HANYANG UNIVERSITY

2019 HISS Research Project

(Next generation solar cells (Perovskite, Quantum Dots, Dye-Sensitized Photovoltaics))

Professor:	**Do Hwan Kim**
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Department	Chemical Engineering
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Laboratory Research Center Information	
Topics	Nanomaterials for solar energy conversion
Activities	• Synthesis of nanomaterials for light harvesting and charge transporting materials • Device Fabrication for the next generation solar cells • Characterization of solar cells
Achievement	**Selected Publication**: Energy & Environmental Sci., ACS Nano, Advanced Functional Materials, Nature Materials Nano Energy etc. [Refer to website: aeml.hanyang.ac.kr] **Government Project**: KETEP, NRF

Pre-requisite & Eligibility	
Academic Background	• Basic knowledge on materials • Nanotechnology
Relevant Experience	• Nanomaterials for energy applications (recommended but not mandatory)
Language	Intermediate level of English writing and speaking

Objective & Description:	The program's intent is to educate students about the solar energy conversion systems and provide them a better understanding of photovoltaics. The students will synthesis the charge transporting and light harvesting materials, and fabricate solar cells.		
Project Duration	4 weeks	Project Hours:	minimum 80 hours

Schedule:		Weekly Topic & Activities	Student Assignment
	Week 1	- Introduction to energy technology - Overview on photovoltaics	Submission of report on solar cells

	Week 2	- Materials synthesis for light harvesting materials - Materials synthesis for charge transporting materials - Device fabrication of next generation photovoltaics	Report on solar cells types
	Week 3	- Device fabrication of next generation photovoltaics - Characterization of solar cell performance	Device fabrication
	Week 4	- Strategies for the enhancement of photovoltaic - Wrap-up	- 10 pages written final report - 15 min. oral presentation + 5 min. Q&A

	Attendance	Weekly Report	Final Presentation or Paper
Evaluation	20%	40%	40%