

ALEKSANDRA STRZELECKA

(949) 418-3143 | astrzele@uci.edu |
www.linkedin.com/in/aleksandra-strzelecka-951420165



- Detail-oriented and passionate about chemical engineering, with hands-on experience in polymers, optics, and a comprehensive range of material characterization techniques.
- Motivated and eager to gain new experience, broaden knowledge, and solve challenging problems.
- Great team player, readily accepting guidance while also excelling as a mentor, and ready to deliver tasks on-time and at high-quality.

WORK EXPERIENCE

Graduate Research Assistant, UC Irvine, October 2020 to Present

Graduate Research Assistant in Professor Gorodetsky's lab performing research on:

- Dynamic optical and thermal materials and nanostructures
- Simulation of optical and thermal properties of designed materials
- Deposition and characterization of thin metallic films

IMRI Lab Assistant, UC Irvine, May 2022 to Present

- Provides 24/7 support for facility users and responded quickly to instrument issues, identified sources of problems, communicated relevant information with users and management, and repaired the instrument with minimal downtime
- Updates standard operating procedure and communicated important changes and considerations to users and management for improved instrument usage
- Trains users on a thin film physical vapor deposition instrument in a user facility

Graduate Teaching Assistant, UC Irvine, January - March 2024

ENGR1A: Chemistry for Engineers

- Wrote, administered, and graded formative assessments in the form of quizzes, midterm exams, and final exam
- Coordinated lesson plans, communicated important information with students, and managed final grading and feedback
- Independently prepared and delivered discussions to class of 26 students
- Assisted students with homework problems

Chemical Engineer, CMPW PAN, Zabrze, Poland, March to September 2020

- Performed research on nanogels for drug delivery

Technologist/Process Engineer, IZO ERG S.A. Gliwice, Poland, November 2017 to February 2019

- Optimized technological process parameters for production of laminates
- Supervised a manufacturing process and updated work instructions
- Developed and implemented new products and changes in process parameters
- Performed research to obtain products with desired properties (worked with epoxy, phenol-formaldehyde, melamine and silicone resins)

Intern, PPG Polifarb Cieszyn, Poland, July to September 2017

- Winner of PPG student contest "Engineer of Future"
- Performed validation of test methods
- Performed quality control of sample parameters for data analysis
- Performed quality control of raw materials
- Gained practical knowledge about pigments and standard test methods for color quality in paint industry

EDUCATION

Chemical Engineering, Master of Science to Ph.D.

University of California, Irvine, 2020 – Present (GPA = 3.88)

Chemical Technology, Master of Science

Silesia University of Technology in Gliwice, Poland, 2017 – 2018

Thesis Topic: Standard test methods for color quality of pigments in paint industry

Chemical Technology, Bachelor of Science

Silesia University of Technology in Gliwice, Poland, 2013 – 2017

Major: Technology of polymers and plastics

Thesis Topic: Initiators in controlled radical polymerization with atom transfer

SKILLS

TA training (TAPDP), Mentoring Excellence Certificate Program,

Computer Programs: MS Office, COMSOL, MATLAB, Python, Adobe Illustrator

Techniques: SEM, AFM, XRD, FTIR, UV-Vis, ellipsometry, deposition (PVD)

Languages: Polish (native), English (fluent)

PUBLICATIONS

Badshah, M.A., Leung, E.M., Liu, P., **Strzelecka, A.A.**, Gorodetsky, A.A. Scalable manufacturing of sustainable packaging materials with tunable thermoregulability. *Nat Sustain.* 5, 434 (2022), <https://doi.org/10.1038/s41893-022-00847-2>

Otulakowski, L., Kaspro, M., **Strzelecka, A.**, Dworak, A., Trzebicka, B. Thermal behaviour of common thermoresponsive polymers in phosphate buffer and in its salt solutions. *Polymers*, 13, 90 (2021), <https://doi.org/10.3390/polym13010090>

PUBLICATIONS IN PROGRESS

Lee, S., Leung, E.M., Badshah, M.A., **Strzelecka, A.A.**, Gorodetsky, A.A. Manufacturing of breathable, washable, and fabric-integrated squid skin-inspired wearable thermoregulatory materials. *APL Bioeng.* (In Revision, 2024)

PATENT

Gorodetsky, A. A.; Leung, E.M.; Badshah, M.A.; Liu, P.; **Strzelecka, A.A.** "Scalable Manufacturing of Sustainable Composite Materials with Tunable Thermoregulating Properties" Application No. 63/268,916. Disclosed March 4th, 2022.

SELECTED PRESS

March 28, 2022 Squid skin-inspired cup cozy will keep your hands cool and your coffee hot. **Phys. Org.** <https://phys.org/news/2022-03-squid-skin-inspired-cup-cozy-cool.html>

March 28, 2022 Squid skin-inspired cup cozy will keep your hands cool and your coffee hot. **Nanowerk news.** https://www.nanowerk.com/nanotechnology-news2/newsid=60208.php#google_vignette

March 28, 2022 Squid skin-inspired cup cozy will keep your hands cool and your coffee hot. **UCI News.** <https://news.uci.edu/2022/03/28/squid-skin-inspired-cup-cozy-will-keep-your-hands-cool-and-your-coffee-hot/>

March 29, 2022 Die Kaffeetasse für die ideale Trinktemperatur. **Deutschlandfunk Nova.** <https://www.deutschlandfunknova.de/nachrichten/inspiriert-von-tintenfischhaut-die-tasse-fuer-die-besten-kaffee-temperatur>

April 1, 2022 Una taza inspirada en la piel de calamar mantendrá tus manos frescas y tu café caliente. **EcoInventos.** <https://ecoinventos.com/material-aislante-inspirado-en-la-piel-de-calamar/>

April 13, 2022 Innovazione Dalla pelle dei calamari un film termoisolante che mantiene caldo il caffè. **Focus.** <https://www.focus.it/tecnologia/innovazione/pelle-calamari-film-termoisolante>

April 2, 2022 Pele de lula inspira material que regula temperatura de qualquer recipiente. **Galileu.** <https://revistagalileu.globo.com/Ciencia/Biologia/noticia/2022/04/pele-de-lula-inspira-material-que-regula-temperatura-de-qualquer-recipiente.html>

June 27, 2022 Squid Skin-Inspired Material a Game Changer. UCI Samueli School of Engineering
<https://engineering.uci.edu/news/2022/6/squid-skin-inspired-material-game-changer>

October 27, 2022 Squid skin-inspired cup cozy will keep your hands cool and your coffee hot. **FrogHeart**.
<https://www.frogheart.ca/?p=41786>

CONFERENCES

November 26 – December 1, 2023 Boston, MA, USA

CEPHALOPOD-INSPIRED OPTICAL ENGINEERING OF MAMMALIAN CELLS // Bogdanov, G., Kaimal, N., Farrukh, A., **Strzelecka, A.A.**, Chatterjee, A., Gorodetsky, A. A. / 2023 MRS Fall Meeting / Oral presentation
SCALABLE SQUID SKIN-INSPIRED MATERIALS WITH TUNABLE HEAT-MANAGING PROPERTIES // **Strzelecka, A.A.**, Liu, P., Lee, S., Gorodetsky, A.A. / 2023 MRS Fall Meeting / Oral presentation

October 18 – 20, 2023 Cleveland, OH, USA

DYNAMIC MATERIALS INSPIRED BY CEPHALOPODS // Gorodetsky, A.A., **Strzelecka, A.A.** / 2023 Biocene / Oral presentation and poster presentation

August 21 – 25, 2022 Chicago, IL, USA

SCALABLE MANUFACTURING OF SUSTAINABLE PACKAGING MATERIALS WITH TUNABLE THERMOREGULABILITY // Badshah, M.A., Leung, E.M., Liu, P., **Strzelecka, A.A.**, Gorodetsky, A.A. / 2022 ACS Fall / Poster presentation

August 7 – 12, 2022 Ventura, CA, USA

SCALABLE MANUFACTURING OF SUSTAINABLE PACKAGING MATERIALS WITH TUNABLE THERMOREGULABILITY // Badshah, M.A., Leung, E.M., Liu, P., **Strzelecka, A.A.**, Gorodetsky, A.A. / 2022 GRC / Poster presentation

May 8 – 13, 2022 Honolulu, HI, USA

SCALABLE MANUFACTURING OF SUSTAINABLE PACKAGING MATERIALS WITH TUNABLE THERMOREGULABILITY // Badshah, M.A., Leung, E.M., Liu, P., **Strzelecka, A.A.**, Gorodetsky, A.A. / 2022 GRC / Poster presentation