

1. Full name and date

- Repo, Hanne Eveliina
- Female
- CV updated 7.3.2018

2. Date and place of birth, nationality, current residence

Office: Skinnarilankatu 34, 53850 Lappeenranta, Finland

3. Education and degrees awarded

- **M.Sc. (Tech.) 5.4.2005**, Helsinki University of Technology
Major: Physical chemistry and electrochemistry (5/5) Excellent, Minor: Analytical Chemistry (4.79/5) Excellent
Thesis: Electrochemical Molecular Switch, with Distinction, Supervisor: Professor Kyösti Kontturi
- **Lic.Sc. (Tech.) 16.9.2010**, Aalto University School of Science and Technology
Major: Physical chemistry, Pass, Minor: Physical properties of metal nanoparticles, Pass
Thesis: Electrochemical characteristics of copper benzoate complexes, Pass, Supervisor: Professor Kyösti Kontturi
- **Dr.Sc. (Tech.): 30.9.2011**, Lappeenranta University of Technology
Major: Environmental Technology
Thesis: EDTA- and DTPA-functionalized silica gel and chitosan adsorbents for the removal of heavy metals from aqueous solutions, with Distinction, supervisor Professor Mika Sillanpää

4. Linguistic skills

- Finnish: mother tongue
- English: very good
- Swedish: good/sufficient

5. Current position

At the moment I'm working as an associate professor in Lappeenranta University of Technology in the department of Separation and Purification Technology. Start date for the current position was **1.10.2017**.

Work description: Experimental design and conducting laboratory experiments, writing reports and scientific papers, working as a project manager, supervising Master and PhD students, giving courses to undergraduate students, writing funding applications: EAKR, Academy of Finland, Horizon 2020, and different foundations, cooperating with industry and companies (expertise advisor), and giving presentations in national and international seminars and conferences.

6. Previous work experience

My work experience includes mainly working as a researcher at first in Helsinki University of Technology (currently Aalto University), in Laboratory of Physical Chemistry and Electrochemistry and then in Lappeenranta University of Technology, in Laboratory of Green Chemistry (earlier Laboratory of Applied Environmental Chemistry). In addition, I have spent four months in University of Valencia, two weeks in University of Alicante, and two times one week period in Rzeszow University (Poland). All the visits have included research collaboration and gaining new knowledge related to my own research field. Furthermore, I have had two career breaks due to maternal leaves. Main working periods are listed below:

- Helsinki University of Technology, research assistant, 1.6.2004 – 31.3.2005, Laboratory of Physical Chemistry and Electrochemistry
- Helsinki University of Technology, researcher, 1.8.2005 – 31.1.2007, Laboratory of Physical Chemistry and Electrochemistry
- University of Kuopio, researcher, 1.2.2007 – 31.12.2009, Laboratory of Applied Environmental Chemistry,
- University of Eastern Finland, researcher, 1.1.2010 – 31.12.2010, Laboratory of Applied Environmental Chemistry
- Lappeenranta University of Technology, researcher, 1.1.2011 – 30.9.2011, Laboratory of Green Chemistry,
- Lappeenranta University of Technology, post-doctoral researcher, 1.10.2011-30.9.2017, Laboratory of Green Chemistry,

International experience:

- University of Valencia, researcher, 1.4.2005 – 31.7.2005, Department of Thermodynamics
- Career breaks: Maternal leaves 25.7.2011-31.12.2011 (5 months) and 25.5.2013-30.3.2014 (10 months).

7. Research funding as well as leadership and supervision

Already before graduating as PhD, I have participated in writing project funding applications as well as supervised new researchers in our laboratory. Both of these actions are described as follows:

Funding obtained and role in preparing applications:

- Maj & Tor Nessling Foundation, Sonoelectrocatalytic treatment wastewater using micro- and nanostructured metal oxide electrodes, 72000 € research funding for a PhD student (2012-2015)
- Emil Aaltonen Foundation, travel grant: 2500 € research visit to University of Alicante, 2012
- MVTT, conference travel grant: 660 € IWA Water & Industry conference 2015
- MVTT, conference travel grant: 1000 € SDEWES conference 2015
- Helsinki University of Technology, 15000 € research grant for PhD studies, 2005
- Tekniikan edistämissäätiö, student grants 1000 € and 1500 € in years 2002 and 2003
- Preparing applications (PI: Professor Mika Sillanpää):
 1. The Finnish Funding Agency for Technology and Innovation (Tekes), writing project applications, main writing responsibility at least in 3 funded applications
 2. European Union (FP7), main responsibility in writing an application submitted in Spring 2013 and 2015
 3. Academy of Finland, writing project applications, main and assisting roles
 4. EAKR, writing project applications, main and assisting roles

Supervising PhD and Master students:

- Secondary supervising role of PhD students:
 1. Sanna Hokkanen, Modified nano- and microcellulose based adsorption materials in water treatment, November 2014
 2. Sara-Maaria Alatalo, Hydrothermally carbonized biomass for adsorption applications, 2016
 3. Feiping Zhao, Chelating groups functionalized chitosan, polyacrylamide and β -cyclodextrin adsorbents for the removal of heavy metals and dyes from aqueous solutions, ongoing
- Official supervision of PhD students:
 4. Simo Kalliola, Fabrication Novel Green Surfactant in the Form of Soluble Compounds and Nano- and Microparticles from Cellulose and Chitosan, ongoing
 5. Deepika Lakshmi, Development of novel electrodeionization system for recovery and recycling precious metals and rare earth elements from mining effluents, ongoing
 6. Bhairavi Doshi, Synthesis of Chitosan microspheres based sustainable surfactant for the Arctic Oil-Spill Response, ongoing
- Supervision of M.Sc. students:
 1. Aki Heinonen, Adsorption of hydrogen sulfide by modified cellulose nano/microcrystals, 2012
 2. Eveliina Kuokkanen, Removal of ammonium, phosphate and nitrate by adsorption, 2013
 3. Sari Front, Enhance of precipitation with peroxidation in purification of drinking water – Case water treatment plant of Suomen Sokeri, 2014
 4. Xueting Wang, An EDTA- β -cyclodextrin adsorbent for the adsorption of rare earth elements and its application in preconcentration of ultratrace rare earth elements from seawater, 2015
 5. Heini Rytönen, Adsorption of arsenic from ammonia containing waste water by ferrous hydroxide waste, 2015
 6. Muhammad Al Jubury, Improve the production capacity: A case study of Eurofins Viljavuuspalvelu Oy, 2016
 7. Timo Elo, Eurofins Viljavuuspalvelu Oy:n maanäytteiden kuivauksen tehostaminen, 2016
 8. Mehmet Kucuk, Removal of sulfate and phosphate by Zn-Al layered double hydroxides, 2017
 9. Nikolai Ponomarev, Synthesis of novel cellulose based nanocomposites by green methods and their possible use as adsorbents, 2017

10. Olga Maliuk, Synthesis and application of lignin-based adsorbents for metal cations removal from water solutions, 2017
11. Eppu Väänänen, ongoing
12. Anna Lehtikoinen, ongoing

8. Collaboration

I have several national and international collaborative partners of whom I have worked with in different research projects and prepared joint publications (see also list of publications). Main collaborative partners are:

1. Jolanta Warchol, University of Rzeszow, Poland. Collaboration in the field of modeling of adsorption phenomena. 6 joint publications.
2. Selvaraj Rengaraj, Sultan Qaboos University, Oman. Collaboration for preparation and characterization of adsorption/photocatalytic materials. 5 joint publications.
3. Amit Bhatnagar, Linnaeus University, Sweden. Collaboration for developing adsorption materials for the removal of different contaminants. 4 joint publications.
4. Tonni Kurniawan, United Nations University, Japan. Collaboration around adsorption phenomena. 3 joint publications.
5. Lena Westholm, Malardalens hogskola, Sweden. Collaboration for studying adsorption materials for mining wastewater treatment. 3 joint publications.

9. Merits in teaching and pedagogical competence

Teaching has belonged to my work almost right in the beginning. Furthermore, I have been participating in pedagogical courses provided for the staff of Lappeenranta University of Technology and at the moment I'm studying professional pedagogy in JAMK University of Applied Science. Merits of teaching are listed below:

- Laboratory assistant, Laboratory Course of Chemistry, 2005-2006, Helsinki University of Technology
- Assistant, Environmental Chemistry I, 2008 and Environmental Chemistry II (Green Chemistry), 2009, University of Kuopio
- Lecturer, Environmental Chemistry I, 2009 and 2010 and Environmental Chemistry II (Green Chemistry), 2010 and 2011, University of Eastern Finland
- Lecturer, Introduction to Green Chemistry (4 ETCs) and Methods of Green Chemistry in Environmental Technology (6 ETCs), 2012-2014, Lappeenranta University of Technology
- Lecturer, Green Chemistry (5 ETCs) and Industrial Water Treatment (5 ETCs), Autumn 2014 and 2015
- Lecturer, Introduction to Advanced Water Treatment (5 ETCs), Advanced Materials in Adsorption and Ion-exchange (5 ETCs), Advanced Oxidation Processes and Electrochemical Methods in Water Treatment (5 ETCs), 2016 and 2017
- Visiting lecturer: University of Eastern Finland (Introduction to Green Chemistry 2015-2018) and Aalto University (Electrochemical Water treatment 2017-2018)

10. Other academic merits

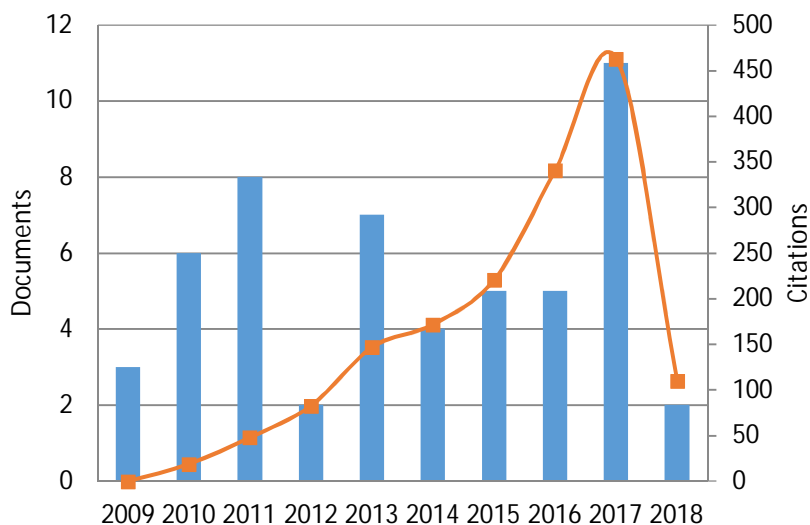
My other academic merits include being a referee for following scientific journals: Journal of Environmental Science & Technology, Journal of Hazardous Materials, Chemical Engineering Journal, Arabian Journal of Chemistry, International Journal of Mineral Processing, Desalination and Water Treatment, Separation Science and Technology, Environmental Science and Pollution Research, Korean Journal of Chemical Engineering, Chemical Papers, Materials Journal, Material Sciences and Nanotechnology, Journal of Industrial & Engineering Chemistry, Molecules, Water Research, Cellulose, Journal of Colloid and Interface Science, Industrial Crops and Products, Rapid Communications in Mass Spectrometry

I have also acted as an opponent in the defense of Hanna Runtti, University of Oulu, 29.6.2016. The title of her dissertation was Utilisation of industrial by-products in water treatment: Carbon- and silicate-based materials as adsorbents for metals and sulphate removal.

11. Scientific and societal impact of research

I have 54 peer-reviewed scientific articles in journals such as Water Research, Journal of Hazardous Materials, Chemical Engineering Journal, Langmuir, Green Chemistry, Journal of Environmental Technology, and

Bioresource Technology, which are high ranked journals in our field with impact factors over 4.000. My h-index is 24 with number of total citations of 1604. In the articles where I'm the second author, I have had a supervising role for the PhD-student (the first author). Other co-authorships are gained due to my participation in parts of the experiments conducted. A graft about the documents published and citations is presented below.



3 most cited articles are:

1. **Repo, E.**, Warchol, J. K., Kurniawan, T. A., & Sillanpää, M. E. T. (2010). Adsorption of Co(II) and Ni(II) by EDTA- and/or DTPA-modified chitosan: Kinetic and equilibrium modeling. *Chemical Engineering Journal*, 161(1-2), 73-82. (citations 175)
2. **Repo, E.**, Kurniawan, T. A., Warchol, J. K., & Sillanpää, M. E. T. (2009). Removal of Co(II) and Ni(II) ions from contaminated water using silica gel functionalized with EDTA and/or DTPA as chelating agents. *Journal of Hazardous Materials*, 171(1-3), 1071-1080. (citations 106)
3. **Repo, E.**, Warchol, J. K., Bhatnagar, A., & Sillanpää, M. (2011). Heavy metals adsorption by novel EDTA-modified chitosan-silica hybrid materials. *Journal of Colloid and Interface Science*, 358(1), 261-267. (citations 126)

12. Other skills

During my research career I have learned to use many analytical equipments including: ICP-OES, ICP-MS, Autosorb surface area analyzer, zetasizer, capillary electrophoresis, TOC-analyzer, FTIR, UV-vis spectrophotometer, TEM (basic), GC-MS (basic), XRD (basic)

I have also been a safety responsible person in our laboratory.