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 (RTT)
(University of Insubria)

Academic experience

1 January 2024 – present
Tenure-Track Assistant Professor (RTT)
University of Insubria
Professor in Analytical Chemistry

28 February 2025
Achievement of the Italian National Scientific Qualification for the functions of Full Professor in Analytical Chemistry

8 February 2023
Achievement of the Italian National Scientific Qualification for the functions of Associate Professor in Analytical Chemistry

1 January 2022 – 31 December 2023
Research fellow (RTD-A)
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
Senior Research Grant
University of Insubria
Project title: "*Photo-induced formation of AuHg NPs over Au-TiO_2 nanotubes: from an efficient water remediation techinque to an innovative synthesis of selective photocatalysts",* Responsabile dell'attività di ricerca: Prof. Sandro Recchia

1 July 2020 – 30 June 2021
Junior Research Grant
University of Insubria
Project title: "*Evaluation of iron ion speciation procedures in sea water",* Tutor: Prof. Damiano Monticelli

1 October 2019 – 31 January 2020
Visiting Postdoctoral Researcher
University of Erlangen-Nuremberg
Tutor: Prof. Patrik Schmuki

1 July 2019 – 30 June 2020
Junior Research Grant
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
Scholarship for Research Activities

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 **PhD in Environmental and Chemical Sciences**
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 Recchia

October 2013 – July 2015 **MSc degree in Chemistry**
University of Insubria
Final mark: 110/110 cum Laude
Thesis title: "*Hardware and software development of instrumentation for EXAFS spectroscopy* "

October 2010 – October 2013 **BSc in Chemistry and Industrial Chemistry**
University of Insubria
Final mark: 110/110 cum Laude
Thesis title: "*Qualitative and quantitative analysis of gaseous effluents in synthetic rocks* "

Research activity

Dr. Spanu authored/co-authored 61 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 14 contributions (6 oral, 8 posters) at national/international conferences and co-authored more than 30 contributions. Currently, its h-index is 20 with 1292 citations (source: Scopus, 27th January 2026).
His research activity spans both analytical chemistry and materials science. The main lines of research can be summarized as follows:

- Development and optimization of photocatalytic materials and processes aimed at environmental remediation and sustainable energy conversion, with particular emphasis on semiconductor nanomaterials modified by transition metals.
- Investigation of electrocatalytic systems for selective and efficient chemical transformations, including the design of advanced electrode materials to enhance reaction kinetics and stability.
- Advancement of analytical methodologies for trace element speciation and environmental monitoring, focusing on the interaction of contaminants with complex environmental matrices such as plastics and microplastics.
- Integration of material synthesis, advanced characterization techniques, and application-driven testing to address challenges in environmental and energy-related fields.
- Use of materials derived from biomass (biochar) for the development of electrochemical sensors and for (photo)catalytic applications of environmental interest

Scientific Responsibility and Research Grants

- (February 2024 – December 2025) Principal Investigator (Scientific Coordinator) of the research project "*PHOTONS: Selective Photocatalytic Nitrate-to-Nitrogen Transformation in Water*", funded by the University of Insubria under the competitive call "Fund for Tenure-Track Researchers – 2023" (€25,000).
- (July 2022) Project Proposer and Scientific Lead of the research project "*A Nanocomposite of Biochar Carbon Dots over TiO_2 Nanotube Arrays: Towards Greener Supported Photocatalysts for the Degradation of Pharmaceuticals*", funded through a competitive call for a Senior Postdoctoral Research Fellowship (€19,367). The funding was formally declined due to incompatibility with the appointment as Research Fellow (RTD-A).
- (July 2021 – December 2021) Project Proposer and Scientific Lead of the research project "*Photo-induced Formation of AuHg Nanoparticles on Au–TiO_2 Nanotubes: from an Efficient Water*

Remediation Technique to an Innovative Synthesis of Selective Photocatalysts", funded through a competitive call for a Senior Postdoctoral Research Fellowship (€19,367).

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
2024-2025	BSc course in "Chemistry and Industrial Chemistry"	Instrumental Analytical Chemistry: Laboratory	6
2024-2025	MSc course in "Environmental Science"	Analytical Methods for Environmental Monitoring	6
2024-2025	BSc course in "Chemistry and Industrial Chemistry"	Green Analytical Chemistry	6
2024-2025	PhD course in "Chemical and Environmental Sciences"	Environmental Photocatalysis	3
2025-2026	BSc course in "Chemistry and Industrial Chemistry"	Instrumental Analytical Chemistry: Laboratory	6
2025-2026	MSc course in "Chemistry"	Solid State Analytical Chemistry	6
2025-2026	BSc course in "Chemistry and Industrial Chemistry"	Green Analytical Chemistry	6

Institutional activity

- (July 2021- January 2022) Member of the Internal Research Quality Assurance Committee (AiQuaR), Department of Science and High Technology, University of Insubria. Served as the representative of postdoctoral research fellows. The committee is responsible for ensuring the quality of Research and Third Mission activities through systematic data collection, monitoring, and self-assessment of research outputs, and for supporting the definition of departmental policies and strategies aimed at improving research performance and Third Mission outcomes.

- (November 2024-now) Member of the Doctoral Board (Collegio dei Docenti) of the PhD Programme in Chemical and Environmental Sciences (DiSCA), Department of Science and High Technology, University of Insubria.
- (January 2025-now) Member of the Academic Senate of the University of Insubria, serving as representative of researchers.

Editorial activity

- (June 2020-now) Peer reviewer for more than 80 manuscripts published in international, Web of Science–indexed journals. Reviewed journals include field-relevant and interdisciplinary outlets such as Molecules, Chemosensors (MDPI), Separation and Purification Technology, Spectrochimica Acta Part B (Elsevier), as well as multidisciplinary journals including Scientific Reports (Nature Portfolio) and ACS Omega (American Chemical Society)
- (2021-2022) Invited Guest Editor of the Special Issue "Biochar-Based Sustainable Sensing Platforms", Chemosensors (MDPI, ISSN 2227-9040).
- (2024-2025) Invited Guest Editor of the Topical Collection "Chemical Dynamics of Microplastics in Aquatic and Terrestrial Ecosystems", Discover Environment (Springer Nature, ISSN 2731-9431).
- (2024-2025) Invited Guest Editor of the Special Issue "Degradation of Pollutants by Nanostructured Photocatalysts", Nanomaterials (MDPI, ISSN 2079-4991).
- (2025-2026) Invited Guest Editor of the Special Issue "Advances in Trace Element Analysis: Techniques and Applications", Molecules (MDPI, ISSN 1420-3049).
- (2025-now) Member of the Early Career Editorial Board, Molecules (MDPI, ISSN 1420-3049).

List of publications

1 Spanu, D.; Besana, D.; Rimoldi, S.; Recchia, S.; Terova, G. 'Detoxification of Tuna from Mercury through L-Cysteine: A Speciation-Based Study'. FOOD CHEMISTRY 2026, 505, 148156, doi: 10.1016/j.foodchem.2026.148156.

2 Michelangeli, M. E.; Brooks, S.; Kuehr, S.; Forsman, E.; Rødland, E. S.; Brandsma, S. H.; Margalef, M.; Heinzelmann, M.; Spanu, D.; Rundberget, J. T.; et al. 'Tyre-Derived Ecotoxicity: Differentiating the Effects from Particles and Chemical Leachates on the Blue Mussel Mytilus Edulis'. ENVIRON. CHEM. ECOTOXICOL. 2026, 8, 934–951, doi: 10.1016/j.enceco.2026.01.003.

3 Colombo, S.; Cartamina, E.; Papis, M.; Spanu, D.; Lo Presti, L.; Macetti, G.; Poli, G.; Contini, A.; Broggini, G.; Loro, C. 'Electrochemical Intramolecular Aminobromination of Alkenes'. EUR. J. ORG. CHEM. 2025, 29 (2), doi: 10.1002/ejoc.202500808.

4 Roncoroni, G.; Spanu, D.; Binda, G.; Monticelli, D. 'Metal Ion Isotope Ratio Using ESI-Orbitrap HRMS: Proof of Concept and Initial Performance Evaluation for Lead Isotopic Ratios'. ANAL. CHEM. 2025, 97 (25), 13176–13183, doi: 10.1021/acs.analchem.5c01033.

5 Boldrocchi, G.; Villa, B.; Monticelli, D.; Spanu, D.; Binda, G.; Pachner, J.; Magni, G.; Fasola, E.; Stefani, F.; Bettinetti, R. 'Zooplankton as a Bioindicator of Marine Contamination for Filter-Feeding Basking Sharks, Fin Whales and Devil Rays at Caprera Canyon (Mediterranean Sea) '. ARCH. ENVIRON. CONTAM. TOXICOL. 2025, 89 (1), 1–10, doi: 10.1007/s00244-025-01137-6.

6 Michelangeli, M. E.; Brandsma, S. H.; Margalef, M.; Forsman, E.; Kuehr, S.; Spanu, D.; Gomes, T. 'Chemical Leachates from Car Tyre Granulates and PET Bottles Induce Toxic Effects on Mytilus edulis Haemocytes'. ENVIRON. CHEM. ECOTOXICOL. 2025, 7, 776–790, doi: 10.1016/j.enceco.2025.03.010

7 Spanu, D.; Omodei, C.; Binda, G.; Grande, T.; Recchia, S. 'Tellurium Speciation via Frontal Chromatography ICP-MS: An Innovative and Effective Approach for the Ultratrace

Detection in Environmental Matrices'. J. ANAL. TEST. 2025, 102809, doi: 10.1007/s41664-025-00366-x

8 Binda, G.; Carnati, S.; Passignani, N.; Hurley, R.; Nizzetto, L.; Spanu, D.; Kalčíková, G.; Pozzi, A. 'A Screening of Metal(loid) Content in Conventional and Compostable Plastic Polymers: Understanding the Sources and the Connected Environmental Implications'. ENVIRON. POLLUT. 2025, 375, 126364, doi: 10.1016/j.envpol.2025.126364

9 Michelangeli, M. E.; Brandsma, S. H.; Margalef, M.; Kuehr, S.; Spanu, D.; Gomes, T. 'Elastomer Leachates Modulate Haemocytes Responses in Mytilus edulis'. MAR. POLLUT. BULL. 2025, 219, 118298, doi: 10.1016/j.marpolbul.2025.118298

10 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

11 Carnati, S.; Pozzi, A.; Spanu, D.; Bettinetti, R.; Nizzetto, L.; Kalcikova, G.; Botta, L.; Binda, G. "Towards harmonization of metal(loid)s determination in conventional and compostable plastics: Comparison of acid digestion protocols in LDPE and PBAT/TPS blends". CHEMOSPHERE. 2024, 367, 143581, doi: 10.1016/j.chemosphere.2024.143581

12 Pinna, M., Zava, M., Grande, T., Prina, V., Monticelli, D., Roncoroni, G., Rampazzi, L., Hildebrand, H., Altomare, M., Schmuki, P., Spanu, D., & Recchia, S. (2024). Enhanced Photocatalytic Paracetamol Degradation by NiCu-Modified TiO2 Nanotubes: Mechanistic Insights and Performance Evaluation. NANOMATERIALS. 2024, 14(19), 1577, doi: 10.3390/nano14191577.

13 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

14 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-SrTiO3 Photocatalyst Slurry Active in Water Splitting'. JOURNAL OF PHYSICAL CHEMISTRY. C. 2024, 128, doi: 10.1021/acs.jpcc.4c04688

15 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

16 Papis, M.; Colombo, S.; Spanu, D.; Recchia, S.; Nava, D.; Foschi, F.; Broggini, 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

17 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

18 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

19 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

20 Binda, Gilberto; Carnati, Stefano; Costa, Margarida; Hostyeva, Vladyslava; Leu, Eva; Skjelbred, 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

21 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

22 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

23 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

24 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

25 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

26 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

27 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

28 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

29 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

30 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

31 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

32 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

33 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 TiO2 Nanotube Arrays: A Noble-Metal Free Photocatalyst for Hydrogen Evolution'. CHEMCATCHEM. 2022, -, doi: 10.1002/cctc.202201052

34 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

35 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

36 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

37 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

38 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

39 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

40 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

41 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

42 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

43 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

44 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

45 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

46 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

47 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

48 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

49 Spanu, Davide; Recchia, Sandro; Schmuki, Patrik; Altomare, Marco 'Thermal-Oxidative Growth of Sub-Stoichiometric WO3-x Nanowires at Mild Conditions'. PHYSICA STATUS SOLIDI. RAPID RESEARCH LETTERS. 2020, -, doi: 10.1002/pssr.202000235

50 Ji, Lei; Spanu, Davide; Denisov, Nikita; Recchia, Sandro; Schmuki, Patrik; Altomare, Marco 'A Dewetted-Dealloyed Nanoporous Pt Co-Catalyst Formed on TiO2 Nanotube Arrays Leads to Strongly Enhanced Photocatalytic H-2 Production'. CHEMISTRY - AN ASIAN JOURNAL. 2020, 15, doi: 10.1002/asia.201901545

51 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

52 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

53 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-TiO2 Photocatalyst for H2 Evolution'. ACS CATALYSIS. 2020, -, doi: 10.1021/acscatal.0c01373

54 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

55 Spanu, D.; Bestetti, Alessandro; Hildebrand, H.; Schmuki, P.; Altomare, M.; Recchia, S. 'Photocatalytic reduction and scavenging of Hg(II) over templated-dewetted Au on TiO2 nanotubes'. PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES. 2019, 18, doi: 10.1039/c8pp00424b

56 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

57 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

58 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

59 Spanu, Davide; Recchia, Sandro; Mohajernia, Shiva; Tomanec, Ondřej; Kment, Štěpán; Zboril, Radek; Schmuki, Patrik; Altomare, Marco 'Templated dewetting-alloying of NiCu

Bilayers on TiO2nanotubes enables efficient noble-metal-free photocatalytic H2evolution'. ACS CATALYSIS. 2018, 8, doi: 10.1021/acscatal.8b01190

60 Spanu, Davide; Recchia, Sandro; Mohajernia, Shiva; Schmuki, Patrik; Altomare, Marco 'Site-selective Pt dewetting on WO3-coated TiO2 nanotube arrays: An electron transfer cascade-based H2 evolution photocatalyst'. APPLIED CATALYSIS. B, ENVIRONMENTAL. 2018, 237, doi: 10.1016/j.apcatb.2018.05.061

61 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 *"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.

O3 *"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.

O4 "*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.

O5 "*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.

O6 "*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 *"Innovative High-Throughput Method for Ultratrace Methylmercury Detection in Biological Samples: A Breakthrough in Biomonitoring for Public Health Risk Assessment"*, D. Spanu, D. Monticelli, S. Recchia. SETAC Europe 35th Annual Meeting, Vienna (Austria), 11-15 May 2025.

P2 *"Innovative High-Throughput Method for Ultratrace Methylmercury Detection in Biological Samples: A Breakthrough in Biomonitoring for Public Health Risk Assessment"*, D. Spanu, D. Monticelli, S. Recchia. SETAC Europe 35th Annual Meeting, Vienna (Austria), 11-15 May 2025.

P3 *"Rapid Antimony Speciation in PET Additives Using Frontal Chromatography-ICP-MS: A New Approach for Environmental Risk Assessment"*, D. Spanu, G. Binda, A.R. Lopez, G. Roncoroni, D. Monticelli, S. Recchia. SETAC Europe 35th Annual Meeting, Vienna (Austria), 11-15 May 2025.

P4 *"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.

P5 *"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.

P6 *"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.

P7 *"On the multiple aspects of Hg(II) photo-reduction@Au-TiO_2: 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.

P8 "*Photocatalytic reduction and scavenging of Hg(II) over templated-dewetted Au on TiO_2 nanotubes*", D. Spanu, M. Altomare, P. Schmuki, S. Recchia. SP7 7th International Conference on Semiconductor Photochemistry, Milano (Italy), 11-14 September 2019.

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