

Curriculum Vitae

Andreas Gondikas, PhD

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Education

Duke University, U.S.A.	Civil & Environmental Engineering	Ph.D.	2012
Duke University, U.S.A.	Engineering Management	Ms.	2006
Nat. Tech. University of Athens, GR	Chemical Engineering	BSc., Ms.	2004

Professional Experience

University of Athens, GR	Group leader	12/2018 – current
Creative nano, GR	Scientific advisor	02/2018 – current
AXIA Innovation, DE	Project manager	01/2018 – 12/2018
University of Gothenburg, SE	Post-Doctoral Researcher	09/2016 – 12/2017
University of Vienna, AU	Post-Doctoral Researcher	05/2012 – 08/2016
University of Gothenburg, SE	Visiting Researcher	03 – 04/2016
Hellenic Army, GR	Chemical Engineer	03 – 09/2014
Eawag, CH	Visiting Researcher	11 – 12/2013
MacConnell & Associates, P.C., U.S.A.	Project Engineer, Consulting	06/2005 – 06/2006
Duke University, U.S.A.	Research Assistant	02 – 05/2005
Helmholtz Zentrum München, DE	Research Assistant	01 – 07/2003

Scientific Output

I) Academic Metrics

h-index: 13; 1,782 total citations (Google Scholar, 02/2020)

II) Publications in Peer Reviewed Journals

1. Praetorius A., Badetti E., Brunelli A., Clavier A., Gallego-Urrea J., Gondikas A., Hassellöv M., Hofmann T., Mackevica A., Marcomini A., Peijnenburg W., Quik J., Seijo M., Stoll S., Tepe N., Walch H., von der Kammer F. (2020). Strategies for determining heteroaggregation attachment efficiencies of engineered nanoparticles in aquatic environments. *Environmental Science: Nano*, Advance Article (DOI: 10.1039/c9en01016e)
2. Gondikas A., von der Kammer F., Kaegi R., Borovinskaya O., Neubauer E., Navratilova J., Praetorius A., Cornelis G., Hofmann T. (2018). Where is the nano? Analytical approaches for detecting TiO₂ engineered nanomaterials in surface water systems. *Environmental Science: Nano* 5 (2) 313 – 326 (DOI: 10.1039/C7EN00952F)
3. Hernroth B., Holm I., Gondikas A., Tassidis H. (2018). Manganese Inhibits Viability of Prostate Cancer Cells. *Anticancer research*. 38 (1), 137 -145 (DOI: 10.21873/anticancer.12201)
4. Amorim M., Lin S., Schlich K., Navas J., Brunelli A., Neubauer N., Vilsmeier K., Costa A., Gondikas A., Xia T., Galbis L., Badetti E., Marcomini A., Hristozov D., von der Kammer F., Hund-Rinke K., Scott-Fordsmand J., Nel A., Wohlleben W. (2018). Environmental Impacts by Fragments Released from

- Nanoenabled Products: A Multiassay, Multimaterial Exploration by the SUN Approach. *Environmental Science & Technology*. 52 (3), 1514–1524 (DOI: 10.1021/acs.est.7b04122)
5. Neubauer N., Scifo L., Navratilova J., Gondikas A., Mackevica A., Borschneck D., Chaurand P., Vidal V., Rose J., von der Kammer F., Wohlleben W. (2017, selected to be featured in ACS Editors' Choice). Nanoscale coloristic pigments: Upper limits on releases from pigmented plastic during environmental aging, in food contact, and by leaching. *Environmental Science & Technology* (DOI: 10.1021/acs.est.7b02578)
 6. Kaegi R., Englert A., Gondikas A., Sinnet B., von der Kammer F., Burkhardt M. (2017). Release of TiO₂ – (Nano)particles from Construction Materials Landfill Sites. *NanoImpact*. 8, 73-79 (DOI: 10.1016/j.impact.2017.07.004)
 7. Micic V., Schmid D., Bossa N., Gondikas A., Velimirovic M., Wiesner M., von der Kammer F., Hofmann T. (2017). Can Na humate coating on collector surfaces hinder the deposition of polymer coated nano-zero-valent-iron? *Environmental Science and Technology*. 51, (16) 9202-9209 (DOI: 10.1021/acs.est.7b01224)
 8. Tharaud M., Gondikas A., Benedetti M., von der Kammer F., Hofmann T., Cornelis G. (2017). TiO₂ nanomaterials detection in calcium rich matrices by spICPMS. A matter of acquisition and treatment. *Journal of Analytical Atomic Spectrometry*. 32, 1400-1411 (DOI: 10.1039/C7JA00060J)
 9. Praetorius A., Gundlach-Graham A., Goldberg E., Fabienke W., Navratilova J., Gondikas A., Kaegi R., Günther D., Hofmann T., von der Kammer F. (2017). Single-particle multi-element fingerprinting (spMEF) using inductively coupled plasma time of flight mass spectrometry (ICP-TOFMS) to identify engineered nanoparticles against the elevated natural background in soils. *Environmental Science: Nano*. 4, 307-314 (DOI: 10.1039/C6EN00455E)
 10. Urey C., Weiss V., Gondikas A., von der Kammer F., Hofmann T., Marchetti-Deschmann M., Allmaier G., Marko-Varga G., Andersson R. (2016). Combining gas-phase electrophoretic mobility molecular analysis (GEMMA), light scattering, field flow fractionation and cryo electron microscopy in a multidimensional approach to characterize liposomal carrier vesicles. *International Journal of Pharmaceutics*. 513 (1-2) 309-318 (DOI: 10.1016/j.ijpharm.2016.09.049)
 11. Weiss V., Urey C., Gondikas A., Golense M., Friedbacher G., von der Kammer F., Hofmann T., Andersson R., Marko-Varga G., Marchetti-Deschmann M., Allmaier G. (2016). Nano electrospray gas-phase electrophoretic mobility molecular analysis (nES GEMMA) of liposomes: Applicability of the technique for nano vesicle batch control. *Analyst*. 141 (21) 6042-6050 (DOI: 10.1039/c6an00687f)
 12. Navratilova J., Praetorius A., Gondikas A., Fabienke W., von der Kammer F., Hofmann T. (2015). Detection of engineered copper nanoparticles in soil using single particle ICP-MS. *International Journal of Environmental Research and Public Health*. 12 (12) 15756-15768 (DOI: 10.3390/ijerph121215020)
 13. Nowack B., Baalousha M., Bornhöft N., Chaudhry Q., Cornelis G., Cotterill J., Gondikas A., Hassellöv M., Lead J., Mitrano D., von der Kammer F., Wontner-Smith T. (2015). Progress towards the validation of modeled environmental concentrations of engineered nanomaterials by analytical measurements. *Environmental Science: Nano*. 2 (5) 421-428 (DOI: 10.1039/c5en00100e)
 14. Gondikas A., von der Kammer F., Reed R. B., Wagner S., Ranville J. F., Hofmann T. (2014). Release of TiO₂ nanoparticles from sunscreens into surface waters: a one-year survey at the Old Danube recreational lake. *Environmental Science and Technology*. 48 (10) 5415-5422 (DOI: 10.1021/es405596y)

15. Wagner S., Gondikas A., Neubauer E., Hofmann T., von der Kammer F. (2014). Spot the difference: Engineered and natural nanoparticles in the environment-release, behavior, and fate. *Angewandte Chemie - International Edition*. 53 (46) 12398-12419 (DOI: 10.1002/anie.201405050)
16. Wagner S., Gondikas A., Neubauer E., Hofmann T., von der Kammer F. (2014). Finde den Unterschied: synthetische und natürliche Nanopartikel in der Umwelt – Freisetzung, Verhalten und Verbleib. *Angewandte Chemie*. 126 12604-12626 (DOI: 10.1002/ange.201405050)
17. Gondikas A., Morris A., Reinsch B. C., Marinakos S. M., Lowry G., Hsu-Kim H. (2012). Cysteine-induced modifications of zero-valent silver nanomaterials: Implications for particle surface chemistry, aggregation, dissolution, and silver speciation. *Environmental Science and Technology*. 46 (13) 7037-7045 (DOI: 10.1021/es3001757)
18. Gondikas A., Masion A., Auffan M., Lau B., Hsu-Kim H. (2012). Early stage precipitation kinetics of cysteine-capped zinc sulfide nanoclusters. *Chemical Geology*. 329, 10-17 (DOI: 10.1016/j.chemgeo.2011.06.009)
19. Yang X., Gondikas A., Marinakos S. M., Auffan M., Liu J., Hsu-Kim H., Meyer J. N. (2012). The mechanism of silver nanoparticle toxicity is dependent on dissolved silver and surface coating in *Caenorhabditis elegans*. *Environmental Science and Technology*. 46 (2), 119-1127 (DOI: 10.1021/es202417t)
20. Unrine J. M., Colman B. P., Bone A. J., Gondikas A., and Matson C. W. (2012). Biotic and Abiotic Interactions in Aquatic Microcosms Determine Fate and Toxicity of Ag Nanoparticles. Part 1. Aggregation and Dissolution. *Environmental Science and Technology*. 46 (13), 6915-6924 (DOI: 10.1021/es204682q)
21. Bone A. J., Colman B. P., Gondikas A., Newton K. M., Harrold K. H., Cory R. M., Unrine J. M., Kline S. J., Matson C. W., and Di Giulio R. (2012). Biotic and Abiotic Interactions in Aquatic Microcosms Determine Fate and Toxicity of Ag Nanoparticles. Part 2. Toxicity and Ag Speciation. *Environmental Science and Technology*. 46 (13), 6925-6933 (DOI: 10.1021/es204683m)
22. Gondikas A., Jang E. K., Hsu-Kim H. (2010). Influence of amino acids cysteine and serine on aggregation kinetics of zinc and mercury sulfide colloids. *Journal of Colloid and Interface Science*. 347, 167-171 (DOI: 10.1016/j.jcis.2010.03.051)
23. Quintana M., Klouda A., Gondikas A., Ochsenkühn-Petropoulou M., and Michalke B. (2006). Analysis of Size Characterized Manganese Species from Liver Extracts using Capillary Zone Electrophoresis coupled to Inductively Coupled Plasma Mass Spectrometry (CZE-ICP-MS). *Analytica Chimica Acta*, Vol. 573-574, 172-180 (DOI: 10.1016/j.aca.2006.02.045)

III) Book Chapters and Technical Reports

1. Cornelis G., Tuoriniemi J., Montañó M., Wagner S., Gallego-Urrea J., Mattson K., Gondikas A. Challenges and current approaches towards environmental monitoring of nanomaterials. *Monitoring Environmental Contaminants*, Environmental Contaminants series, Elsevier (in print)
2. Gondikas A., Wagner S., Navratilova J. Nanomaterials in Water: Detection and characterization. *Encyclopedia of Water: Science, Technology, and Society* 2019 (DOI: 10.1002/9781119300762.wsts0076)
3. Wagner S., Navratilova J., Gondikas A. Sample preparation for the analysis of nanomaterials in water. *Encyclopedia of Water: Science, Technology, and Society* 2019 (DOI: 10.1002/9781119300762.wsts0078)

4. Wagner S., Gondikas A., Neubauer E., Hofmann T., von der Kammer F. Nanomaterials in the Environment: Critical Comparison of Natural and Engineered Particles. Technical report for the German Association of Chemical Industries (VCI) 2016
5. Jassby D., Leidner A., Xiao Y., Gondikas A., Wiesner M.R., The role of advanced technologies in tapping unconventional Texas waters. *Water Policy in Texas, Responding to the Rise of Scarcity*, **2012** (ISBN: 9781933115894)

IV) Academic Theses

1. **Ph.D. Thesis** (February 2012) “The Role of Sulfhydryl-Containing Low Molecular Weight Ligands for the Environmental Fate of Zinc Sulfide and Metallic Silver Nanoparticles”
2. **Bachelor’s Thesis** (July 2004) “Manganese Speciation in Biological Samples Using Size Exclusion Chromatography and Strong Ion Exchange Chromatography Coupled to Inductively Coupled Plasma Mass and Atomic Adsorption Spectrometry”

V) Invited Speaker

‘Analysis of environmental samples with single particle ICP-MS’ (January 10 – 12, 2017) spICP-MS: Data Analysis Workshop, RIKILT Wageningen University & Research, the Netherlands

‘Environmental Implications of Nanotechnology’ (postgraduate; March 22, 2013) Materials Science & Technology Seminar Series, National Technical University of Athens, Greece

VI) Conference Papers/Abstracts (peer reviewed)

1. Dura A., Mertzimekis T.J., Bakalis E., Nomikou P., Gondikas A., Hannington M.D., Petersen S. (**2019**). CTD data profiling to assess the natural hazard of active submarine vent fields: the case of Santorini Island. *15th International Congress of the Geological Society of Greece*.
2. Borovinskaya O., Tanner M., Böhme S., Gondikas A. (**2016**). icpTOF: a new way for the detection of synthetic nanoparticles in environmental systems. *EGU General Assembly Conference Abstracts*. 18, 17755.
3. Schmid D., Micic Batka V., Gondikas A., Velimirovic M., von der Kammer F., Hofmann T. (**2016**). Enhancing nZVI mobility in porous media using humate. *EGU General Assembly Conference Abstracts*. 18, 15740.
4. Toth R., Hiller E., Jurkovic L., Sottnik P., Vozar J., Gondikas A. (**2014**). Evaluation of potentially Toxic elements mobility in tailings impoundment Slovinky (Eastern Slovakia). *International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM*. 2 (5), 259-266.
5. Gondikas A., Wagner S., von der Kammer F., Hofmann T. (**2013**). Nachweis und charakterisierung von TiO₂-nanomaterial in oberflächengewässern. *Vom Wasser*. 111 (3), 67-114.
6. Gondikas A., Aggarwal A., Hsu-Kim H. (**2012**). Surface modification of metallic silver nanoparticles by low molecular weight thiols: Implications for solubility, aggregation, and bioavailability. *Abstracts of papers of the American Chemical Society*. 243.
7. Gondikas A., Deonarine A., Hsu-Kim H., Aiken G., Ryan J., Masion A., Auffan M. (**2010**). Growth and aggregation of ZnS nanoparticles during coprecipitation with aquatic humic substances. *Geochimica et Cosmochimica Acta*. 74, A345.
8. Hsu-Kim H., Gondikas A., Deonarine A., Masion A., Auffan M. (**2010**). Sorption of natural organic ligands to silver and zinc sulfide nanoparticles: Implications for aggregation and dissolution. *Geochimica et Cosmochimica Acta*. 74, A422.

VII) Conference Oral Presentations (selection, presenter is outlined)

1. A. Gondikas, T. Kalampaliki, A. Dura, P. M. Chronakis, P. Nomikou, A. Godelitsas, S. Pergantis, T. Mertzimekis, M. Hasselov. *Detection of anthropogenic and natural nanoparticles in marine waters, in*

- the proximity of islands*. 15th International Conference of the Geological Society of Greece, Athens, EL. May 22 – 24, 2019
2. Gondikas A., Hassellöv M. *Tungsten carbide particles as a test case for fate analysis and tracking of nanomaterials in the environment*. 12th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials, Birmingham, UK. September 3 – 6, 2017
 3. Gondikas A., von der Kammer F., Praetorius A., Kaegi R., Borovinskaya O., Navratilova J., Weiss V., Urey C., Reed R., Ranville J., Hofmann T. *Nanometrology in support of regulatory efforts for the nanotechnology industry*. International Conference on Nanosciences & Nanotechnologies (NN16), Thessaloniki, Greece. July 1 – 8, 2016
 4. Gondikas A., von der Kammer F., Navratilova J., Praetorius A., Cornelis G., Tharaud M., Hassellöv M., Hofmann T. *Application of single particle ICP-MS for the detection of nanomaterials in complex environmental samples*. SETAC Europe 26th Annual Meeting, Nantes, France. May 22 – 26, 2016
 5. Schmid D., Micic V., Gondikas A., Velimirovic M., von der Kammer F., Hofmann T. *Enhancing nZVI mobility in porous media using humate*. European Geosciences Union General Assembly 2016, Vienna, Austria. April 17 – 22, 2016
 6. Gondikas A., von der Kammer F., Neubauer E., Reed R., Kaegi R., Hofmann T. *Engineered Nanoparticles in the Environment: from Theory to Practice*. 249th ACS National Meeting & Exposition, Denver, CO, USA. March 22 – 26, 2015
 7. Gondikas A., von der Kammer F., Neubauer E., Kaegi R., Reed R., Hofmann T. *Sediment enrichment with TiO₂ engineered nanomaterials from the use of sunscreens*. International Conference on Contaminated Sediments - ContaSed, Monte Verità, Ascona, Switzerland. March 8 – 13, 2015
 8. Reed R., von der Kammer F., Gondikas A., Ranville J., Hofmann T. *Attempts to quantify TiO₂ particle release from sunscreen in a natural swimming area: a feasibility study using spICPMS*. SETAC North America 34th Annual Meeting, Nashville, TN, U.S.A. November 17-21, 2013
 9. Gondikas A., von der Kammer F., Reed R., Ranville J., Hofmann T. *Release of TiO₂ Nanoparticles from Sunscreens into Surface Waters*. 23rd SETAC Europe Annual Meeting, Glasgow, UK. May 12-16, 2013
 10. Wagner S., von der Kammer F., Legros S., Gondikas A., Meisterjahn B., Hofmann T. *Characterization of engineered SiO₂-nanoparticles in food matrices: Comprehensive method development based on Flow-Field Flow Fractionation and specific detection*. 7th International Conference of the Environmental Effects of Nanoparticles and Nanomaterials, Banff, Alberta, Canada. September 10-12, 2012
 11. Gondikas A., Reinsch B., Lowry G., Hsu-Kim H. *Influence of thiol-containing ligands for the aggregation and dissolution of metallic silver nanomaterials*. 21st Annual V.M. Goldschmidt Conference, Prague, Czech Republic. August 15-19, 2011
 12. Hsu-Kim H., Deonaraine A., Gondikas A., Zhang T., Lau B.L.T., Aiken G.R., Ryan J.N., Masion A., Auffan M., Deshusses M.A. *Nanoscale Metal Sulfide-Organic Matter Interactions: Implications for Mercury Speciation and Methylation Potential*. International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia. July 25-29, 2011.
 13. Gondikas A., Reinsch B., Lowry G., Hsu - Kim H. *Sorption of cysteine to silver nanoparticles: Implications for aggregation, dissolution, and silver speciation*. 3rd Annual International Conference on the Environmental Implications of Nanotechnology. Durham, NC. May 9 - 11, 2011.
 14. Gondikas A. and Hsu-Kim H. *Surface interactions of thiol-containing organic acids with zinc sulfide and silver nanoparticles*. International Conference on the Environmental Implications of Nanotechnology (ICEIN), Washington, DC, USA. September 9-11, 2009.

VIII) Conference Poster Presentations (selection)

1. Gondikas A., Hassellöv M. *Measurements of particle emissions from commercial shipping activity in surrounding seawater*. 12th International Conference on Air Quality, Thessaloniki, EL. March 9 – 13, 2020
2. Gondikas A., Gallego-Urrea J., Hassellöv M. *Nanomaterial fate in seawater. A rapid sink or intermittent stabilization?* 11th International Conference on the Environmental Effects of nanoparticles and Nanomaterials Golden, CO, USA. August 14 – 18, 2016
3. Tanner M., Borovinskaya O., Gondikas A., Bohme S. *Single particle ICP-TOFMS for the analysis of nanoparticles*. 2016 Winter Conference on Plasma Spectrochemistry, Tucson, Arizona, USA. January 11 – 16, 2016
4. Navratilova J., von der Kammer F., Gondikas A., Hoffman T. *Development of single particle ICPMS for monitoring engineered iron and titanium oxide nanoparticles in the aquatic environment*. SETAC North America 35th Annual Meeting, Vancouver, BC, Canada. November 9 – 13, 2014
5. Reed R., Gondikas A., Ranville J., von der Kammer F., Hofmann T. *Analysis of nano-TiO₂ in sunscreens and real-world samples: a feasibility study using spICPMS*. SETAC Europe Annual Meeting. Glasgow, UK. May 12-16, 2013.
6. Wagner S., Gondikas A., von der Kammer F., Legros S., Hofmann T. *How to quantitatively analyze engineered nanoparticles in a complex food matrix*. EuroFoodChem XVII. Istanbul, Turkey. May 7-10, 2013.
7. Gondikas A., Aggarwal A., Hsu - Kim. *Surface modification of metallic silver nanoparticles by low molecular weight thiols: Implications for solubility, aggregation, and bioavailability*. 243rd ACS National Meeting, San Diego, CA. March 25 - 29, 2012
8. Hsu - Kim H., Gondikas A., Masion A., Auffan M. *Early - stage precipitation kinetics of cysteine-capped zinc sulfide nanoclusters*. International Conference on the Environmental Implications of Nanotechnology, Durham, NC. May 9 - 11, 2011.
9. Gondikas A., Deonaraine A., Hsu-Kim H., Aiken G.R., Ryan J.N., Masion A., Auffan A., Kim B. *Growth and aggregation of ZnS nanoparticles during coprecipitation with aquatic humic substances*. 20th Annual V. M. Goldschmidt Conference Knoxville, TN, USA. June 21-25, 2010

IX) Public Outreach

- Zoological ecophysiology from a climate perspective courses. Gothenburg University, Sweden. January – March, 2017
- Paper featured in Chemistry World:
<https://www.chemistryworld.com/news/finding-a-synthetic-nanoparticle-in-a-haystack/2500358.article>
- NanoDays high-school activity. North Carolina Museum of Life & Sciences. NC, USA (2011)
- FEMMES (Females Excelling More in Math, Engineering, and Science), Workshop volunteer (2010). Duke University, NC, USA

X) Peer-Reviewer

Analytical and Bioanalytical Chemistry, Environmental Chemistry, Environmental Pollution, Environmental Science and Technology, Environmental Science: Nano, Environmental Toxicology and Chemistry, Journal of Chemical Engineering, Nano Impact, Process Biochemistry, Science of the Total Environment, Water Research, Water Science and Technology

Teaching and Advising

I) Lector

Remediation of Inorganic Pollutants (Fall 2013); undergraduate course, University of Vienna, Department of Environmental Geosciences

II) Teaching Assistant

Advanced Engineering Systems Optimization (Fall 2007 & Fall 2008); undergraduate course, Duke University, Department of Civil & Environmental Engineering

III) Graduate Research Advisees

Michail Chronakis (University of Crete, GR); 01-06/2020.

Project description: analysis of nanoparticles in sea water.

Theodora Kalampaliki (National and Kapodistrian University of Athens, GR); 03/2019-06/2020.

Project description: detection of microplastics in drinking water and seawater.

Ana Dura (National and Kapodistrian University of Athens, GR); 02/2019-06/2020.

Project description: influence of seawater physical chemical properties on the fate of nanomaterials.

Nicolas Derrien (Université de Bordeaux, FR); 05-08/2017.

Project description: nanoparticle fate in estuarine and sea water.

Robert Reed (Colorado School of Mines, U.S.A.); Fulbright scholar, 09/2012 – 06/2013.

Project description: development of a single particle ICPMS method for the characterization of TiO₂ nanomaterials in surface waters.

Roman Toth (Comenius University, SK); 08/2013.

Project description: characterization of TiO₂ nanomaterials in sunscreen products.

IV) Undergraduate Research Advisees

Mauritz Hallbach (Oldenburg University, DE); 09-11/2016.

Project description: the effect of exopolymeric substances on the aggregation behavior of nanoparticles in sea water.

Daniel Schuetzenhofer (Vienna University, AU); 03-07/2016.

Project description: development of method for measuring dissolution rates of nanomaterials under far-from-equilibrium concentrations.

Jakob Richter, Daniela Friedl, and Denise Zoeke (Vienna University, AU); 03-10/2013.

Project description: spatial and historic distribution of Ti/Al elemental ratios in sediments from the Alte Donau and Lobau lakes; Vienna, AU.

Karen Yu (Carnegie Mellon University, U.S.A.); CEINT Program, 06-08/2011.

Project description: development of a selective extraction method for silver speciation in sediments contaminated with silver nanoparticles in **mesocosm** experiments

V) High-school Research Advisees

Eileen Jang; Howard Hughes Program, 06-08/2008 and 06-08/2009.

Project description: synthesis and aggregation kinetics of HgS nanoparticles in the presence of amino-acids (*U.S. winner of the 2009 Stockholm Junior Water Prize*).

Avi Aggarwal; Howard Hughes Program, 06-10/2010 and 06-08/2011.

Project description: aggregation kinetics of capped silver nanoparticles in the presence of thiol containing amino-acids in freshwater and artificial seawater

Technical Skills

1. Inductively Coupled Plasma Mass and Atomic Emission Spectroscopy (**ICP-MS, ICP-AES**):

- Normal Mode: measurements of trace and major elements
 - Single Particle ICP-MS (spICPMS): measurement of nanoparticles in suspension
2. Transmission and Scanning Electron Microscopy (**TEM** and **SEM**)
 - Automated methods for the analysis of metallic nanoparticles and microplastic particles
 3. Field Flow Fractionation (**FFF**): Flow-FFF and Sed-FFF for micro- and nano-particles
 4. **Raman** spectroscopy on organic compounds and plastic particles
 5. High Pressure Liquid, Ion, and Size Exclusion Chromatography (**HPLC**, **IC**, and **SEC**):
 - HPLC: measurements of aminoacids and proteins
 - IC: measurement of major ion concentrations in environmental samples
 - SEC: measurement of organometallic species in liver extracts and humic substances
 6. X-ray Absorption Spectroscopy (**XAS**): Synchrotron XAS for determining oxidation state, coordination number, and local atomic structure of solids
 7. Small Angle X-ray Scattering (**SAXS**): monomer particle size and fractal dimensions of aggregated nanoparticles
 8. X-ray Diffraction (**XRD**): crystal structure and monomer size determination of nanoparticles
 9. X-ray Photoelectron Spectroscopy (**XPS**): surface speciation of nanoparticles
 10. micro X-ray Fluorescence (**μXRF**): analysis of lake sediment samples
 11. Static and Dynamic Light Scattering (**SLS** and **DLS**): determination of size distribution, zeta potential, and fractal dimension of particles and aggregates
 12. In charge of **field sampling** design and operation at Santorini caldera and the Saronic Gulf and Caldera of Santorini (Aegean Sea, Greece), the Alte Donau and Lobau lakes (Vienna, Austria), the Gullmarsfjord and Öresund strait (Bohuslän, Sweden) for the collection of water, suspended matter, and sediment samples
 13. Selective extraction procedure for silver speciation in sediment mesocosm samples

Administrative Work

- Principal Investigator of the Nanolsland project (2018 – 2020), University of Athens, Greece
- Primary responsible for the planning and organization of the Nanoparticle Characterization Workshop (fall 2017), Gothenburg University, Kristineberg, Sweden
- Session co-chair at the 11th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (2016), Denver, CO, USA.
- Responsible for laboratory organization, University of Gothenburg (since September 2016)
- Fully responsible for the planning and organization of the Environmental Geosciences Seminar Series (fall 2013), University of Vienna, Austria
- Primary responsible for the planning and organization of the Expert Workshop on the development of OECD TG and GD for nanomaterial dispersion, dispersion stability and dissolution (February 17 – 18, 2014), University of Vienna, Austria
- Assisted in the organization of the 1st Workshop on Field-Flow Fractionation – Mass Spectrometry (FFF-MS) Challenges & Solutions (September 26th & 27th, 2013), University of Vienna, Austria
- Member of several evaluation committees for hiring PhD and Postdoc level applicants at the University of Vienna, Austria

Scholarships and Honors

1. Paper (DOI: [10.1039/C7EN00952F](https://doi.org/10.1039/C7EN00952F)) nominated among 26 papers for “[Best Papers from 2018 in the Environmental Science family of journals: great science with a global reach](#)”

2. Rising Star of Environmental Nanosciences award 2017, 12th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials (ICEENN 2017)
3. KVA fellowship for research at the Sven Lovén Centre for Marine Sciences (SE), from the Royal Swedish Academy of Sciences; project title: Marine Nanoparticles in the North Sea (2016)
4. Research fellowships from the COST Action (ES1205); project title: Detection of engineered TiO₂ and CeO₂ nanoparticles in soil and suspended particulate matter samples (2013 & 2015)
5. Poster award at the WASSER conference. Goslar, Germany (2013).
6. Scholarship by the Greek State Scholarships Foundation (IKY) for PhD studies at Duke University
7. Senol Utku Annual Award for best pre-PhD peer-reviewed journal papers, department of Environmental Engineering, Duke University, 2011
8. Goldschmidt 2011 Travel Grant, August 2011
9. Fellowship from the Duke University Graduate School
10. Jeffrey Taub Engineering Excellence Award by the Department of Civil & Environmental Engineering, Duke University, 2007

Current and Upcoming External Grants

Horizon2020, European Commission. "Evaluation, control and mitigation of the environmental impacts of shipping emissions". PI: Jaakko Kukkonen. €7,493, 885.00. 01/02/2020 – 31/12/2024
 General Secretariat for Research and Technology, Greek Government. "Detection of engineered, incidental, and natural nanoparticles in marine waters, in the proximity of islands". PI: Andreas Gondikas. €172,700. 27/06/2018 – 26/06/2020

IT Literacy

Microsoft Office processing tools, MatLab
 Microscopy software: SmartSEM, SmartPI, Esprit, INCA, AxioVision
 Spectroscopy software: MassHunter, Syngistix, NanoCount, Athena, Artemis, SixPack

Languages

English (fluent); German (good); Greek (native)

References

Prof. Martin Hassellöv (Post-doc advisor), Gothenburg University, Sweden
 e-mail: martin.hasselov@gu.se; Phone: +46-0-3178-69050

Prof. Thilo Hofmann (Post-doc advisor), Vienna University, Austria
 e-mail: thiol.hofmann@univie.ac.at; Phone: +43-1-4277-53320

A. Prof. Heileen Hsu-Kim (Ph.D. advisor), Duke University, USA
 e-mail: hskim@duke.edu; Phone: +1 (919) 660-5109

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