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## PERSONAL INFORMATION

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**Irini Furxhi**, *MSTox, PhD, Post doc, MSCA follower, freelancer*

**Date of birth** 07/10/1992

**Nationality** Albanian, Greek

**Address:** Viale Antonio Silvani, Bologna, Italy

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**Work emails:** [irini.furxhi@issmc.cnr.it](mailto:irini.furxhi@issmc.cnr.it)

**Orcid:** 0000-0002-2263-0279

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## CURRENT POSITION

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27 <sup>th</sup> Sept. 2023 – to date	<b>Freelancing activities (VAT registered)</b> <i>P.IVA: 04150641209</i> <i>TIPO ATTIVITA': 749099 - ALTRE ATTIVITA' PROFESSIONALI NCA</i>
1 <sup>st</sup> Nov. 2023 – to date	<b>Marie Skłodowska-Curie Actions (MSCA) Post-doc Follower</b> <i>CNR-ISSMC Istituto di Scienza, Tecnologia e Sostenibilità per lo Sviluppo dei Materiali Ceramici, Via Granarolo, 64, 48018 Faenza, Italy</i>
1 <sup>st</sup> Jun. 2021 – to date	<b>Adjunct Lecturer</b> <i>University of Limerick, Dept. of Accounting and Finance, Kemmy Business School, Limerick, Ireland</i> Risk assessment and management of Nanomaterials. Tools and concepts.

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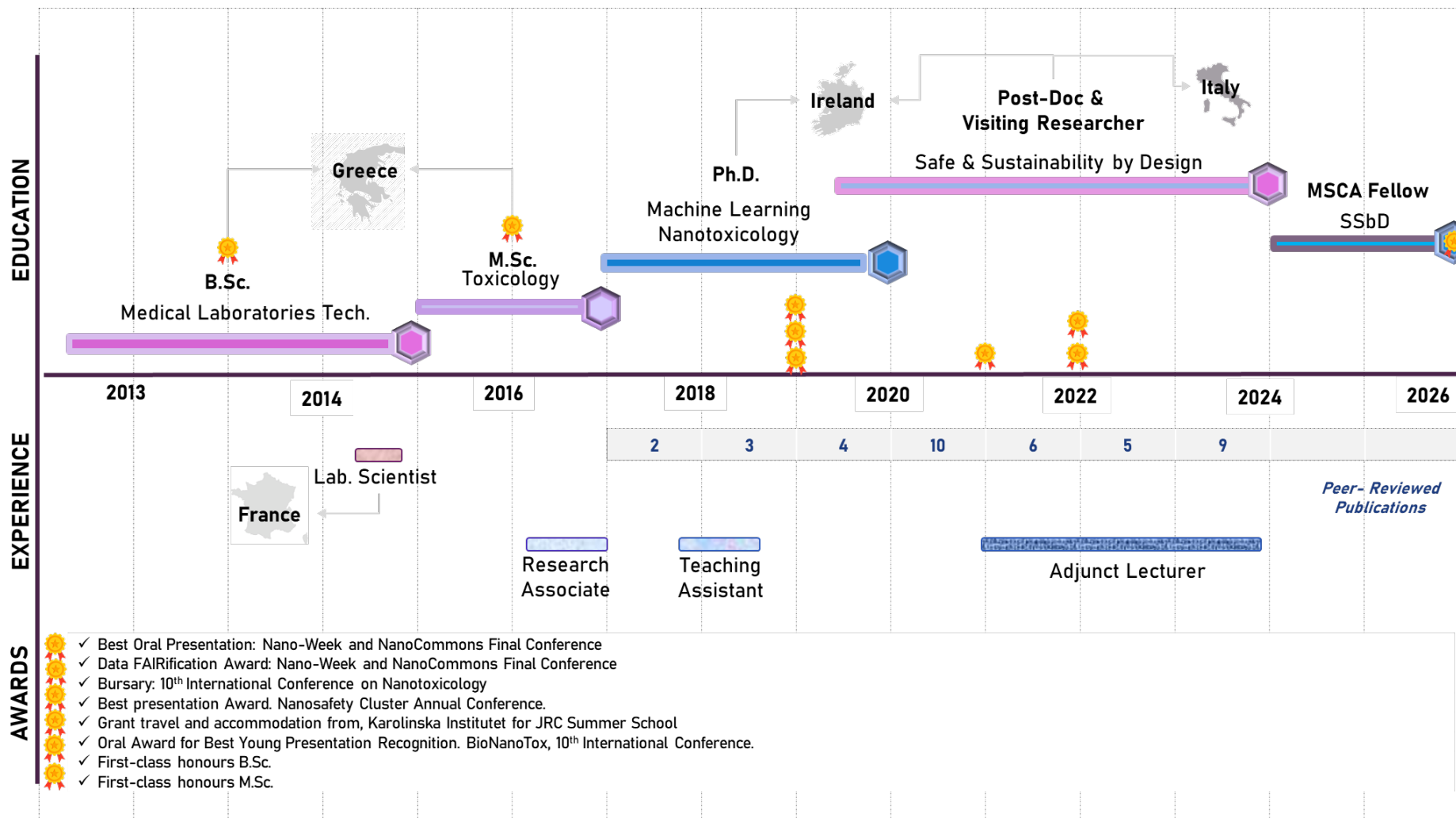


Figure 1. Curriculum Vitae in a glance.



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## WORK EXPERIENCE

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- Postdoctoral Researcher**  
*Transgero Ltd, Kemmy Business School, Sreelane, Co. Limerick, Ireland*  
→Activities in Europe-wide projects on Environmental and Health Risk Assessment and Management of Engineered Nanomaterials. Governance framework tools for managing possible nanotechnologies risks: RiskGONE: (<https://riskgone.wp.nilu.no/>) & NANORIGO Project (<https://riskgone.wp.nilu.no/>)  
Data management, FAIR data, data curation and machine learning application in safety-by-design approaches. SSbD framework by the JRC applied within ASINA (<https://www.asina-project.eu/>)
- 1<sup>st</sup> Apr. 2020 - to  
30<sup>th</sup> Oct. 2023
- Visiting Researcher**  
*CNR-ISSMC Istituto di Scienza, Tecnologia e Sostenibilità per lo Sviluppo dei Materiali Ceramici, Via Granarolo, 64, 48018 Faenza, Italy*  
→Secondment agreement between CNR and Transgero to accelerate data management.
- 15<sup>th</sup> Nov. 2021 -  
to 30<sup>th</sup> Oct. 2023
- Invited Lecturer**  
*University of Bologna, Department of Chemistry "Giacomo Ciamician"*  
→Nanomaterials and nanotechnologies regulations for master's degree in chemical Innovation, ERASMUS Mundus.
- 23-26 May 2022
- Teaching Assistant**  
*Department of Accounting and Finance, Kemmy Business School, University of Limerick, Ireland*  
→Invited Lecturer on Risk and Governance of Nanomaterials risk.
- Sept. 2018 to  
Oct. 2019.
- Research Associate**  
*Department of Chemical Engineering, Aristotle University of Thessaloniki, University Campus, Bldg. D, Rm 201, 54124 Thessaloniki, Greece. Assoc. Prof. Dimosthenis Sarigiannis*  
→Scientific activities in Europe-wide projects: HEALS (<http://www.heals-eu.eu/>). ERNCIP (<https://erncip-project.jrc.ec.europa.eu/>). HBM4EU: 2017-2021 (<http://www.eea.europa.eu/themes/human/human-biomonitoring/>) CHROME life: (<http://www.enve-lab.eu/index.php/work/crome-life/>).
- Mar. 2016 to  
Aug. 2017
- Laboratory Scientist**  
*Laboratory of Molecular Biology, Etablissement Français du sang Bourgogne/Franche-Comté (EFSB/F-C), Besancon, France. Dr Christophe Ferrand (PhD, HDR), Tel: 33(0)381615615*  
→Methods for diagnosis of patients carrying hematologic diseases (DNA and RNA preparation and extraction, quality control (electrophoresis) and verification with Multiplex PCR, RTqPCR, rtPCR, Chimerism (Polymorphism study), MicroBeads CD3+, Sanger sequencing, Illumina HiScan, Western Blot, transcriptomics etc..)
- 7<sup>th</sup> April to 30<sup>th</sup>  
September 2014
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## EDUCATION

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- Doctor of Philosophy, PhD in Machine Learning and Nanotoxicology**  
*University of Limerick, Dept. of Accounting and Finance, Kemmy Business School, Limerick, Ireland Transgero Ltd, Kemmy Business School, Sreelane, Co. Limerick*  
→Activities in Europe-wide projects on Environmental and Health Risk Assessment and Management of Engineered Nanomaterials. Thesis: "A machine learning examination of nanomaterial safety" (<https://ulir.ul.ie/handle/10344/9250>). Supervisors: Dr Finbarr Murphy, Dr Martin Mullins and Dr Craig A. Poland.
- 11<sup>th</sup> Sept. 2017  
to 11<sup>th</sup> Aug.  
2020
- Master in Toxicology**  
*University of Thessaly, School of Health Sciences, Department of Biochemistry & Biotechnology, Larissa, Greece*  
→Molecular Toxicology, Organ Toxicology, Environmental and dietary Toxicology, Toxicokinetics, Forensic Toxicology, Risk Assessment, Risk Management. Thesis: "Assessment of public health risk from environmental toxicant using biomarkers and biokinetics modelling". Supervisor: Prof. A. Sarigiannis.  
Graduation Grade: **9.15/10 (first-class honors degrees)**
- 3<sup>rd</sup> Apr. 2015 to  
3<sup>rd</sup> Apr. 2017
- Bachelors in Medical Laboratory Technology**  
*Technological Educational Institute (TEI) School of Health - Welfare, Department of Medical Laboratories State Institution of Higher Education, Greece*  
→Application of Medical Laboratory Technology such as: biochemistry, immunology, microbiology, molecular biology, toxicology, histopathology etc., Thesis "Internal Quality Control in Diagnostic Laboratories". Supervisor: Panagiotis Plageras (Educational Professor and Director of Institute)
- 2010 to 10<sup>th</sup>  
June 2015
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Graduation Grade: **8.88/10 (first-class honors degrees)**

## TRAINING COURSES

<b>Course</b> 25-27/10/2023	<b>European Commission – Joint Research Centre (JRC) Safe and Sustainable by Design Boot Camp</b> <i>Via Enrico Fermi, 2749 Ispra, Italy</i>
<b>Course</b> 15-19/05/2023	<b>Nanosafety Training School: Safe and Sustainable by Design Approaches for Chemical, Advanced Materials &amp; Plastics</b> <i>Auditorium Santa Margherita, Venice – Italy</i>
<b>Course</b> 15-19/05/2022	<b>Nanosafety Training School: Towards Safe and Sustainable by Design Advanced (Nano)Materials</b> <i>Auditorium Santa Margherita, Venice – Italy</i>
<b>Course</b> 21-24/05/2019	<b>European Commission – Joint Research Centre (JRC) Summer School - Non-animal Approaches in Science, Challenges &amp; Future Directions</b> <i>Via Enrico Fermi, 2749 Ispra, Italy</i> Flash presentation, Poster, Part of the Debate: In silico tools as stand-alone solution

## SUPERVISION

<b>PhD Student Supervision</b> <b>Mahsa Mirzaei</b> 21 <sup>st</sup> Oct. 2020 – 22 <sup>nd</sup> June 2023	The thesis is entitled Application of Machine Learning tools for functionality predictions of nano formulation.
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## PERSONAL SKILLS

<b>Mother tongue(s)</b>	Albanian, Greek				
	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
<b>English</b>	C1	C1	C1	C1	C1
	Certificate of Competency in English, University of Michigan – United States of America Certificate of Competency in English, Cambridge – British Council – IELTS (Overall Band Score: 7.5/10)				
<b>French</b>	C1	C1	C1	B2	B2
	Certificate of Delf - B2				
<b>Italian</b>	Lessons have initiated for C2 diploma acquisition				

**Communication skills:** Confident public speaker

**Job-related skills:** Adaptability, Persistence.

## SUPERVISION

<b>PhD Student Supervision - Mahsa Mirzaei.</b> 21 <sup>ST</sup> Oct. 2020 – 22 <sup>nd</sup> Jun. 2023	The thesis is entitled Application of Machine Learning tools for functionality predictions of nano formulation.
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## AWARDS & HONOURS

Nov. 2022	Lara Faccani Prize “ESG (Environmental, Social and Governance) Challenge Iren 2023”. Title “Nano – photocatalysts: design, up – scale and characterisation models” Massimo Perrucca and Irini Furxhi, inspired this work and allowed her to improve the quality and relevance of her Ph.D. Thesis results.
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## Curriculum Vitae Dr. Irini Furxhi

Jun. 2022	Data FAIRification Award: Nano-Week and NanoCommons Final Conference, June 20-24, Cyprus.
June. 2022	Best Oral Presentation: Data Shepherding in ASINA. The Initiation. Nano-Week and NanoCommons Final Conference, June 20-24, Cyprus.
Apr. 2021	Bursary Award Winner for 10th International Conference on Nanotoxicology Conference, Online,
Oct. 2019	Best presentation Award. Nanosafety Cluster Annual Conference. Towards in silico nanosafety assessment-integrating experimental and computational approaches. 8th and 9th October 2019, Copenhagen, Denmark
Mar. 2019	Grant travel and accommodation from Institute of Environmental Medicine, Karolinska Institutet for JRC Summer School on Non-Animal Approaches in Science – Challenges & Future Directions
May 2019	Oral Award for Best Young Presentation Recognition. BioNanoTox, 10th International Conference: Biomaterials and Nano biomaterials: Recent advances Safety-Toxicology and Ecology Issues. May 05-12, 2019, Agape beach, Heraklion, Crete, Greece.
Sept. 2016	First-class honours- Master of Toxicology, University of Thessaly, School of Health Sciences, Department of Biochemistry & Biotechnology, Larissa, Greece
Sept. 2015	First-class honours - Medical Laboratory Scientist. Technological Educational Institute (TEI) School of Health - Welfare, Department of Medical Laboratories State Institution of Higher Education, Greece

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### COMMUNICATION – DISSEMINATION ACTIVITIES

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15-16 June 2018	PROTECT project (H2020). Organizing 18M meeting, Limerick, Ireland.
October 4-6, 2017	19th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, Rome – Italy, Mediterranean Scientific Association of Environmental Protection, MESAEP

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### PRESENTATIONS

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14/09/2023	<b>Invited speaker.</b> Oral Presentation at “The role of 3Rs in the age of One Health: where we are and where we’re going” held on 13-15 September 2023 at University of Milano Bicocca, Italy. Title: Data-Driven Quantitative Intrinsic Hazard Criteria for Nanoparticle Development in a Safe-by-Design Paradigm: A Case Study of Silver Nanoforms
08/06/2023	Oral Presentation at the nanoSAFE & NSC week 2023, 5-9 Jun 2023, Grenoble, France. Title: Data-Driven Quantitative Intrinsic Hazard Criteria for Nanoparticle Development in a Safe-by-Design Paradigm: A Case Study of Silver Nanoforms
20/06/2022	Oral Presentation at the Nano-week “Evolution of Nanosafety and materials sustainability as we transition into Horizon Europe”. Data Shepherding in ASINA. The Initiation. 20-24 June 2022, Limassol, Cyprus
20/14/2021	Virtual Presentation at the International Conference on Nanotoxicology (NanoTox 2021), Tue, Apr 20, 2021 – Thu, Apr 22, 2021. Title: Predicting in vitro Neurotoxicity Induced by nanoparticles Using Machine Learning
16/11/2020	Virtual Presentation at the 7th International Conference on Health & Safety Issues Related to Nanomaterials for a Socially Responsible Approach (NanoSAFE 2020), 16th to 20th November 2020 on a virtual platform. Title: Predicting in vitro Neurotoxicity Induced by nanoparticles Using Machine Learning
08/10/2019	Oral Presentation at the Nanosafety Cluster Annual Conference 8-10 October 2019. Title: Ensembles, comparison and ranking of nanoparticles toxicity classifiers: a hands-on paradigm on the S2NANO database. Copenhagen, Denmark.
12/09/2019	Oral Presentation at the PTC 2019 - 12th International Particle Toxicology Conference 11-13 September 2019. Title: Ensembles, comparison and ranking of nanoparticles toxicity classifiers: a hands-on paradigm on the S2NANO database. Salzburg, Austria



<b>09/05/2019</b>	Oral Presentation at the BioNanoTox, 10 <sup>th</sup> International Conference: Biomaterials and Nano biomaterials: Recent advances Safety-Toxicology and Ecology Issues. May 05-12 2019. Title: Bayesian Networks Application for the prediction of cellular effects from Genome-Wide Transcriptomics studies of exposure to Nanoparticles. Heraklion, Crete, Greece
<b>21/09/2018</b>	Poster at the 9th International Conference on Nanotoxicology - NanoTox. Title: Predicting Nanomaterials toxicity pathways based on Toxicogenomics studies using Bayesian Networks. Neuss, Germany
<b>24/07/2018</b>	Oral Presentation at the 18 <sup>th</sup> IEEE International Conference on Nanotechnology. Title: Predicting Nanomaterials toxicity pathways based on Toxicogenomics studies using Bayesian Networks. Cork, Ireland
<b>28/01/2017</b>	Oral Presentation at the 1 <sup>st</sup> Symposium of Toxicology. Title: Public Health Risk Assessment of toxic releases to the environment using Biomarkers and Biokinetic Models. Larissa, Greece
<b>06/05/2017</b>	Oral Presentation at the 6 <sup>th</sup> Environmental Conference of Macedonia. Title: Risk Assessment of Arsenic to Serres, Greece. Thessaloniki, Greece.
<b>27/06/2017</b>	Oral Presentation at the 6 <sup>th</sup> International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE) and SECOTOX Conference. Title: Risk Assessment of Arsenic to Serres, Greece. Thessaloniki, Greece
<b>05/10/2017</b>	Oral Presentation at the 19th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region (MESAEP). Title: Assessment of public health risk from arsenic using biomarkers and biokinetics modelling. Rome, Italy.
<b>10/05/2017</b>	Poster: High dimension biological analysis of carbon nanotube toxicity   Aristotle University of Thessaloniki, Greece Denis Sarigiannis, Irini Furxhi, Tsatsakis Aris - Brussels, SETAC Europe 27 <sup>th</sup> Annual Meeting

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### List of peer- reviewed Publications

1. Furxhi, I., et al. (2018). Predicting Nanomaterials toxicity pathways based on genome-wide transcriptomics studies using Bayesian networks. 2018 IEEE 18th International Conference on Nanotechnology (IEEE-NANO). 1-4, DOI: 10.1109/NANO.2018.8626300
2. Sheehan, B., et al. (2018), Hazard Screening Methods for Nanomaterials: A Comparative Study. International Journal of Molecular Sciences, 19(3), 649. doi: 10.3390/ijms19030649
3. Furxhi, I., et al. (2019). "Application of Bayesian networks in determining nanoparticle-induced cellular outcomes using transcriptomics." Nanotoxicology 13(6): 827-848. doi.org/10.1080/17435390.2019.1595206
4. Furxhi, I., et al. (2019). "Machine learning prediction of nanoparticle in vitro toxicity: A comparative study of classifiers and ensemble-classifiers using the Copeland Index." Toxicology Letters 312: 157-166. doi: 10.1016/j.toxlet.2019.05.016
5. Cunneen, M., et al. (2019). "Autonomous Vehicles and Avoiding the Trolley (Dilemma): Vehicle Perception, Classification, and the Challenges of Framing Decision Ethics." Cybernetics and Systems: 1-22. doi.org/10.1080/01969722.2019.1660541
6. Furxhi, I., et al. (2020). "Practices and Trends of Machine Learning Application in Nanotoxicology." Nanomaterials 10(1): 116. doi.org/10.3390/nano10010116
7. Furxhi, I., et al. (2020) Nanotoxicology data for in silico tools. A literature review." Nanotoxicology DOI: 10.1080/17435390.2020.1729439
8. Furxhi, I., et al. (2020) Predicting In Vitro Neurotoxicity Induced by Nanoparticles Using Machine Learning." Int. J. Mol. Sci. 2020, 21(15), 5280; <https://doi.org/10.3390/ijms21155280>
9. Murphy, F., et al. (2020) Reduction of Health Care-Associated Infections (HAIs) with Antimicrobial Inorganic Nanoparticles Incorporated in Medical Textiles: An Economic Assessment, Nanomaterials 10 (5). Doi: 10.3390/nano10050999
10. Arvanitis, et al. (2021) Prediction of the effective reproduction number of COVID-19 in Greece. A machine learning approach using Google mobility data. MedRxiv (COVID-19 SARS-CoV-2). Doi: <https://doi.org/10.1101/2021.05.14.21257209>
11. Furxhi, I., et al. (2021). Data shepherding in nanotechnology. The Initiation. Nanomaterials 2021, 11(6), 1520; <https://doi.org/10.3390/nano11061520>





12. Koivisto A.J., et al (2021). Assessment of exposure determinants and exposure levels by using stationary concentration measurements and a probabilistic Near-Field/Far-Field exposure model. *Open Research Europe*, 1, 72, doi:10.12688/openreseurope.13752.1
13. Mirzaei, M., et al. (2021). "A Machine Learning Tool to Predict the Antibacterial Capacity of Nanoparticles." *Nanomaterials* 11(7): 1774. <https://doi.org/10.3390/nano11071774>
14. Jannusch, T., et al. (2021). "Surveillance and privacy – Beyond the panopticon. An exploration of 720-degree observation in level 3 and 4 vehicle automation." *Technology in Society* 66: 101667. <https://doi.org/10.1016/j.techsoc.2021.101667>
15. Irini, F., et al. (2021). "Associations between mobility patterns and COVID-19 deaths during the pandemic: A network structure and rank propagation modelling approach." *Array* 11: 100075. <https://doi.org/10.1016/j.array.2021.100075>
16. Furxhi, I., et al. (2021). "Data Shepherding in Nanotechnology. The Exposure Field Campaign Template." *Nanomaterials* 11(7): 1818. <https://doi.org/10.3390/nano11071818>
17. Furxhi, I., et al. (2021). "Data Shepherding in Nanotechnology: An Antimicrobial Functionality Data Capture Template." *Coatings* 11(12): 1486. <https://doi.org/10.3390/coatings11121486>
18. Mirzaei, M., et al. (2021). "A Supervised Machine-Learning Prediction of Textile's Antimicrobial Capacity Coated with Nanomaterials." *Coatings* 11(12): 1532. <https://doi.org/10.3390/coatings11121532>
19. Furxhi, I., et al. (2021). "Precaution as a Risk in Data Gaps and Sustainable Nanotechnology Decision Support Systems: a Case Study of Nano-Enabled Textiles Production." *NanoEthics*. <https://doi.org/10.1007/s11569-021-00400-z>
  
20. Furxhi, I. (2022). "Health and environmental safety of nanomaterials: O Data, Where Art Thou?" *NanoImpact* 25: 100378. DOI: <https://doi.org/10.1016/j.impact.2021.100378>
21. Furxhi, I., et al. (2022). "ASINA Project: Towards a Methodological Data-Driven Sustainable and Safe-by-Design Approach for the Development of Nanomaterials." *Frontiers in Bioengineering and Biotechnology* 9. <https://doi.org/10.3389/fbioe.2021.805096>
22. Koivisto, A. J., et al. (2022). "Quantifying Emission Factors and Setting Conditions of Use According to ECHA Chapter R.14 for a Spray Process Designed for Nanocoating's—A Case Study." *Nanomaterials* 12(4): 596. <https://doi.org/10.3390/nano12040596>
23. Murphy, F., et al. (2022). "The risk perception of nanotechnology: evidence from twitter." *RSC Advances* 12(18): 11021-11031.
24. Mullins, M., et al. (2022). "(Re)Conceptualizing decision-making tools in a risk governance framework for emerging technologies—the case of nanomaterials." *Environment Systems and Decisions*. <https://doi.org/10.1007/s10669-022-09870-2>
25. Koivisto, A. J., et al. (2022). "Burden of Disease (BoD) Assessment to Estimate Risk Factors Impact in a Real Nanomanufacturing Scenario." *Nanomaterials* 12(22): 4089.
  
26. Mirzaei, M., et al. (2023). "Employing Supervised Algorithms for the Prediction of Nanomaterial's Antioxidant Efficiency." *Int. J. Mol. Sci.* 24(3): 2792. <https://doi.org/10.3390/ijms24032792>
27. Furxhi, I., et al. (2023). "Status, implications and challenges of European safe and sustainable by design paradigms applicable to nanomaterials and advanced materials." *RSC Sustainability*. 2023, 1, 234 – 250. <https://doi.org/10.1039/D2SU00101B>
28. Furxhi, I., et al. (2023). "Data-Driven Quantitative Intrinsic Hazard Criteria for Nanoproduct Development in a Safe-by-Design Paradigm: A Case Study of Silver Nanoforms." *ACS Applied Nano Materials*. <https://doi.org/10.1021/acsnm.3c00173>
29. Kose, O., et al. (2023). "Physicochemical Transformations of Silver Nanoparticles in the Oro-Gastrointestinal Tract Mildly Affect Their Toxicity to Intestinal Cells In Vitro: An AOP-Oriented Testing Approach." 11(3): 199. [doi.org/10.3390/toxics11030199](https://doi.org/10.3390/toxics11030199)
30. Belosi, F., et al. (2023). "Critical aspects in occupational exposure assessment with different aerosol metrics in an industrial spray coating process." *NanoImpact*: 100459. <https://doi.org/10.1016/j.impact.2023.100459>
31. Dumit, V. I., et al. (2023). "From principles to reality. FAIR implementation in the nanosafety community." *Nano Today* 51: 101923.
32. Furxhi, I., et al. (2023). "A data reusability assessment in the nanosafety domain based on the NSDRA framework followed by an exploratory quantitative structure activity relationships (QSAR) modeling targeting cellular viability." *NanoImpact* 31: 100475.
33. Exner, T. E., et al. (2023). "Metadata stewardship in nanosafety research: learning from the past, preparing for an "on-the-fly" FAIR future." 11.
34. Furxhi, I., et al. (2023) "Artificial augmented dataset for the enhancement of nano-QSARs models. A methodology based on topological projections." *Nanotoxicology*: 1-16.
35. Goldbeck, G., et al., (2023). *The Translator in Knowledge Management for Innovation – A Semantic Vocation of Value to Industry*. Zenodo. <https://doi.org/10.5281/zenodo.10057816>