

# Qi Wu

+32 456358243 | qi.wu@imec.be | [www.linkedin.com/in/qi-wu-5b57261b2](https://www.linkedin.com/in/qi-wu-5b57261b2)

**Profile:** Surface science and optical metrology researcher with expertise in surface modification, ATR-FTIR spectroscopy, and optical simulations. 4+ years of hands-on cleanroom experience and a strong record of building experimental platforms & integrating hardware-software pipelines. Actively interested in how machine learning will be integrated into future tasks.

## EDUCATION

<b>Ph.D. in Chemistry</b>	2022-Sep. 2026 (expected)
KU Leuven	Leuven, Belgium
<i>Scholarship-funded research on nanopatterned-surface wettability, ATR-based characterization, and semiconductor-relevant surface engineering.</i>	
<b>M.Sc. in Electrical Engineering</b>	2019-2021
University of Twente	Enschede, the Netherlands
<b>B.Eng. in MEMS Engineering</b>	2015-2019
Northwestern Polytechnical University	Xi'an, China

## SKILL

### Characterization & Metrology

- ATR-FTIR spectroscopy: chemical analysis, extended applications on pattern surfaces
- SEM, AFM, ellipsometry, contact angle measurement

### Fabrication & Laboratory

- 2,000+ hours cleanroom experience: wet-etching, self-assembled monolayers CVD
- Experimental platform prototyping: 3D printing, embedded systems development

### Software & Data

- Lumerical FDTD optical simulation
- Python, MATLAB

### Languages

- English (Professional) and Mandarin (Native)

## EXPERIENCE

<b>Ph.D. Researcher</b>	2022-2026 KU Leuven & IMEC, Leuven, Belgium
<ul style="list-style-type: none"><li>• Developed a <b>custom ATR-FTIR platform</b> for real-time wetting characterization of patterned surfaces. Built analytical + experimental frameworks for quantitative spectra interpretation.</li><li>• Designed optical alignment, fluidic control, and automated data-acquisition routines; technology extended into an <b>internal patent application</b> for semiconductor process monitoring.</li><li>• Evaluated density of silane monolayers on nanopatterned Si using wetting characterization to quantify the CVD process window. Work received the <b>Best Student Paper Award</b>, UCPSS 2025.</li><li>• <b>Upgraded the conventional contact-angle system</b> by integrating a dual-axis imaging module and image-processing scripts, enabling quantitative analysis of anisotropic droplet spreading on nano-grooved surfaces.</li><li>• Conducted <b>wettability studies</b> on high-aspect-ratio patterns, correlating surface geometry with wetting transitions and anisotropic wetting behavior.</li></ul>	

### Intern

2021, ARCNL, Amsterdam, the Netherlands

- Performed mechanical simulations to model stress and strain in elastomer microstructure arrays used in low-wear wafer carriers.
- Collaborated with cleanroom specialists in an industrial-research environment.

## INTERESTS

- Tennis, bouldering, hiking
- DIY electronics invention