



HANYANG UNIVERSITY

2019 HISS Research Project (Layer-by-layer assembly, Nanostructure Engineering, Nanocomposites)

Professor:	Bongjun Yeom
E-mail:	byeom@hanyang.ac.kr
Department	Chemical Engineering
Website	https://nise-hanyang.com/

Laboratory Research Center Information	
Topics	<ul style="list-style-type: none"> • Layer-by-layer assembly • Nanostructure engineering • Nanocomposites
Activities	<ul style="list-style-type: none"> • Synthesis of functional thin films with layer-by-layer assembly • Soft matter engineering for nano and microstructures • Synthesis of ultrastrong nanocomposites
Achievement	<ul style="list-style-type: none"> • Selected Publication: Nature - 2017 (Theme: Nanocomposites) • Macromolecular chemistry and physics - 2018 (Theme: Nanoassembly) • Government Project: National Research Foundation of Korea (NRF)

Pre-requisite & Eligibility	
Academic Background	<ul style="list-style-type: none"> • Basic knowledge on chemistry • Material science • Nanotechnology
Relevant Experience	<ul style="list-style-type: none"> • Synthesis and characterization of Nanomaterials (recommended but not mandatory)
Language	<ul style="list-style-type: none"> • Intermediate level of English writing and speaking

Objective & Description:	The program's intent is to educate students about the nanocomposites films with layer-by-layer methods and provide them relevant experimental experiences. Students will be participated in experimental activities on preparation of nanomaterials, developments of synthetic routes, collecting experimental data, and characterizations.		
Project Duration	4 weeks	Project Hours:	minimum 80 hours

Hanyang International Summer School

Office of International Affairs, Hanyang University
 222 Wangsimni-ro, Seongdong-gu, Seoul, 04763, Korea
 Tel. +82-2-2220-2456 | iss@hanyang.ac.kr



	Weekly Topic & Activities	Student Assignment
Schedule:	Week 1 <ul style="list-style-type: none"> • A mandatory orientation on the summer school program. • Lecture on nanocomposites 	Submission of report on the advances in nanocomposite materials
	Week 2 <ul style="list-style-type: none"> • Introduction to layer-by-layer assembly • Training session on the preparation of functional thin films by layer-by-layer methods • Equipment handling, function and safety education 	Report on layer-by-layer assembled nanocomposite materials
	Week 3 <ul style="list-style-type: none"> • Practices on the layer-by-layer assembled thin films. Skilled post-graduate research students will guide on the detailed steps of experiments. 	Preparation of functional thin films
	Week 4 <ul style="list-style-type: none"> • Lecture on application areas of nanocomposites • Technical demonstration on uv-vis spectroscopy • Preparation for final presentation 	10 pages written final report 15 min. oral presentation + 5 min Q&A

Evaluation	Attendance	Weekly Report	Final Presentation or Paper
	30%	40%	30%