Stanislav Jelavić

Nano-Science Center
University of Copenhagen
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Education

2012-present
PhD fellow
Marie Curie Fellow at University of Copenhagen, Nano-Science Center
Marie Curie grant from the European Commission in the framework of the MINSC ITN (Initial Training Research Network) (http://www.see.leeds.ac.uk/minsc/)
My research interests cover fields that are of special significance in mineralogy and material science. Currently, I am working on complex interactions between clay minerals, saline solutions and various organic functional groups, that takes place in oil reservoirs and drilling facilities. I use cryogenic-XPS to probe the chemistry and AFM to probe the structure and forces of the mineral-fluid interface.
Supervisors: Susan L.S. Stipp and Emil Makovicky

2010-2012
International Master Degree in Advanced Clay Science (Erasmus Mundus)
Thesis: "Quantitative mineralogy of clay-bearing samples with X-ray powder diffraction and the Rietveld method"
Advisor: Bruno Lanson (University Joseph Fourier, Grenoble, France)
(http://www.master-imacs.org/)

2008-2012
Master of Science (Mineralogy and Petrology)
University of Zagreb, Croatia
Thesis: “Sedimentological and Mineralogical Characteristics of Ottnangian Deposits in Poljanska Quarry"
Advisor: Darko Tibljaš

2005-2008
Bachelor of Science(Geology)
University of Zagreb, Croatia
Thesis: "Strain fringes as shear sense indicator"
Advisor: Dražen Balen

Internships, summer schools and exchange programs

2010-2012
Internships as a part of Erasmus Mundus:
*Institut de Chimie des Milieux et Matériaux (University of Poitiers, France)
*Geobiotec (University of Aveiro, Portugal) and
*Laboratory for organomineral materials (University of Ottawa, Canada).

July, 2011
Participated in the European Mineralogical Union (EMU) School in “Layered mineral structures and their application in advanced technologies” Rome, Italy.

July, 2010- September, 2010
IAESTE internship (“International Association for the Exchange of Students for Technical Experience”) at Tsuchiya lab (Tohoku University, Sendai, Japan). It comprised of optical, mineralogical and chemical analyses on selected metamorphic

rocks from Japan and Antarctic.

October, 2008- February, 2009
CEEPUS exchange scholarship ("Central European Exchange Program for University Studies") at Institut für Mineralogie und Kristallographie, University of Vienna, supervised by prof.dr.sc. Ekkehart Tillmanns.

International Research Visits

October, 2013
Physics of Complex Fluids group, MESA+ institute for Nanotechnology, University of Twente
Atomic resolution AFM on natural and synthetic kaolinites (collaborator dr.sc. Igor Siretanu)

January-April, 2015
Ajo-Franklin Group (Biological Nanostructures), Molecular Foundry, Lawrence Berkeley National Laboratory
Dynamic Force Spectroscopy measurements in ferrihydrite-polysaccharide and ferrihydrite-peptidoglycane systems (collaborator: dr.sc. Karina K. Sand)

April-May, 2015
Geochemistry and Environmental Hazards Group, Institute of Earth and Planetary Sciences, University College London
Chemistry of mineral-organic interface (collaborator prof.dr.sc. Eric Oelkers)

Teaching

Teaching assistant in following courses:
Materials Chemistry (laboratory exercises and theory)
General Chemistry for Life Sciences (theory)
Geochemistry (theory)
Surface Geochemistry (theory)

Mentoring high-school projects in characterisation of natural materials and green synthesis.

Publications

Jelavić, S., Bovet, N., Nielsen A.R., and Stipp, S.L.S.
Competitive adsorption of Na^{+}, Ca^{2+}, Mg^{2+} and Cl^{-} on illite and clinochlore: Implications for enhanced oil recovery.
To be submitted to Energy and Fuels.

Spanos, I., Dideriksen, K., Kirkensgaard, J. K., **Jelavić, S. ,** Arenz, M. (2015) Structural disordering of de-alloyed Pt bimetallic nanocatalysts: the effect on oxygen reduction reaction activity and stability. *Phys. Chem. Chem. Phys. Advance Article* http://dx.doi.org/10.1039/c4cp04264f

Jelavić, S., Bovet, N., Stipp, S.L.S. (poster 2015) Electrolyte Adsorption on Chlorite: Cryogenic-Xps Reveals Competition between Cations and Anions, *Goldschmidt Conference*, Prague, Czech Republic, 16 – 21 August 2015.

http://goldschmidt.info/2015/uploads/abstracts/origPDFs/1641.pdf

Blazanovic, M., Nielsen, A.R., Matthiesen, J., Dalby, K.N., **Jelavić, S.**, Hassenkam, T., Stipp, S.L.S. (poster 2015) Chemical Force Mapping of Clay Fractions from Sandstones, Goldschmidt Conference, Prague, Czech Republic, 16 – 21 August 2015

http://goldschmidt.info/2015/uploads/abstracts/finalPDFs/319.pdf

Jelavić, S., Bovet, N., Rath Nielsen, A., Stipp, S.L.S. (talk 2015) A cryogenic X-ray photoelectron spectroscopy (cryo-XPS) study of illite and clinochlore control on low salinity enhanced oil recovery, Euroclay 2015, Edinburgh, Scotland, 5 - 10 July 2015

Bovet, N., **Jelavić, S**., Clausen T., Stipp S.L.S. (talk 2015) The kaolinite - water interface: Insight from the electrical double layer, Euroclay 2015, Edinburgh University, Scotland, 5 - 10 July 2015

Jelavić, S., Bovet, N., Stipp, S.L.S.
Adsoprtion of $MgCl_2$ and $CaCl_2$ on illite as seen with cryogenic X-ray photoelectron spectroscopy (cryo-XPS).
The International Carbon Conference Abstract Volume, pg. 38, 2014 August 25-29,2014 Reykjavik, Iceland.

Nielsen, A.R., **Jelavić, S.**, Dalby, K.N., Bovet, N., Stipp, S.L.S.
Ion Uptake by sandstone and clay surfaces.
The International Carbon Conference Abstract Volume, pg. 55, 2014 August 25-29, 2014 Reykjavik, Iceland.

Jelavić, S., Bovet, N. and Stipp, S.L.S
Cryogenic X-ray photoelectron spectroscopy (cryo-XPS) study of natural and synthetic kaolinites in MgCl2 solutions.
2nd International Conference Clays, Clay Minerals and Layered Materials- CMLM2013 Book of Abstracts, pg. 121, 2013 September 11-15, St. Petersburg, Russian Federation.

Tibljaš, D., **Jelavić, S.**
Zeolite deposits in Croatia
5th Serbian-Croatian-Slovenian Symposium on Zeolites- Proceedings, pg. 24-27, Zlatibor, Serbia 2013

Languages

Mother tongue: Serbo-Croatian
Independent in English and German
Basics in French, Portuguese and Danish