PROJECT SUMMARY

Ref No.: MRIC/SISM-BG-24	**Title:** Developing the Smart Agrivoltaic Rooftop Greenhouse
Local Company: Super Construction Co Ltd	
Collaborating Institution: Nanopac (M) Sdn Bhd	
Project Leader	
Miss Stephanie Wong	Super Construction Co Ltd
Research Collaborator(s)	
Name	**Organisation**
Prof Victor Garland Lee Wiriadinata	Super Construction Co Ltd
Mr Ho Chin Woi	Nanopac (M) Sdn Bhd

TECHNICAL ABSTRACT

Developing the Smart Agrivoltaic Greenhouse that is ideal for Mauritius and tropical conditions in the same region is vital for horticulture. We will develop permanent tempered glass roofs/walls that will endure cyclone-prone vulnerabilities by equipping sturdy construction for these greenhouses with new nanotechnology translucent photovoltaic panels/ bifacial solar photovoltaic encapsulated in glass-to-glass structure. Both the Nano Light Energy Panels (NLEP) and the glass-glass bifacial PV panels are lightweight, highly transparent, and generate energy even on cloudy days or when visible light (fluorescent light source) is available. This allows more sunlight for the horticulture enterprise where plants benefit more than where conventional opaque photovoltaic panels are used. Furthermore, Mycorrhizal fungi are beneficial for plant growth and productivity, as they form a mutualistic association with the roots of plants, providing them with essential nutrients and water. However, these fungi require optimal sunlight for their growth and activity. In greenhouses, where sunlight can be limited, it is important to provide the right conditions for mycorrhizal inoculated plants to thrive.

Key Words: Agrivoltaic, Greenhouse, Horitculture, Nanotechnology photovoltaic panels, Glass-to-glass structure