

# NSEL

- 소속: 서울 [공과대학 에너지공학과](#)
- 영문명: Nano Space Engineering Laboratory
- 실장: [박호범 에너지공학과](#) 교수
- 홈페이지: <http://nsel.hanyang.ac.kr/>

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## 주요 연구

### Gas Separation Membrane Materials Research

- Highly permeable superglassy polymer membranes
- Hydrogen-selective membrane materials
- Thermally stable polymer membranes for CO<sub>2</sub> separation
- Nanoporous inorganic membrane materials

### Water Purification Membrane Materials Research

- Low-fouling polymer membranes for water purification using bioinspired materials
- Highly chlorine-tolerant polymer membranes for desalination
- Membrane fabrication using e-jet printing method
- Low-fouling, bioinspired membrane materials for membrane-bioreactor (MBR) processes

### Molecular Simulation Research

- Free volume element distribution of thermally rearranged polymers
- Gas sorption and diffusion of small gas molecules through polymer membranes
- Water diffusion through block copolymers consisting of hydrophilic and hydrophobic domains
- Materials design for hydrogen selective adsorption

## **Fuel Cell Research**

- Polymer electrolyte membrane materials for fuel cells
- Investigating interfacial properties between membrane and electrode in the MEA (membrane-electrode assembly)

## **Hydrogen Storage Materials Research**

- Microporous, rigid glassy polymer materials for hydrogen storage
- Novel carbon-silica materials for hydrogen storage