Personal details and the date of the CV

Surname: Ali-Löytty

First names: Harri Johannes

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Date of CV: 16.3.2022

Degrees

Doctor of Science in Technology, 06.03.2013
Major: Advanced Engineering Physics, Minor: Engineering Mathematics, Tampere University of Technology, Finland, Supervisor: Professor Mika Valden, +358 40 849 0261, mika.valden@tuni.fi

Master of Science in Technology "with distinction", 03.12.2008
Major: Technical Physics, Minors: Chemistry, Pedagogics, Tampere University of Technology, Finland

Other education and expertise

I am an expert in chemical physics specialized in the research of surface and interface phenomena, such as corrosion and catalysis, on inorganic materials utilizing synchrotron light (MAX IV Laboratory, SSRL, ALS) mediated in situ and operando electron spectroscopy methods. I have a strong background in the surface science of stainless steels. My current research is focused on atomic layer deposition grown photocatalytic coatings for artificial photosynthesis.

Language skills

Finnish, native language; *English*, excellent oral and writing skills; *Swedish*, good oral and writing skills

Current employment

01.09.2020–31.12.2023, Senior Research Fellow (stage III on the four-stage research career model)
Surface Science Group, Laboratory of Photonics, Tampere University, Finland

04.01.2021–30.06.2022, Research Consultant (part-time), Plasmonics Oy, Tampere, Finland

Previous work experience

01.09.2017–31.08.2020, **Postdoctoral Researcher (Academy of Finland)**
Surface Science Group, Laboratory of Photonics, Tampere University, Finland

01.04.2014–31.03.2015, Postdoctoral Scholar
Prof. Anders Nilsson's group, Center for Interface Science and Catalysis (SUNCAT), **Stanford University**, California, USA

01.04.2013–31.08.2017, Postdoctoral Researcher

01.01.2009–31.03.2013, Research Scientist

01.06.2008–31.12.2008, Research Assistant

01.06.2005–31.08.2007, Research Assistant (part-time)
Surface Science Group, Tampere University of Technology, Finland

Research funding and grants

Research funding and grants (0.513 M€):

2017–2020, Mimicking the nature's blueprint of sustainable energy production – Artificial Photosynthesis Panel (APS-panel), Funding: Postdoctoral Researcher post, Academy of Finland, 303 220 €

2017–2018, Bright light for solar fuel production – synchrotron radiation mediated chemical analysis of photoelectrochemical interfaces. Funding: Jenny and Antti Wihuri Foundation postdoc homing grant, 50 000 €.

2004–2014, 14 personal grants totaling 163 000 € from Finnish foundations for MSc, PhD and post-doc research.

Participation in the preparation of funded research proposals (3.351 M€):

2019–2023, Solar Fuel Synthesis – Controlling the climate change by conversion of carbon dioxide and water into solar fuels, Jane & Aatos Erkko Foundation, 1.316 M€, PI prof. Mika Valden.

2019–2022, Liquid Sun, Business Finland, 775 529 €, PI prof. Mika Valden.

2020–2021, Biomimetic multi-band camouflage coating for military applications, Ministry of Defence of Finland (MATINE), 160 000 €, PI prof. Mika Valden.

2015–2019, Steely – Steely way to sustainable hydrogen economy - thermally grown oxides on advanced iron alloys for photoelectrochemical hydrogen production by solar water splitting. Academy of Finland, 692 295 €, PI prof. Mika Valden.

2015–2018, Enhancing artificial photosynthesis performance by surface electrode modification, Academy of Finland, 407 829 €, PI prof. Tapio Niemi.

Research output

35 peer-reviewed scientific articles, **750+** citations, H-index **15** (Google Scholar).

One highly cited paper in the ISI Web of Science database (http://dx.doi.org/10.1021/acs.jpcc.5b10931).

30.3.2020, Invention disclosure "Degradative plasmonic composite nanoparticle surface with efficient low energy resonance frequency".

14.8.2018, Invention disclosure "Method to convert solar energy into chemical energy of carbohydrates".

Research supervision and leadership experience

Supervisor of 4 PhD thesis (in progress), 4 MSc thesis and 2 BSc thesis.

Teaching merits

16.5.2019, Assessment of overall teaching skills including (1) teaching experience, (2) pedagogical training, (3) ability to produce learning material and (4) other teaching merits with the grade **very good (4/5)** and teaching demonstration with the grade **very good (4/5)** by a teaching skills committee for the position of Professor or Assistant/Associate Professor in atomic layer deposition and etching at the University of Helsinki.

3.12.2008, Teacher's pedagogical education, 60 credits, Tampere University.

Other key academic merits

12/2019, Shortlisted (among 5 out of 38 applicants) for the tenure track position in advanced characterization of inorganic materials, University of Oulu.

2/2019, Shortlisted (among 5 out of 30 applicants) for the position of Professor or Assistant/Associate Professor in atomic layer deposition and etching at the University of Helsinki. Ranked to the 2nd place (shared) by the Appointment Committee.

12/2020, Chairman of the organizing committee, Synchrotron Light Finland 2020 -workshop, 30.11.–01.12.2020, Tampere, Finland, 63 participants.

12/2016, Chairman of the organizing committee, Synchrotron Light Finland 2016 -workshop & winter school, 01.–02.12.2016, Tampere, Finland, 71 participants.

Invited talks at 12th World Congress on Biofuels and Bioenergy, Zurich, Switzerland, September 4–6, 2018 and 7th Annual World Congress of Nano Science & Technology, Fukuoka, Japan, October 24–26, 2017.

Reviewer of scientific articles in Nature Communications, Applied Surface Science, Journal of the European Optical Society-Rapid Publications.

Scientific and societal impact

2015–2021, Board member of the Finnish Synchrotron Radiation Users' Organization (FSRUO)