

SATU Presidents' Forum

of Southeast and South Asia and Taiwan Universities
台灣與東南亞暨南亞大學校長論壇

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2016 SATU Joint Research Scheme Program Host Application Form

Date: 2016 / 04 / 25 (year / month / day)

1. Host University

University of Malaya

2. Host Unit

Department of Mechanical Engineering

3. Joint Research Project Title

Thermal Characteristic and Entropy Efficiency of Nanofluids In Solar Collector System

4. Principal Investigator

Passport Name	Dr. Ong Hwai Chyuan		
Nationality	Malaysian	Gender	<input checked="" type="checkbox"/> M <input type="checkbox"/> F
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5. Co- PI from the same unit – If any

Passport Name			
Nationality		Gender	<input type="checkbox"/> M <input type="checkbox"/> F
Address			
Telephone	(Office)	(Home / Mobile)	
Fax Number		E-mail	

6. Project Details

Project Description	Nanofluids are new innovative fluids that can be used as carries fluids. Nanofluids exhibits enhanced or modified thermos-physical properties such as thermal conductivity, convective heat transfer coefficient, viscosity and thermal diffusivity compared to base fluids. By adding the
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nanoparticle into base fluid can significantly enhances thermo-physical mass diffusivity and radioactive heat transfer properties of fluid. A small amount of nanoparticles in base fluid can significantly improve the thermal efficiency. Due to these inherent characteristics, nanofluids are getting increasing attention among scientists, researchers and engineers to develop and improve the systems based on nanofluids as a heat transporting and absorbing medium.

This research is to improve and enhance the efficiency in solar collector application using GNP and GO nanofluids. Synthesis of water based GNP and GO nanofluids have been investigated and characterized. Dispersion quality of nanofluids is assured by additional synthesis process like acids treatment. Sedimentation effect of nanofluids with time length has been studied by sample visualization and TEM micrographs. The augmentative absorbance and thermal conductivity of nanofluids have been compared with pure water. Entropy generation analysis will be implemented for measuring the effectiveness of the flow passage design. Finally, application of nanofluids in solar thermal system will be investigated and studies.

7. Acknowledgement (Signed by the President or SATU representative to show recognition)

Name title	PROFESSOR DR. NOORSAADAH ABD. RAHMAN Deputy Vice-Chancellor (Research & Innovation) University of Malaya 50603 Kuala Lumpur	 (signature)
Date: 20 / 4 / 2016		(yyyy/mm/dd)

Please email satu@email.ncku.edu.tw before 2016.4. 29(Fri.) for application with the subject line: < 2016 SATU JRS host application –School Name>. Thank you.