Curriculum Vitae

Jana Aupič,

Education:

October 2015 to July 2020
Doctoral Programme in Chemical Sciences
Faculty of Chemistry and Chemical Technology, University of Ljubljana
Doctoral thesis title: De novo design of coiled-coil protein switch

October 2013 to September 2015
University Study Programme Chemistry-2nd Cycle
Faculty of Chemistry and Chemical Technology, University of Ljubljana
Master's thesis title: Analytical theory for a five-site water model

October 2010 to September 2013
University Study Programme Chemistry-1st Cycle
Faculty of Chemistry and Chemical Technology, University of Ljubljana
Bachelor's thesis title: Adsorption of organic compounds on graphene

Research experience:

March 2021 to present
CNR-IOM, Trieste, Italy
AIRC postdoctoral researcher; Advisor: Dr. Alessandra Magistrato
Project title: Exploiting copper transport routes for anticancer theranostic applications

September 2015 to February 2021
National Institute of Chemistry, Slovenia
Graduate student; Advisor: Prof. Dr. Roman Jerala
Design of polypeptide polyhedra from coiled-coil forming segments.

- Design of Zn(II)-responsive coiled-coil dimers.
- Designing and modeling coiled-coil based protein cages.
- Studying folding pathway of designed protein cages using molecular dynamics and stopped-flow FRET measurements.

October 2013 to September 2015
Faculty of Chemistry and Chemical Technology, University of Ljubljana
Master's Student; Advisor: Assoc. Prof. Dr. Tomaž Urbič

- Studied structural and thermodynamic properties of rigid polyelectrolytes using Monte Carlo simulations and Ornstein-Zernike equation.
- Proposed a new five point water model and assessed its structural and thermodynamic properties via Monte Carlo simulations and Wertheim's integral equation theory.

Publications:

PLAPER, Tjaša, AUPIČ, Jana, DEKLEVA, Petra, LAPENTA, Fabio, MANČEK KEBER, Mateja, JERALA, Roman, and BENČINA, Mojca. "Coiled-coil heterodimers with increased stability for cellular regulation and sensing SARS-CoV-2 spike protein-mediated cell fusion." *Scientific reports* 11.1 (2021)

LAINŠČEK, Duško, et al. "A Nanoscaffolded Spike-RBD Vaccine Provides Protection against SARS-CoV-2 with Minimal Anti-Scaffold Response." *Vaccines* 9.5 (2021)

MAJERLE, Andreja, HADŽI, San, AUPIČ, Jana, SATLER, Tadej, LAPENTA, Fabio, STRMŠEK, Žiga, LAH, Jurij, LORIS, Remy, and JERALA, Roman. "A nanobody toolbox targeting dimeric coiled-coil modules for functionalization of designed protein origami structures." *Proceedings of the National Academy of Sciences* 118.17 (2021)

AUPIČ, Jana, STRMŠEK, Žiga, LAPENTA, Fabio, PAHOVNIK, David, PISANSKI, Tomaž, DROBNAK, Igor, LJUBETIČ, Ajasja, and JERALA, Roman. "Designed folding pathway of modular coiled-coil-based proteins." *Nature Communications* 12.1 (2021)

LAPENTA, Fabio, AUPIČ, Jana, VEZZOLI, Marco, STRMŠEK, Žiga, DA VELA, Stefano, SVEGRUN, Dmitri, and JERALA, Roman. "Self-assembly of polyhedral protein cages from pre-organised coiled-coil modules." *Nature Communications* 12.1 (2021)

BOŽIČ ABRAM, Sabina, GRADIŠAR, Helena, AUPIČ, Jana, ROUND, Adam R., and JERALA, Roman. "Triangular in Vivo Self-Assembling Coiled-Coil Protein Origami." *ACS Chemical Biology* (2021)

VRANCKEN, Jeroen PM et al. "Molecular assemblies built with the artificial protein Pizza." *Journal of Structural Biology: X* 4 (2020)

SCALVINI, Barbara et al. "Topology of folded molecular chains: from single biomolecules to engineered origamis." *Trends in chemistry* 2.7 (2020)

LEBAR, Tina, LAINŠČEK, Duško, MERLJAK, Estera, AUPIČ, Jana, and JERALA, Roman. "A tunable orthogonal coiled-coil interaction toolbox for engineering mammalian cells." *Nature Chemical Biology* 16.5 (2020)

AUPIČ, Jana, LAPENTA, Fabio, and JERALA, Roman. "SwitCCh: Metal-Site Design for Controlling the Assembly of a Coiled-Coil Homodimer." *ChemBioChem* 19.23 (2018)

LAPENTA, Fabio, AUPIČ, Jana, STRMŠEK, Žiga, and JERALA, Roman. "Coiled coil protein origami: from modular design principles towards biotechnological applications." *Chemical Society Reviews* 47.10 (2018)

LJUBETIČ, Ajasja, et al. "Design of coiled-coil protein-origami cages that self-assemble in vitro and in vivo." *Nature biotechnology* 35.11 (2017)

PRSLJA, Paulina, AUPIC, Jana, and URBIC, Tomaz. "Thermodynamics and structure of a two-dimensional asymmetric electrolyte by integral equation theory." *Molecular Physics* 115.13 (2017)

AUPIČ, Jana, LAPENTA, Fabio, STRMŠEK, Žiga, and JERALA, Roman. "Towards designing new nano-scale protein architectures." *Essays in Biochemistry* 60.4 (2016)

BOŽIČ ABRAM, Sabina, AUPIČ, Jana, DRAŽIĆ, Goran, GRADIŠAR, Helena, and JERALA, Roman. "Coiled-coil forming peptides for the induction of silver nanoparticles." *Biochemical and Biophysical Research Communications* 472.3 (2016)

AUPIC, Jana, and URBIC, Tomaz. "A structural study of a two-dimensional electrolyte by Monte Carlo simulations." *The Journal of chemical physics* 142.1 (2015)

AUPIC, Jana, and URBIC, Tomaz. "Thermodynamics and structure of a two-dimensional electrolyte by integral equation theory." *The Journal of chemical physics* 140.18 (2014)

Honors and Awards:

Prešeren Award of Faculty of Chemistry and Chemical Technology for research achievements, 2014

Award Certificate for Study Achievements, Faculty of Chemistry and Chemical Technology, 2014

Award Certificate for Study Achievements, Faculty of Chemistry and Chemical Technology, 2011