strength, their application is restricted. In this project, we aimed at development of environmentally -circulating materials with high performance by polymerization of pai-electronic molecules and by modification of biologically-derived macromolecules.**

**We have already developed the high-performance polymers and functional new biopolymers. However the Japan-indigenous microorganism and plants were not so abundant. Then we expect the Viet nam-indigenous microorganism and plants existing abundantly under the strong sunlight. If the Viet nam group find and send us the Viet nam-indigenous microorganisms or plants, we can extract some functional matters. Otherwise, if the Viet nam group takes out some multifunctional monomers, we can prepare the high-performance polymers from them. There are remained a number of environmentally-toxic materials in the current earth, we must develop the substitutes with all the toxic materials for the future human beings.**

**The first target is the automobile materials whose recycling is strongly required. We have many second targets which are not shown in this stage.**