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Dr. Ana Rebeka Kamšek

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Research interests

materials characterization, electrocatalysis, nanomaterials, image analysis, data analysis, electrochemistry, metals and alloys, structure-property relationships

Research experience

Institute of Metals and Technology, Physics and Chemistry of Materials

- Postdoctoral Research Associate 03/2026-

National Institute of Chemistry, Department for Materials Chemistry

- Postdoctoral Research Associate 10/2025-02/2026
- Associate 10/2021-09/2025

Education

University of Ljubljana, Faculty of Chemistry and Chemical Technology

- Ph.D. in Chemistry (cum laude) 2021-2025
under the supervision of Dr. Nejc Hodnik and Dr. Goran Dražič

University of Ljubljana, Faculty of Mathematics and Physics

- M.Sc. in Physics 2019-2021
- B.Sc. in Physics 2015-2019

Selected publications

1. Kamšek, A. R., Ruiz-Zepeda, F., Bele, M., Logar, A., Dražič, G., Hodnik, N. Structure–stability relationships in Pt-alloy nanoparticles using identical-location four-dimensional scanning transmission electron microscopy and unsupervised machine learning. *ACS Nano*. 2025, 19, 2, 2334–2344.
2. Kamšek, A. R., Meden, A., Arčon, I., Jovanovič, P., Šala, M., Ruiz-Zepeda, F., Dražič, G., Gaberšček, M., Bele, M., Hodnik, N. Periodic anti-phase boundaries and crystal superstructures in PtCu₃ nanoparticles as fuel cell electrocatalysts. *Materials Today Nano*. 2023, 23, 100377, 1-11.
3. Kamšek, A. R., Ruiz-Zepeda, F., Pavlišič, A., Hrnjič, A., Hodnik, N. Bringing into play automated electron microscopy data processing for understanding nanoparticulate electrocatalysts' structure–property relationships. *Current opinion in electrochemistry*. 2022, 35, 1-11.

Awards

- Jožef Stefan Golden Emblem Prize (Jožef Stefan Institute) 2026
- Pregl award for an exceptional doctoral thesis (National Institute of Chemistry) 2025
- Best natural science lecture (Slovenska matica) 2024
- Best master's thesis on sustainable chemistry (Slovensko kemijsko društvo) 2022
- Best poster (Slovenian-Bavarian Summer School: Materials for Energy and Environmental Application) 2022