## PROJECT SUMMARY

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| **Ref No.:** MRIC-SCA-P05 | **Title:** An Investigation of Developing a 3D Printing Industry through the Recycling of Plastic Waste in Mauritius. |
| **Local Company:** University of Mauritius | |
| **Collaborating Institutions:** 1) International Economics Consulting Ltd and 2) Minifactory Company Ltd | |

| **Project Leader** | |
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| **Research Collaborators** | |
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### TECHNICAL ABSTRACT

A large number of containers used in Mauritius for storing household and industrial products are made out of plastic. When discarded as waste, those plastic containers pose a serious environmental and economic challenge for Mauritius. To address this issue, this research will look at the business case for, and engineering implications of, converting plastic waste into 3D printing filaments so as to reduce the amount of plastic that will end up in the landfill.

Primarily, this research will delve into the following critical issues: the types (and volumes) of plastic to recycle, the process involved to convert the plastic into 3D filaments, and the commercialization of 3D printing filaments locally and regionally. For this project, we propose to analyze the 3D printing filament chemical components and identify the most appropriate type of local plastic wastes that can be recycled. A proof of concept, with a business case on the demand projections, will be made. We shall then proceed to identify and use the hardware required to build a prototype machine that can convert identified plastic wastes into 3D printing filament locally. We shall also evaluate the potential of developing 3D printing as a sustainable source of economy for Mauritius through the recommendations of relevant processes and policies to be put in place.



**Key Words**: Recycling, Plastic, 3D Printing, Waste Management, Circular Economy