ALEKSANDRA STRZELECKA

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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., Kasprow, 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)

Bogdanov, G., **Strzelecka, A.A.,** Kaimal, N., Senft, S., Hanlon, R.T., Gorodetsky, A.A. gradient refractive indices drive cephalopod structural coloration and enable bioinspired multispectral materials. Science. (In Revision, 2024)

Strzelecka, A.A., Lee, S., Kaimal, N., Gorodetsky, A.A. Dynamic multispectral structural camouflage systems. Science. (In Preparation, 2024)

PATENT

Gorodetsky, A. A.; Leung, E.M.; Badshah, M.A.; Liu, P.; **Strzelecka, A.A.** "Cephalopod-Inspired Bioelectronic Platform for Engineering Intercellular Communication." Application No. 2022-938-2. 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-InspiredMaterial aGame 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