

# CURRICULUM VITAE

## Dr. Davide Spanu

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### Personal Information

Birth date: 28 April 1991

Birthplace: Como

Nationality: Italian

### Current position

**Tenure-Track Assistant Professor**  
(University of Insubria)

### Academic experience

1 January 2024 – present	<b>Tenure-Track Assistant Professor</b> University of Insubria Professor in Analytical Chemistry
8 February 2023	<b>Achievement of the Italian National Scientific Qualification for the functions of Associate Professor in Analytical Chemistry</b>
1 January 2022 – 31 December 2023	<b>Research fellow</b> University of Insubria Project: “Development of silicon carbide with green methodologies for the optimization of advanced components for electric mobility” Industrial partner: SiCreate GmbH s.r.l. Scientific supervisor: Prof. Sandro Recchia
1 July 2021 – 31 December 2021	<b>Senior Research Grant</b> University of Insubria Project title: “Photo-induced formation of AuHg NPs over Au-TiO <sub>2</sub> nanotubes: from an efficient water remediation technique to an innovative synthesis of selective photocatalysts”, Responsabile dell’attività di ricerca: Prof. Sandro Recchia
1 July 2020 – 30 June 2021	<b>Junior Research Grant</b> University of Insubria Project title: “Evaluation of iron ion speciation procedures in sea water”, Tutor: Prof. Damiano Monticelli
1 July 2019 – 30 June 2020	<b>Junior Research Grant</b> University of Insubria Project title: “Implementation of new analytical methods for the analysis of iron ion speciation in sea water”, Tutor: Prof. Damiano Monticelli
1 December 2018 – 31 March 2019	<b>Scholarship for Research Activities</b> University of Insubria Project title: “Development of speciation methods for Cr (III) and Cr (VI) at very low concentrations”, Tutor: Prof. Sandro Recchia
1 October 2015 – 30 September 2018	<b>PhD in Environmental and Chemical Sciences</b> University of Insubria Thesis title: “Development of nanostructured supported photocatalysts for inorganic pollutants removal and hydrogen production?”, defense date: 21 February 2019, Tutor: Prof. Sandro

October 2013 – July 2015	<p>Recchia</p> <p><b>MSc degree in Chemistry</b> University of Insubria Final mark: 110/110 cum Laude Thesis title: “<i>Hardware and software development of instrumentation for EXAFS spectroscopy</i>”</p>
October 2010 – October 2013	<p><b>BSc in Chemistry and Industrial Chemistry</b> University of Insubria Final mark: 110/110 cum Laude Thesis title: “<i>Qualitative and quantitative analysis of gaseous effluents in synthetic rocks</i>”</p>

### Research activity

Dr. Spanu authored/co-authored 50 scientific articles (around 50% first/corresponding author) in journals indexed in the ISI catalogue, including prestigious journals such as Nature Communications, Communications Earth & Environment, Journal of Hazardous Materials, Analytical Chemistry, Analytica Chimica Acta, ACS Catalysis and Applied Catalysis B: Environmental. He served as a presenter of 10 contributions (5 oral, 5 posters) at national/international conferences and co-authored more than 25 contributions. Currently, its h-index is 17 with 821 citations (source: Scopus, 10<sup>th</sup> October 2024).

His research activity is focused on topics concerning both the world of analytical chemistry and the world of materials science. His main lines of research can be summarized as follows:

- Development of new analytical methods for the speciation analysis of trace elements in different environmental matrices.
- Development of new analytical protocols for the determination of ultratrace elements in complex matrices (e.g. gasoline, lubricating oils, ceramic materials).
- Use of materials derived from biomass (biochar) for the development of electrochemical sensors and for (photo)catalytic applications of environmental interest.
- Development of analytical protocols for the mechanistic study of the interaction between trace elements and microplastics.
- Synthesis of innovative nanostructured materials for photo(electro)catalytic applications of environmental interest.

### Teaching activity

Academic year	Degree Course	Subject	Credits
2018-2019	BSc course in “Chemistry and Industrial Chemistry”	Analytical Chemistry 2 Mod.B	6
2019-2020	BSc course in “Chemistry and Industrial Chemistry”	Analytical Chemistry 2 Mod.B	6
2020-2021	BSc course in “Chemistry and Industrial Chemistry”	Instrumental Analytical Chemistry: Laboratory	6
2021-2022	BSc course in “Chemistry and Industrial Chemistry”	Instrumental Analytical Chemistry: Laboratory	6
2021-2022	MSc course in “Environmental Science”	Analytical Methods for Environmental Monitoring	6
2022-2023	BSc course in “Chemistry and Industrial Chemistry”	Instrumental Analytical Chemistry: Laboratory	6
2022-2023	MSc course in “Environmental Science”	Analytical Methods for Environmental Monitoring	6
2022-2023	BSc course in “Chemistry and Industrial Chemistry”	Green Analytical Chemistry	6
2023-2024	BSc course in “Chemistry and Industrial Chemistry”	Instrumental Analytical Chemistry: Laboratory	6

2023-2024	MSc course in “Environmental Science”	Analytical Methods for Environmental Monitoring	6
2023-2024	BSc course in “Chemistry and Industrial Chemistry”	Green Analytical Chemistry	6

### **List of publications**

- 1 López, A. R.; Ortega-Caneda, E.; Espada-Bellido, E.; Spanu, D.; Zava, M.; Monticelli, D. 'Decoding trace element speciation in mushrooms: Analytical techniques, comprehensive data review, and health implications'. *FOOD CHEMISTRY*. 2025, 463, doi: 10.1016/j.foodchem.2024.141460
- 2 Hurley, R.; Binda, G.; Briassoulis, D.; Carroccio, S. C.; Cerruti, P.; Convertino, F.; Dvorakova, D.; Kernchen, S.; Laforsch, C.; Loder, M. G. L.; Pulkrabova, J.; Schettini, E.; Spanu, D.; Tsagkaris, A. S.; Vox, G.; Nizzetto, L. 'Production and characterisation of environmentally relevant microplastic test materials derived from agricultural plastics'. *SCIENCE OF THE TOTAL ENVIRONMENT*. 2024, 946, doi: 10.1016/j.scitotenv.2024.174325
- 3 Abudukade, M. T.; Pinna, M.; Spanu, D.; De Amicis, G.; Minguzzi, A.; Vertova, A.; Recchia, S.; Ghigna, P.; Mul, G.; Altomare, M. 'In Situ X-ray Absorption Spectroscopy Study of the Deactivation Mechanism of a Ni-SrTiO<sub>3</sub> Photocatalyst Slurry Active in Water Splitting'. *JOURNAL OF PHYSICAL CHEMISTRY C*. 2024, 128, doi: 10.1021/acs.jpcc.4c04688
- 4 López, A. R.; Binda, G.; Roncoroni, G.; Recchia, S.; Monticelli, D.; Spanu, D. 'Optimizing Antimony Speciation Analysis via Frontal Chromatography-ICP-MS to Explore the Release of PET Additives'. *MOLECULES*. 2024, 29, doi: 10.3390/molecules29122870
- 5 Papis, M.; Colombo, S.; Spanu, D.; Recchia, S.; Nava, D.; Foschi, F.; Broggin, G.; Loro, C. 'Diastereoselective Palladaelectro-Catalyzed Construction of Bromomethyl Morpholines as Key Step To Access Morpholino Homonucleosides'. *ORGANIC LETTERS*. 2024, 26, doi: 10.1021/acs.orglett.4c01790
- 6 Spanu, D.; Butti, L.; Recchia, S.; Dossi, C.; Monticelli, D. 'A high-throughput, straightforward procedure for biomonitoring organomercury species in human hair'. *TALANTA*. 2024, 270, doi: 10.1016/j.talanta.2023.125612
- 7 Binda, Gilberto; Kalčíková, Gabriela; Allan, Ian John; Hurley, Rachel; Rødland, Elisabeth; Spanu, Davide; Nizzetto, Luca 'Microplastic aging processes: Environmental relevance and analytical implications'. *TRAC. TRENDS IN ANALYTICAL CHEMISTRY*. 2024, 172, doi: 10.1016/j.trac.2024.117566
- 8 Rodland, E. S.; Binda, G.; Spanu, D.; Carnati, S.; Bjerke, L. R.; Nizzetto, L. 'Are eco-friendly “green” tires also chemically green? Comparing metals, rubbers and selected organic compounds in green and conventional tires'. *JOURNAL OF HAZARDOUS MATERIALS*. 2024, 476, doi: 10.1016/j.jhazmat.2024.135042
- 9 Binda, Gilberto; Carnati, Stefano; Costa, Margarida; Hostyeva, Vladyslava; Leu, Eva; Skjellbred, Birger; Spanu, Davide; Šupraha, Luka; Trotta, Sara; Vogelsang, Christian; Nizzetto, Luca 'The interaction between plastics and microalgae affects community assembly and nutrient availability'. *COMMUNICATIONS EARTH & ENVIRONMENT*. 2024, 5, doi: 10.1038/s43247-024-01706-y
- 10 Boldrocchi, G.; Villa, B.; Monticelli, D.; Spanu, D.; Magni, G.; Pachner, J.; Mastore, M.; Bettinetti, R. 'Zooplankton as an indicator of the status of contamination of the Mediterranean Sea and temporal trends'. *MARINE POLLUTION BULLETIN*. 2023, 197, doi: 10.1016/j.marpolbul.2023.115732
- 11 Binda, G.; Carnati, S.; Spanu, D.; Bellasi, A.; Hurley, R.; Bettinetti, R.; Monticelli, D.; Pozzi, A.; Nizzetto, L. 'Selection of the optimal extraction protocol to investigate the interaction between trace elements and environmental plastic'. *JOURNAL OF HAZARDOUS*

- MATERIALS. 2023, 452, doi: 10.1016/j.jhazmat.2023.131330
- 12 Carnati, S.; Pozzi, A.; Spanu, D.; Monticelli, D.; Bettinetti, R.; Boldrocchi, G.; Nizzetto, L.; Binda, G. 'Assessing sources and fractions of metals associated with environmental plastics: a case study in Lake Como (Italy)'. ENVIRONMENTAL SCIENCE. ADVANCES. 2023, 2, doi: 10.1039/d3va00254c
  - 13 Spanu, D.; Fantinuoli, S.; Binda, G.; Rampazzi, L.; Monticelli, D.; Recchia, S. 'Streamlining antimony speciation analysis in natural waters with frontal chromatography-ICP-MS'. SPECTROCHIMICA ACTA, PART B: ATOMIC SPECTROSCOPY. 2023, 207, doi: 10.1016/j.sab.2023.106762
  - 14 Spanu, Davide; Palestra, Alessandro; Prina, Veronica; Monticelli, Damiano; Bonanomi, Simone; Nanot, Sandro Usseglio; Binda, Gilberto; Rampazzi, Laura; Sessa, Gianluca; Callejo Munoz, David; Recchia, Sandro 'Tackling the Challenging Determination of Trace Elements in Ultrapure Silicon Carbide by LA-ICP-MS'. MOLECULES. 2023, 28, doi: 10.3390/molecules28062845
  - 15 Spanu, D.; Dhahri, A.; Binda, G.; Monticelli, D.; Pinna, M.; Recchia, S. 'Ultrafast Electrochemical Self-Doping of Anodic Titanium Dioxide Nanotubes for Enhanced Electroanalytical and Photocatalytic Performance'. CHEMOSENSORS. 2023, 11, doi: 10.3390/chemosensors11110560
  - 16 Binda, Gilberto; Zanetti, Giorgio; Bellasi, Arianna; Spanu, Davide; Boldrocchi, Ginevra; Bettinetti, Roberta; Pozzi, Andrea; Nizzetto, Luca 'Physicochemical and biological ageing processes of (micro)plastics in the environment: a multi-tiered study on polyethylene'. ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH INTERNATIONAL. 2023, 30, doi: 10.1007/s11356-022-22599-4
  - 17 Binda, Gilberto; Costa, Margarida; Supraha, Luka; Spanu, Davide; Vogelsang, Christian; Leu, Eva; Nizzetto, Luca 'Untangling the role of biotic and abiotic ageing of various environmental plastics toward the sorption of metals'. SCIENCE OF THE TOTAL ENVIRONMENT. 2023, 893, doi: 10.1016/j.scitotenv.2023.164807
  - 18 Pinna, M.; Signorelli, A.; Binda, G.; Dossi, C.; Rampazzi, L.; Spanu, D.; Recchia, S. 'How to clean and safely remove HF from acid digestion solutions for ultra-trace analysis: a microwave-assisted vessel-inside-vessel protocol'. METHODS AND PROTOCOLS. 2022, 5, doi: 10.3390/mps5020030
  - 19 Binda, Gilberto; Frascoli, Francesca; Spanu, Davide; Ferrario, Maria F.; Terrana, Silvia; Gambillara, Roberto; Trotta, Sara; Noble, Paula J.; Livio, Franz A.; Pozzi, Andrea; Michetti, Alessandro M. 'Geochemical Markers as a Tool for the Characterization of a Multi-Layer Urban Aquifer: The Case Study of Como (Northern Italy)'. WATER. 2022, 14, doi: 10.3390/w14010124
  - 20 Spanu, D.; Roncoroni, G.; Cinosi, A.; Furian, R.; Siviero, G.; Monticelli, D. 'Quantitative extraction and determination of trace elements by surfactant-free liquid-liquid microextraction from aviation and motor fuels'. FUEL. 2022, 310, doi: 10.1016/j.fuel.2021.122458
  - 21 Binda, G.; Faccini, D.; Zava, M.; Pozzi, A.; Dossi, C.; Monticelli, D.; Spanu, D. 'Exploring the Adsorption of Pb on Microalgae-Derived Biochar: A Versatile Material for Environmental Remediation and Electroanalytical Applications'. CHEMOSENSORS. 2022, 10, doi: 10.3390/chemosensors10050168
  - 22 Pinna, M.; Wei, A. W. W.; Spanu, D.; Will, J.; Yokosawa, T.; Spiecker, E.; Recchia, S.; Schmuki, P.; Altomare, M. 'Amorphous NiCu Thin Films Sputtered on TiO<sub>2</sub> Nanotube Arrays: A Noble-Metal Free Photocatalyst for Hydrogen Evolution'. CHEMCATCHEM. 2022, -, doi: 10.1002/cctc.202201052
  - 23 Spinazzè, Andrea; Spanu, Davide; Della Bella, Pietro; Corti, Cristina; Borghi, Francesca; Fanti, Giacomo; Cattaneo, Andrea; Wise, William Robert; Davis, Stefan John; Cavallo, Domenico Maria; Recchia, Sandro 'On the Determination of Cr(VI) in Cr(III)-Rich Particulates: From the Failure of Official Methods to the Development of an Alternative Protocol'. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND

- PUBLIC HEALTH. 2022, 19, doi: 10.3390/ijerph191912111
- 24 Boldrocchi, G.; Spanu, D.; Polesello, S.; Valsecchi, S.; Garibaldi, F.; Lanteri, L.; Ferrario, C.; Monticelli, D.; Bettinetti, R. 'Legacy and emerging contaminants in the endangered filter feeder basking shark *Cetorhinus maximus*'. MARINE POLLUTION BULLETIN. 2022, 176, doi: 10.1016/j.marpolbul.2022.113466
  - 25 Tumiati, S; Recchia, S; Remusat, L; Tiraboschi, C; Sverjensky, D A; Manning, C E; Vitale Brovarone, A; Boutier, A; Spanu, D; Poli, S 'Subducted organic matter buffered by marine carbonate rules the carbon isotopic signature of arc emissions'. NATURE COMMUNICATIONS. 2022, 13, doi: 10.1038/s41467-022-30421-5
  - 26 Spanu, D.; Butti, L.; Boldrocchi, G.; Bettinetti, R.; Recchia, S.; Monticelli, D. 'Selective organomercury determination by ICP-MS made easy'. ANALYTICA CHIMICA ACTA. 2022, 1206, doi: 10.1016/j.aca.2022.339553
  - 27 Binda, Gilberto; Pozzi, Andrea; Spanu, Davide; Livio, Franz; Trotta, Sara; Bitonte, Raffaele 'Integration of photogrammetry from unmanned aerial vehicles, field measurements and discrete fracture network modeling to understand groundwater flow in remote settings: test and comparison with geochemical markers in an Alpine catchment'. HYDROGEOLOGY JOURNAL. 2021, 29, doi: 10.1007/s10040-021-02304-4
  - 28 Spanu, D.; Binda, G.; Marelli, M.; Rampazzi, L.; Recchia, S.; Monticelli, D. 'Quantitative determination of the surface distribution of supported metal nanoparticles: A laser ablation-ICP-MS based approach'. CHEMOSENSORS. 2021, 9, doi: 10.3390/chemosensors9040077
  - 29 Spanu, D.; Nemenyi, A.; Marelli, M.; Binda, G.; Guagliardi, A.; Bertolotti, F.; Giussani, B.; Recchia, S. 'Development of a Scanning Chemical Vapour Deposition Reactor for the realization of patterned and non-patterned depositions: a preliminary overview'. THIN SOLID FILMS. 2021, 717, doi: 10.1016/j.tsf.2020.138446
  - 30 Boldrocchi, G.; Monticelli, D.; Mazzoni, M.; Spanu, D.; Bettinetti, R. 'Accumulation of Selected Trace Elements in Shads from Three Lakes: First Insights from Italian Pre-Alpine Area'. BIOLOGICAL TRACE ELEMENT RESEARCH. 2021, -, doi: 10.1007/s12011-021-02577-6
  - 31 Boldrocchi, G.; Spanu, D.; Mazzoni, M.; Omar, M.; Baneschi, I.; Boschi, C.; Zinzula, L.; Bettinetti, R.; Monticelli, D. 'Bioaccumulation and biomagnification in elasmobranchs: a concurrent assessment of trophic transfer of trace elements in 12 species from the Indian Ocean'. MARINE POLLUTION BULLETIN. 2021, 172, doi: 10.1016/j.marpolbul.2021.112853
  - 32 Spanu, D.; Monticelli, D.; Binda, G.; Dossi, C.; Rampazzi, L.; Recchia, S. 'One-minute highly selective Cr(VI) determination at ultra-trace levels: An ICP-MS method based on the on-line trapping of Cr(III)'. JOURNAL OF HAZARDOUS MATERIALS. 2021, 412, doi: 10.1016/j.jhazmat.2021.125280
  - 33 Binda, Gilberto; Spanu, Davide; Monticelli, Damiano; Pozzi, Andrea; Bellasi, Arianna; Bettinetti, Roberta; Carnati, Stefano; Nizzetto, Luca 'Unfolding the interaction between microplastics and (trace) elements in water: A critical review'. WATER RESEARCH. 2021, 204, doi: 10.1016/j.watres.2021.117637
  - 34 Pinna, M.; Binda, G.; Altomare, M.; Marelli, M.; Dossi, C.; Monticelli, D.; Spanu, D.; Recchia, S. 'Biochar nanoparticles over tio2 nanotube arrays: A green co-catalyst to boost the photocatalytic degradation of organic pollutants'. CATALYSTS. 2021, 11, doi: 10.3390/catal11091048
  - 35 Binda, Gilberto; Bellasi, Arianna; Spanu, Davide; Pozzi, Andrea; Cavallo, Domenico Maria; Bettinetti, Roberta 'Evaluating the environmental impacts of personal protective equipment use by the general population during the COVID-19 pandemic: A case study of lombardy (northern Italy)'. ENVIRONMENTS. 2021, 8, doi: 10.3390/environments8040033
  - 36 Binda, Gilberto; Spanu, Davide; Bettinetti, Roberta; Magagnin, Luca; Pozzi, Andrea; Dossi, Carlo 'Comprehensive comparison of microalgae-derived biochar from different feedstocks: A prospective study for future environmental applications'. ALGAL RESEARCH. 2020, 52,

- doi: 10.1016/j.algal.2020.102103
- 37 Spanu, D.; Butti, L.; Boldrocchi, G.; Bettinetti, R.; Monticelli, D. 'High-throughput, multi-batch system for the efficient microwave digestion of biological samples'. *ANALYTICAL SCIENCES*. 2020, 36, doi: 10.2116/analsci.19A004
  - 38 Spanu, Davide; Recchia, Sandro; Schmuki, Patrik; Altomare, Marco 'Thermal-Oxidative Growth of Sub-Stoichiometric WO<sub>3-x</sub> Nanowires at Mild Conditions'. *PHYSICA STATUS SOLIDI. RAPID RESEARCH LETTERS*. 2020, -, doi: 10.1002/pssr.202000235
  - 39 Ji, Lei; Spanu, Davide; Denisov, Nikita; Recchia, Sandro; Schmuki, Patrik; Altomare, Marco 'A Dewetted-Dealloyed Nanoporous Pt Co-Catalyst Formed on TiO<sub>2</sub> Nanotube Arrays Leads to Strongly Enhanced Photocatalytic H<sub>2</sub> Production'. *CHEMISTRY - AN ASIAN JOURNAL*. 2020, 15, doi: 10.1002/asia.201901545
  - 40 Gorla, G.; Mestres, M.; Boque, R.; Riu, J.; Spanu, D.; Giussani, B. 'ATR-MIR spectroscopy to predict commercial milk major components: A comparison between a handheld and a benchtop instrument'. *CHEMOMETRICS AND INTELLIGENT LABORATORY SYSTEMS*. 2020, 200, doi: 10.1016/j.chemolab.2020.103995
  - 41 Spanu, Davide; Binda, Gilberto; Dossi, Carlo; Monticelli, Damiano 'Biochar as an alternative sustainable platform for sensing applications: A review'. *MICROCHEMICAL JOURNAL*. 2020, -, doi: 10.1016/j.microc.2020.105506
  - 42 Spanu, Davide; Minguzzi, Alessandro; Recchia, Sandro; Shahvardanfard, Fahimeh; Tomanec, Ondrej; Zbořil, Radek; Schmuki, Patrik; Ghigna, Paolo; Altomare, Marco 'An Operando X-Ray Absorption Spectroscopy Study of a NiCu-TiO<sub>2</sub> Photocatalyst for H<sub>2</sub> Evolution'. *ACS CATALYSIS*. 2020, -, doi: 10.1021/acscatal.0c01373
  - 43 Dossi, Carlo; Binda, Gilberto; Monticelli, Damiano; Pozzi, Andrea; Recchia, Sandro; Spanu, Davide 'Exploiting Laser-Ablation ICP-MS for the Characterization of Salt-Derived Bismuth Films on Screen-Printed Electrodes: A Preliminary Investigation'. *BIOSENSORS*. 2020, 10, doi: 10.3390/bios10090119
  - 44 Spanu, D.; Bestetti, Alessandro; Hildebrand, H.; Schmuki, P.; Altomare, M.; Recchia, S. 'Photocatalytic reduction and scavenging of Hg(II) over templated-dewetted Au on TiO<sub>2</sub> nanotubes'. *PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES*. 2019, 18, doi: 10.1039/c8pp00424b
  - 45 Spanu, D.; Monticelli, D.; Rampazzi, L.; Dossi, C.; Recchia, S. 'Introducing Frontal Chromatography-Inductively Coupled Plasma-Mass Spectrometry as a Fast Method for Speciation Analysis: The Case of Inorganic Arsenic'. *ANALYTICAL CHEMISTRY*. 2019, 91, doi: 10.1021/acs.analchem.9b03279
  - 46 Spanu, Davide; Dal Santo, Vladimiro; Malara, Francesco; Naldoni, Alberto; Turolla, Andrea; Antonelli, Manuela; Dossi, Carlo; Marelli, Marcello; Altomare, Marco; Schmuki, Patrik; Recchia, Sandro 'Photoelectrocatalytic oxidation of As(III) over hematite photoanodes: A sensible indicator of the presence of highly reactive surface sites'. *ELECTROCHIMICA ACTA*. 2018, 292, doi: 10.1016/j.electacta.2018.10.003
  - 47 Monticelli, Damiano; Civati, Davide; Giussani, Barbara; Dossi, Carlo; Spanu, Davide; Recchia, Sandro 'A viscous film sample chamber for Laser Ablation Inductively Coupled Plasma - Mass Spectrometry'. *TALANTA*. 2018, 179, doi: 10.1016/j.talanta.2017.10.060
  - 48 Spanu, Davide; Recchia, Sandro; Mohajernia, Shiva; Tomanec, Ondřej; Kment, Štěpán; Zboril, Radek; Schmuki, Patrik; Altomare, Marco 'Templated dewetting-alloying of NiCu Bilayers on TiO<sub>2</sub>nanotubes enables efficient noble-metal-free photocatalytic H<sub>2</sub>evolution'. *ACS CATALYSIS*. 2018, 8, doi: 10.1021/acscatal.8b01190
  - 49 Spanu, Davide; Recchia, Sandro; Mohajernia, Shiva; Schmuki, Patrik; Altomare, Marco 'Site-selective Pt dewetting on WO<sub>3</sub>-coated TiO<sub>2</sub> nanotube arrays: An electron transfer cascade-based H<sub>2</sub> evolution photocatalyst'. *APPLIED CATALYSIS. B, ENVIRONMENTAL*. 2018, 237, doi: 10.1016/j.apcatb.2018.05.061
  - 50 Recchia, Sandro; Spanu, Davide; Bianchi, D.; Dossi, Carlo; Pozzi, Andrea; Monticelli, Damiano 'Understanding microwave vessel contamination by chloride species'. *TALANTA*. 2016, 159, doi: 10.1016/j.talanta.2016.05.073

### **Conference contributions (attended as presenter/speaker)**

#### Oral contributions:

- O1 *“Rapid Antimony speciation analysis in natural waters via frontal chromatography-ICP-MS”*, D.Spanu, D. Monticelli, S. Recchia. XXX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Vasto (Italy), 17-21 September 2023.
- O2 *“Highly selective determination of methylmercury in biological samples: an ICPMS method based on the on-line blocking of inorganic mercury”*, D. Spanu, S. Recchia, D. Monticelli. XXIX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Milazzo (Italy), 11-15 September 2022.
- O3 *“On-line ion trapping by frontal chromatography ICP-MS: a low-cost strategy for the fast speciation of inorganic pollutants”*, D. Spanu, D. Monticelli, S. Recchia. XXVII Congresso Nazionale della Società Chimica Italiana, Milano (Italy), 14-23 September 2021.
- O4 *“Frontal Chromatography-ICP-MS: a novel method for fast inorganic As(III) and As(V) speciation”*, D. Spanu, C. Dossi, D. Monticelli, S. Recchia. XXVIII Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Bari (Italy), 22-26 September 2019.
- O5 *“Migration tests on model antibacterial Ag NPs coatings”*, D. Spanu, S. Recchia, D. Monticelli. XXVI Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Giardini Naxos (Italy), 18-22 September 2016.

#### Poster contributions:

- P1 *“Ultra-sensitive high-throughput methylmercury detection in human hair via streamlined ICP-MS analysis”*, D. Spanu, D. Monticelli, S. Recchia. International Conference on Environmental & Food Monitoring (ISEAC41), Amsterdam (The Netherlands), 20-24 November 2023.
- P2 *“Selective determination of methylmercury in human hair by a simple ICP-MS based method”*, D.Spanu, D. Monticelli, S. Recchia. XXX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Vasto (Italy), 17-21 September 2023.
- P3 *“A clean and safe method to displace HF after microwave-assisted acid digestion”*, D. Spanu, M. Pinna, G. Binda, S. Recchia. XXIX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Milazzo (Italy), 11-15 September 2022.
- P4 *“On the multiple aspects of Hg(II) photo-reduction@Au-TiO<sub>2</sub>: from Hg(II) removal to selective AuHg catalysts formation”*, D. Spanu, M. Altomare, P. Schmuki, S. Recchia. 11th European Conference on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA11), Torino (Italy), 6-10 June 2022.
- P5 *“Photocatalytic reduction and scavenging of Hg(II) over templated-dewetted Au on TiO<sub>2</sub> nanotubes”*, D. Spanu, M. Altomare, P. Schmuki, S. Recchia. SP7 7th International Conference on Semiconductor Photochemistry, Milano (Italy), 11-14 September 2019.

### **Other conference contributions (as co-author, not attended)**

#### Oral contributions:

- O6 *“Trace element speciation made easy: introducing Frontal Chromatography ICP-MS”*, D. Monticelli, D. Spanu, S. Recchia. International Conference on Environmental & Food Monitoring (ISEAC41), Amsterdam (The Netherlands), 20-24 November 2023.
- O7 *“Overcoming beam damage in In-situ XAS: study of Ni-SrTiO<sub>3</sub> deactivation during overall photocatalytic water splitting”*, M. Pinna, M.T. Abudukade, D. Spanu, A. Minguzzi, P. Ghigna, S. Recchia, G. Mul, M. Altomare. Incontro di Spettroscopia Analitica (ISA 2023), Milano (Italy), 14-16 June 2023.
- O8 *“Can plastic pollution affect the environmental fate of (trace) elements? A preliminary investigation in water”*, G. Binda, L. Supraha, M. Costa, D. Spanu, C. Vogelsang, E. Leu, L. Nizzetto. SETAC Europe 33<sup>rd</sup> annual meeting, Dublino (Irlanda), 30 April – 4 May 2023.

- O9 “Determinazione del cromo esavalente in campioni di particolato: proposta di un approccio alternativo validato e applicato al settore conciario”, A. Spinazzè, D. Spanu, P. Della Bella, F. Borghi, G. Fanti, A. Cattaneo, D.M. Cavallo, S. Recchia. 38° Congresso Nazionale di igiene industriale e ambientale, Cagliari (Italy), 22-24 June 2022.
- O10 “Biochar Nanoparticles Decorated TiO<sub>2</sub> Nanotube Arrays for the Photocatalytic Degradation of Methylene Blue: A Step Towards the Development of Biomass-derived Cocatalysts”, M. Pinna, D. Spanu, S. Recchia. 11th European Conference on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA11), Torino (Italy), 6-10 June 2022.
- O11 “An integrated analytical approach to investigate the interaction between microplastics and (trace) elements in environmental samples”, G. Binda, S. Carnati, A. Pozzi, D. Spanu, D. Monticelli, C. Dossi, L. Nizzetto. XXIX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Milazzo (Italy), 11-15 September 2022.
- O12 “The challenging speciation of Cr(VI) in toxicological relevant matrices: where official methods can fail and how to develop alternative protocols”, S. Recchia, D. Spanu, C. Dossi, A. Spinazzè, A. Cattaneo, D.M. Cavallo. XXIX Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Milazzo (Italy), 11-15 September 2022.
- O13 “A sequential extraction scheme to selectively analyze adsorbed (trace) elements on plastic particles”, G. Binda, S. Carnati, D. Spanu, D. Monticelli, A. Pozzi, A. Bellasi, R. Bettinetti, L. Nizzetto, Setac Europe 32<sup>nd</sup> Annual Meeting, Copenhagen (Denmark), May 2022.
- O14 “Template-Dewetted Au Nanoparticles on TiO<sub>2</sub> Nanocavities for Photocatalytic Reduction and Scavenging of Hg(II)”, M. Altomare, D. Spanu, P. Schmuki, S. Recchia, 237<sup>th</sup> ECS Meeting, Montreal (Canada), May 2020 (DOI: 10.1149/MA2020-01482717mtgabs)
- O15 “Dewetting-Alloying of NiCu Bilayers on TiO<sub>2</sub> Surfaces for Noble Metal-Free Photocatalytic H<sub>2</sub> Evolution”, M. Altomare, D. Spanu, S. Recchia, A. Minguzzi, P. Ghigna, P. Schmuki. 237<sup>th</sup> ECS Meeting, Montreal (Canada), May 2020 (DOI: 10.1149/MA2020-0111892mtgabs)
- O16 “Inorganic arsenic speciation in water sample: an ultrafast method based on frontal chromatography/ICP-MS”, D. Spanu, M. Pinna, C. Dossi, S. Recchia. XXVII Congresso della Divisione di Chimica Analitica della Società Chimica Italiana, Bologna (Italy), September 2018.
- O17 “Photoelectrochemical abatement of arsenic in water by hematite photoelectrodes”, D. Spanu, F. Malara, A. Turolla, A. Naldoni, M. Antonelli, S. Recchia, V. Dal Santo. EUROPACAT 2017 13th European Congress on Catalysis, Firenze (Italy), August 2017.

Poster contributions:

- P6 “How to clean and safely remove fluoride from solutions after HF-based acid digestion: a microwave-assisted vessel-inside-vessel protocol”, M. Pinna, D. Spanu, G. Binda, C. Dossi and S. Recchia. XXVII Congresso Nazionale della Società Chimica Italiana, Milano (Italy), September 2021.
- P7 “ATR-FTIR spectroscopy to predict commercial milk major components: a comparison between a handheld and a benchtop instruments”, G. Gorla, M. Mestres, R. Boquè, J. Riu, D. Spanu, B. Giussani. 10th Colloquium Chemiometricum Mediterraneum, Menorca (Spagna), June 2019
- P8 “Templated Dewetting-Alloying of NiCu Bilayers on TiO<sub>2</sub> Nanotubes Enables Efficient Noble Metal-Free Photocatalytic H<sub>2</sub> Evolution”, D. Spanu, S. Recchia, S. Mohajernia, O. Tomanec, S. Kment, R. Zbořil, P. Schmuki, and M. Altomare. 69th Annual Meeting of the International Society of Electrochemistry, Bologna (Italy), September 2018.
- P9 “A Cocatalytic Electron Transfer Cascade on TiO<sub>2</sub> Nanotubes for Photocatalytic H<sub>2</sub> Evolution” M. Altomare, N. T. Nguyen, D. Spanu, S. Hejazi, P. Schmuki. 68th Annual Meeting of the International Society of Electrochemistry, Providence (USA), August 2017.

Como, 10/10/2024

Signature

