11TH NANO TRAINING SCHOOL

Università Ca'Foscari Venezia

NANOSAFETY TRAINING SCHOOL: TOWARDS SAFE AND SUSTAINABLE BY DESIGN ADVANCED (NANO)MATERIALS

#venicenano22

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Organizing projects

SUNSHINE
Safe and Sustainable Design for Advanced Materials

ASINA

CHARISMA

DIAGONAL

HARMLESS

nanoinformaTIX

SABYDOMA

SAbyNA

SbD4Nano
SAFE BY DESIGN FOR NANO

Join us!

Contributing projects

CENT

Gov4Nano
meeting the needs of nanotechnology

NanoCommons
Nano-Knowledge Community

NANORIGO

NanoSafety Cluster

NanoSolveIT

RISK GONE

General Information

Location

Auditorium Santa Margherita
Address: Dorsoduro 3689 - 30123 (VE) - Ground floor
Capacity: 237 seats
Accessibility: Fully accessible
Map

Wi-Fi

Unive_WiFi (login page: http://192.168.152.1:3990/prelogin)
Username: -
Password: -

COVID rules

For access to the Auditorium and other Ca'Foscari venues FFP2 masks are mandatory and the masks must be worn inside.

General COVID regulations in Italy:
https://www.italia.it/en/covid19

About the School

The School aims to transfer state-of-the-art knowledge on a variety of topics from key experts to the new generation of professionals working in the areas of safety and sustainability of advanced (nano)materials. To this end, the School will deliver keynote lectures and will engage the participants in interprofessional training by means of roleplay and hands-on training exercises. The programme will balance experimental and modeling approaches

▸ Click here to get more insights about the school

#venicenano22

Image: Campanile and church Santa Margherita in Campo Santa Margherita in Venice. Didier Descouens @WikimediaCommons

V = virtual attendance, virtual event

Agenda

Time is CET	Sunday, 15th May	Monday, 16h May	Tuesday, 17th May	Wednesday, 18th May	Thursday, 19th May	Friday, 20th May
08:30–09:00		Arrival	Arrival	Arrival	Arrival	Arrival
09:00–10:30		**What they are: physical-chemical identity - Intrinsic properties** (Andrea Brunelli, Elena Badetti | Miguel Bañares)	**Where they go: human bio-distribution and exposure** (Lang Tran)	**Grouping** (Andrea Haase *V*, Mario Pink, HARMLESS project | Vicki Stone)	**Introduction to sustainability life cycle assessment (SLCA)** and **Environmental sustainability assessment: Hands-on session on LCA** (Lisa Pizzol , Alex Zabeo)	**Risk Governance** ***Interactive session: Role-play*** (Martin Himly, Susanne Resch | Norbert Hofstaetter | Phil Sayre | Damjana Drobne *V* | Sabine Hofer | Jose Vicente Tarazona)
10:30–11:00		Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
11:00–12:30		**What they are: physical-chemical identity – Extrinsic "*system dependent*" properties** (Anna Costa | Iseult Lynch *V*)	**What they do: human toxicity & human health** (Otmar Schmid | Sabine Hofer / Norbert Hofstaetter)	**DSS on risk assessment and management** (Alex Zabeo)	**Hands-on session on Social LCA / LCC analysis** (Sonia Martel Martin, Jesús Ibañez)	**Risk Governance** ***Interactive session: Role-play*** (see above)
12:30–14:00		Lunch	Lunch	Lunch	Lunch	**Closing remarks**
14:00–15:00	**Registration**	**Where they go: lifecycle release** (Bernd Nowack | Camilla Delpivo, SAbyNA project)	**Workplace exposure campaigns and risk mitigation strategies when dealing with advanced materials** (Carlos Fito *V*)	**Data FAIRness** *V* (Martine Bakker | Iseult Lynch *V*)	**13:30 - 14:00 NSC ECRs initiative presentation** (Ilaria Zanoni | Stefania Melandri | David Burrueco Subirà) **14:00–15:00 Ways to promote your research** (Martin Himly | Susanne Resch | Cathrin Cailliau)	
15:00–15:30			Coffee break	Coffee break	Coffee break	
15:30–17:00	**15:30 Welcome** (Danail Hristozov | Stefania Melandri) **15:45 NanoSafety Cluster perspective** (Éva Valsami-Jones *V*) **16:15 Safe and sustainable by design chemicals and materials – framework for the definition of SSbD criteria** (Juan Riego Sintes)	15:30–15:45 Coffee break **15:45–17:15 Where they go: environmental fate and exposure** *V* (Haralambos Sarimveis, Periklis Tsiros, Pantelis Karatzas, Philip Doganis – NanoCommons & NanoSolveIT projects) Instructions	**15:30–17:30 Results for hands-on sessions: modeling** (Georgia Tsiliki | Vladimir Lobaskin, Ian Rouse | Benjamí Martorell Masipi)	**Hands-on session on data quality assessment** (Camilla Delpivo, SAbyNA project | Gianpietro Basei | Martin Himly)	**Frameworks and tools for Safe by Design of nanomaterials** (Andrea Porcari | Beatrice Salieri | Gustavo Gonzalez, Gov4Nano project)	
17:00–18:30	**17:00 Industrial Perspective** (Wibke Lölsberg) **17:45 Q&A session**	**17:15–18:30 Closing: Historical perspective of Nano Safety** (Georgios Katalagarianakis)	**17:30–19:30 Guided walking tour in Venice**	**Risk Assessment and Management** *V* (Neil Hunt *V*)	**A Different View: U.S. Regulatory Assessments for the use of Carbon Nanotubes in Batteries** (Phil Sayre) **17:30–19:30 Free time** **19:30 Social dinner**	
	18:30 Welcome cocktail					

V = virtual attendance, virtual event

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Day 1: Sunday, May 15

14:00–15:30 Registration ✍

Please register at the welcome desk at the Auditorium Santa Margherita.

15:30–15:45 Welcome

Prof. Antonio Marcomini (Vice Rector University Ca' Foscari)
Welcome on behalf of University Ca' Foscari of Venice.

Danail Hristozov (Greendecision Srl) | Stefania Melandri (Warrant Hub S.p.A.)
Introduction to the Training School's background and program.

- **Prof. Antonio Marcomini** Antonio Marcomini is Vice Rector and full professor of Environmental Chemistry at the University Ca' Foscari of Venice. Graduated from the University of Padua, he was post-doctoral fellow at the University of Toronto, Lash Miller Chemical Institute, Canada (1982–83), and then research associate at the Polytechnic of Zurich, ETH-EAWAG, Switzerland (1985–86). Coordinator/partner of several international and national research projects (see CV), he is (co-)author of over 300 papers published in international peer reviewed journals, editor and co-author of two books. According to SCOPUS and Google Scholar, his H-index over the 1986–2020 period are 58 and 67, respectively. Over the last six years, he has been director of the Department of Environmental Science, Informatics and Statistics, and a member of the academic Senatus.
- **Dr. Danail Hristozov** is the Head of Research at Greendecision Srl, a spin-off company of University Ca' Foscari of Venice in Italy and a founder of the East European Research and Innovation Enterprise (EMERGE) in Bulgaria. There he has performed integrative research across the areas of risk assessment and management of bio and nanomaterials used in consumer products and medicine as part of the large-scale EU H2020 projects GRACIOUS, BIORIMA, REFINE, caLIBRAte, Gov4Nano, NanoInformaTIX and SAFE-N-MEDTECH. He is also the Coordinator of the large H2020 research project SUNSHINE, which focuses on Safe and Sustainable by Design of multi-component advanced nanomaterials. Danail Hristozov has been a senior research scientist at the Department of Environmental Sciences, Informatics and Statistics of the University of Venice, where he acted as the Principal Investigator of the large EU FP7 project SUN. He also worked as a research expert in the private sector companies Venice Research Consortium and Veneto Nanotech. In his early years as a researcher, Danail was employed at the Chair of Industrial Sustainability of the Brandenburg University of Technology in Germany.
- **Stefania Melandri** was born in 1990 in Bologna (Italy) and has a BA in Foreign Languages and Literatures and MA in European Affairs (University of Bologna). Since 2018, she has been working as Operations Specialist at the European Funding Development of Warrant Hub S.p.A. She is currently involved in several H2020 funded projects in the field of Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing. For example, in the field of advanced materials for cultural heritage (APACHE and INNOVACONCRETE) and in the field of safe use of nanomaterials for human health (ASINA, BIORIMA, NanoInformaTIX and SUNSHINE). She formerly worked as Program Development (I) at the United Nations Human Settlements Program agency (UN-HABITAT), New York headquarter, with a focus on the implementation of the SDG 11 "Sustainable Cities and Communities". Her work and volunteer experiences have led her to travel frequently, for example at the EDUU project that saw Stefania as a panelist at the 1st International Conference on The Enhancement of Archaeological Heritage (Iraq).

15:45–16:15 NanoSafety Cluster perspective

Presentation available HERE

Éva Valsami-Jones (University of Birmingham)
This session will give an overview of the work, views and goals of the NanoSafety Cluster.

- **Prof. Eugenia (Éva) Valsami-Jones (PhD)** is a Professor of Environmental Nanoscience at the University of Birmingham. She holds a degree in Earth Sciences from the University of Athens and a PhD in Geochemistry from the University of Newcastle-upon-Tyne. Her research focuses on nanoscale processes in the environment and within biota. She has pioneered the development of traceable stable-isotope labeled nanomaterials and is currently working on the development of analytical solutions for the improvement in speed and quality of identification of nanoscale objects in complex matrices. She was the Mineralogical Society's Distinguished Lecturer for 2015 and the Distinguished Guest Lecturer and Medalist of the Royal Society of Chemistry for 2015. She is currently a Royal Society Wolfson Fellow. She is a member of the coordination team of the European Commission's Nanosafety Cluster and has participated in several EU funded projects and coordinated projects ACEnano, NanoMILE, ModNanoTox and NanoReTox.

16:15–17:00 Safe and sustainable by design chemicals and materials – framework for the definition of SSbD criteria

Presentation available HERE

Juan Riego Sintes (Joint Research Centre (JRC))
The speaker will present the Draft Framework for the definition of criteria and evaluation procedure for chemicals and materials produced by JRC on behalf of the European Commission.

- **Juan Riego Sintes (PhD)** leads the NanoGovernance and Regulatory Methods team in the European Commission's Joint Research Centre (JRC). He coordinates chemicals test methods and guidelines, chairs the EU National Coordinators and represents the Commission in the OECD Test Guidelines Programme. He is a member of the OECD Working Party of Manufactured Nanomaterials, chairing the steering group on testing and assessment. He has authored approximately seventy publications and is participating in several research projects (e.g. MARINA, NANoREG, Gov4Nano, SUNSHINE). Before entering in the

ECB the regulatory area, he worked on organic synthesis with hydrides, heterogeneous catalysis with supported reagents, supramolecular chemistry, molecular recognition, and environmental chemistry.

17:00–17:45 Industrial Perspective

Presentation available HERE

Wibke Lölsberg (BASF)
Presentation of an established industry methodology for sustainability scoring of chemical products is the Portfolio Sustainability Assessment (PSA) hosted be the World Business Council for Sustainable Developments (WBCSD), what is required for such a method to be practically useful and how it can be used to foster innovation towards Safe and Sustainable by Design Chemicals.

🔸 **Dr. Wibke Lölsberg** studied Chemistry at the University of Cologne in Germany, Bristol Universityin UK and Harvard in Cambridge, USA. In 2012 she earned her PhD in Organic Chemistry from the University of Cologne and joined BASF Polyurethanes GmbH as a Laboratory Team Leader in Aerogel research. In 2017 she built up the global business development and marketing of silica aerogel products at BASF SE. Today she is managing projects in the Corporate Sustainability Strategy at BASF around Chemical Strategy for Sustainability and Portfolio Steering.

17:45–18:30 Q&A Session

18:30 Welcome Cocktail 🍸🍹

If you are joining us for a cocktail, please meet at Bakarò – Osteria & Co., in Campo Santa Margherita, just in front of the Auditorium, a 1 minute walk.

Day 2: Monday, May 16

9:00–10:30 What they are: physical-chemical identity - Intrinsic properties

Presentation I available HERE
Presentation II available HERE

Andrea Brunelli, Elena Badetti (University Ca' Foscari) | Miguel Bañares (Instituto de Catálisis y Petroleoquímica, CSIC)
Andrea Brunelli and Elena Badetti's part will focus on physicochemical characterization of multicomponent and engineered nanomaterials (MCNMs and ENMs) under different experimental conditions, and their interaction with some components of environmental and biological matrices.
Miguel Bañares will present the following topics:

- what nanomaterials structurally look like (i.e. oxides, some metal, e.g., silver)
- what their surface is like
- how to characterize with XRD, XPS, Raman, infrared
- how reactive is the NM surface (reactivity, number and nature of surface reactive sites)
- how multicomponent NM may have new properties that may not be the linear combination of the properties of components
- some characterization of mixed NM (mixed oxides)
- some reactivity changes of mixed oxides

🔸 **Andrea Brunelli (PhD)** is a senior research scientist, working as "Tecnologo" at the Department of Environmental Sciences, Informatics and Statistics (DAIS) at University Ca' Foscari of Venice. His environmental sciences studies (from bachelor to Ph.D.) covered a wide range of research topics, such as environmental chemistry, colloidal science, statistics, ecotoxicology, analytical chemistry, biochemistry, physics, mathematical methods for environmental sciences, ecology, dynamic models and earth sciences. His core qualifications are: i) fate and behavior of engineered nanomaterials in complex matrices (i.e. environment, biological media); ii) material characterization; iii) environmental data analysis by statistical tools.
🔸 **Dr. Elena Badetti** received a PhD in chemistry at Universidad Autónoma de Barcelona (Spain) in 2008. From 2008 to 2010 she had a postdoctoral research contract at ICMAB-CSIC (Barcelona), and from 2012 to 2016 at the University of Padova (Italy). She acquired experience in organic synthesis, catalysis, coordination and supramolecular chemistry as well as in synthesis, functionalization and characterization of nanomaterials. Since 2016 she is a senior research scientist at the Department of Environmental Sciences, Informatics and Statistics at University Ca' Foscari of Venice, and her research is mainly focused on the functionalization and characterization of engineered nanomaterials (ENMs).
🔸 **Prof. Miguel A. Bañares** is a Full Research Professor at the Institute for Catalysis and Petroleum Chemistry, CSIC. He is also associate editor of Catalysis Today (Elsevier, Impact Factor 5.825) and co-editor of Springer Handbook of Advanced Catalyst Characterization. He obtained his PhD in 1992 (University of Salamanca). He was chairman of the Management Committee of COST Action D36 (ESF), 2006–2011 and is Vice-Chairman, Management Committee of COST Action TD1404 MODENA (ESF). He obtained a Doctor Honoris Causa from Université de Caen Normandie, France in 2017. He was deputy vice president of the Spanish National Research Council, CSIC in 2014–2015. He was awarded a "chaire d'excellence" at ENSICaen-CNRS (FEDER) France, 2013–2014 and distinguished "Otto Mønsted Visiting Professor" award at the Denmark Technical University, DTU, in 2014. He was Senior Visiting Research Fellow at the Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong, in 2018.

10:30–11:00 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

11:00–12:30 What they are: physical-chemical identity – Extrinsic *"system dependent"* properties

Presentation I available HERE
Presentation II available HERE

Anna Costa (CNR-ISTEC Istituto di Scienza e Tecnologia dei Materiali Ceramici) | Iseult Lynch *V* (University of Birmingham)
Our contribution, as indicated in the title, is focused on extrinsic properties, properties that characterize nanomaterials once they enter in environmental and biological simulant fluids. The contribution will focus on the description of the following phenomena, the characterization methods and techniques behind and some examples, showing the importance of such properties to predict the behavior of NMs in real exposure conditions:

- Dissolution.
- Agglomeration/ Aggregation/Sedimentation.
- Surface charge (Zeta Potential) and chemistry (Bio-corona).

🔸 **Anna Costa** is leading the Environmental Nanotechnology and Nano-Safety group of CNR-ISTEC, with an activity mainly addressed to the synthesis and engineering of nano and micro powders; wet colloidal characterization; nanostructured surfaces and composites for application in (photo) catalysis and water depuration treatments. She has published over 90 peer-reviewed publications and is the topic editor of the journal Nanomaterials. She has coordinated the EU-FP7 project SANOWORK and is coordinating the HORIZON 2020 project ASINA, focusing on the development of Safe by Design practices for promoting the sustainable integration of nano-enabled products.
🔸 **Prof. Iseult Lynch** is Professor of Environmental Nanosciences – Theme lead for Environmental Sciences. Iseult Lynch is an Associate Editor for Environmental Science: Nano, and Deputy director for the Facility for Environmental Nanomaterials Analysis and Characterisation (FENAC) at the University of Birmingham. Her research focuses on the environmental interactions of nanoparticles and nanostructured surfaces with biological entities from macromolecules to organisms. She has a very broad overview of all aspects of nanomaterials safety assessment and the data requirements, having served as Chair of the

EU Nanosafety Cluster Working Group (NSC WG) on databases for two years (and as co-Chair of the Hazed WG prior to that), as well as being theme editor for the Materials and classification section of the NSC Vision2020 research roadmap. Prior to the University of Birmingham, she was Strategic Research Manager at the Centre for BioNano Interactions in University College Dublin, where she was instrumental in the development and implementation of numerous large EU-funded projects. Iseult is part of the Birmingham Plastics Network, an interdisciplinary team of more than 40 academics working together to shape the fate and sustainable future of plastics. This unique team brings together chemists, environmental scientists, philosophers, linguists, economists, and experts in many other fields, to holistically address the global plastics problem.

12:30–14:00 Lunch 🍝

Bakarò – Osteria & Co., in Campo Santa Margherita

14:00–15:30 Where they go: lifecycle release

Presentation I available HERE
Presentation II available HERE

Bernd Nowack (Empa) | Camilla Delpivo, SAbyNA project (LEITAT Technological Centre)
Bernd Nowack will talk about the current state of the modeling of the release of nanomaterials to the environment. Camilla Delpivo will present the selection of relevant laboratory experiments to simulate release of (nano)materials from nano-enabled products, explaining how the released (nano)materials can be characterized, and how data and information obtained can be used for SbD purposes, showing some examples from the SAbyNA project.

🔸 **Prof. Dr. Bernd Nowack** holds an MSc. (1992) and a PhD (1995) in environmental sciences from ETH Zürich. Since 2007 he has been leading the "Environmental Risk Assessment and Management" group at Empa, the Swiss Federal Laboratories for Materials Science and Technology. He also is an adjunct professor in the Department of Environmental Systems Science at ETH Zürich. His research deals with the environmental risks of engineered nanomaterials, nanobiomaterials, plastics and nano/microplastics, focusing on material flow modeling and environmental risk assessment; experimental studies about release of materials from products and development of methods for safe and sustainable by design (SSbD).
🔸 **Camilla Delpivo (PhD)** is currently principal researcher in the (nano)material safety group of the Human & Environmental Health & Safety Area of LEITAT Technological Centre. She is PhD in Chemistry (2015, University of Bologna) and her expertise includes characterization of (nano)materials in relevant environmental and biological media/matrices, assessment of (nano)materials release and emission, human & environmental risk assessment, and application of Safer by Design (SbD) approaches to NM and nano-enabled products. She participated to several EU Projects focusing on nanomaterials characterization for regulation purposes (NANoREG), nanomaterials risk assessment (GUIDEnano, caLIBRAte) and risk governance (Gov4Nano), grouping (Gracious) and SbD (SANOWORK, SAbyNA).

15:30–15:45 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

15:45–17:15 Where they go: environmental fate and exposure

Presentation available HERE

Haralambos Sarimveis, Periklis Tsiros, Pantelis Karatzas, Philip Doganis (National Technical University of Athens (NTUA))
During the session participants will be introduced to methodologies, used for studying and simulating the environmental fate of nanomaterials (NMs), after they are released into the environment. The focus of the session will be on biokinetics modeling, which is a powerful modeling approach for understanding, predicting and simulating the biotic fate of NMs, i.e. the processes of biotransformation and accumulation of NMs in aquatic species. We will outline key concepts in biokinetics modeling that will be further illustrated and explained through short demonstrations of web applications that have been developed in the context of the NanoCommons and NanoSolveIT projects. The final part of the session will be a hands-on session, where participants will develop a biokinetics model for predicting the biodistribution of TiO2 in D.magna, and they will deploy it on the Jaqpot cloud platform as a web service.
The hands-on session instructions can be found here.

🔸 **Prof. Haralambos Sarimveis** received a Diploma in Chemical Engineering from the National Technical University of Athens (NTUA) in 1990 and the M.Sc. and Ph.D. degrees in Chemical Engineering from Texas A&M University, in 1992 and 1995 respectively, in the areas of computational intelligence and process control. He is now a full Professor at NTUA and the director of the Unit of Process Control and Informatics. He is also affiliated with the Pharma-Informatics Unit at Athena Research Center. His research interests are in mathematical modeling and optimization, control theory and applications, computational intelligence and machine learning, cheminformatics and nanoinformatics. His published work includes more than 120 publications in peer reviewed international journals, and over 120 publications and talks in conferences and workshops. His research work has received over 4400 citations (excluding self-citations), h-index: 39 (Source: Scopus).
🔸 **Periklis Tsiros** received his diploma in Chemical Engineering from NTUA in 2017, and then obtained his MSc in Data Science at the department of Informatics in the Athens University of Economics and Business (AUEB). He is currently pursuing a Ph.D. on stochastic modeling and control of systems in biosciences at NTUA, where he is also employed as a junior researcher. His main professional interests consist of modeling of biological systems, Machine Learning and Physiologically Based Pharmacokinetic modeling.
🔸 **Pantelis Karatzas** obtained the Diploma in Applied Mathematical and Physical Sciences from NTUA, Greece in 2012 and an MSc Degree in Applied Mathematics and statistics from NTUA. He has worked as a software engineer in the private sector having duties in big projects mainly for

the Greek and trans-European public sector. Now he is a Ph.D. candidate at NTUA and he is involved in many European projects, developing web services and applications and predictive mathematical models. His research interests are machine learning, image analysis, statistics, computer science and big data technologies and frameworks.

- **Dr. Philip Doganis** received his degree in Chemical Engineering from NTUA in 2002 and afterwards pursued a Ph.D. at the School of Chemical Engineering in NTUA, which he received in 2007. Since 2007 he is a Research Associate at NTUA and is currently a Senior Researcher. His main research interests are mathematical modeling and optimization, cheminformatics and nanoinformatics and machine learning. He has worked on the development of nanomaterial descriptor calculation and modeling services, incorporating modeling and web service terms in project ontologies, developing tutorials and organizing training events, hackathons and workshops.

17:15–18:30 Closing: Historical perspective of Nano Safety

Georgios Katalagarianakis (formerly European Commission)

Nanotechnology and more specifically the use of nanomaterials involves a growing number of industrial applications with a large actual economic impact. An increasing number of engineered nanomaterials are entering the global market via consumer products ranging from healthcare and leisure to electronics, cosmetics, energy, agriculture, food, and transport.

The established regulatory frameworks dealing with the risk for the consumers, workers and the environment are not readily available for nanomaterials, simply because of their upcoming large variety. The need to create a nanosafety research community, with the primary objective of ensuring that society is able to use nanomaterials safely and with confidence for years to come became obvious soon. This effort was initiated in 2005 and was intensified in 2009 with the establishment of the European Nanosafety Cluster. Its prime objective is to create the European nanosafety research community, bringing together European Union's, member states' and industry's resources. The cluster quickly defined their strategy and roadmap for an integrated approach from risk analysis to risk management, based on continuity, consistency between the research and the regulatory field and across sectors, and international cooperation.

In the USA, the National Nanotechnology Initiative coordinates government departments and independent agencies working together toward creating a framework for nanosafety. Cooperation between EU and USA institutes is a great success with the establishment of the Research Communities. The international regulatory science efforts are coordinated by the Organization for Economic Co-operation and Development (OECD) at the level of the Working Party on Manufactured Nanomaterials (WPMN). Standardization bodies, ISO and CEN, devote large efforts for progress in this domain.

Although these first steps are well established, it should be noted that the always increasing number of materials entering the market brings the adequacy of current approaches to its limits. Traditional Risk Assessment is no longer functional and the road should be prepared to establish Safe-by-Design, in the same manner achieved for other risks.

Acceptance and subsequent wider use of the new methods is the next challenge. To support the Safe-by-Design approach the research community should open to the wider field of Risk Governance enabling science-based decision making. This essentially means preparing the scientific tools for Information (ontologies, databases, models), Communication (networking, standards), Strategy (planning, resources, roadmaps, feedback), Progress to goals(reviewing, societal aspects). Scientific research is needed for continuous definition and adaptation of overarching goals concerning human and environmental safety. Such goals must be firmly established for Risk Governance to effectively prove its value in managing risks.

Where are we after an almost two-decade effort? It can be stated with confidence that the paradigm has been established in record times. It can be used for the wider and more challenging field of chemicals' safety, and next perhaps for artificial intelligence safety.

- **Georgios Katalagarianakis (PhD)** graduated as a mining and metallurgy engineer from the National Technical University of Athens in 1976. He obtained a diploma in mechanical engineering from the University of Thessaloniki in 1989 and a PhD degree from the Imperial College of Science, Technology and Medicine in 1998. He worked in the underground mining industry and the mineral resources authority of Greece before joining the European Commission as administrator in 1989. He has been responsible for European research in the fields of mining and metallurgy, recycling, construction and maintenance of buildings and civil infrastructure, tunneling, industrial safety and ergonomics, as well as for research in the area of nanotechnology safety. He retired in 2019.

Day 3: Tuesday, May 17

09:00–10:30 Where they go:human bio-distribution and exposure

Presentation available HERE

Lang Tran (Institute of Occupational Medicine, Edinburgh)
In this presentation, Lang Tran will provide the data illustrating the biodistribution of nanoparticles and discuss the potential dose-response in different organs, beyond the portal of entry. Most importantly, how the evidence in nanotoxicology can inform us on the long-COVID symptoms.

🔸 **Prof. Lang Tran** has worked in Nanotoxicology. He currently is the Principal Computational Toxicologist at the Institute of Occupational Medicine, Edinburgh (UK). Lang Tran has coordinated several EU projects, recently the H2020 BIORIMA project. His research is in the biodistribution and biokinetics of inhaled/ingested nanoparticles.

10:30–11:00 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

11:00–12:30 What they do: human toxicity & human health

Presentation I available HERE
Presentation II available HERE

Otmar Schmid (Missouri University of Science and Technology, Comprehensive Pneumology Center and Helmholtz Center Munich) | Sabine Hofer, Norbert Hofstätter (Paris Lodron University of Salzburg)
Sabine Hofer and Norbert Hofstätter's will discuss the particularities of SARS-CoV-2-laden respiratory aerosol deposition (generated from breathing and speaking), explaining the interplay of physio-chemical properties, ventilatory pattern and human lung morphometry (in adults and children) and the occurrence of deposition hot spots in the human lungs which coincide with preferred sites of localized pulmonary inflammation in COVID-19 patients with lung involvement.

🔸 **Dr. Otmar Schmid**, Ph.D. is Adjunction Assistant Professor at the Missouri University of Science and Technology (USA) and head of the Pulmonary Aerosol Delivery Group at the Comprehensive Pneumology Center and Helmholtz Center Munich (Germany). He is an aerosol physicist by training with 15 years of experience in the field of inhalation toxicology and drug testing. His current research interests range from health risks/efficacy of engineered nanomaterials/nanodrugs to the development of advanced technologies for dosimetry and targeted delivery of inhaled nanoparticles/-drugs. In his part of the Nano School, he will emphasize the pivotal role of internal (tissue-delivered) dose for in vitro and in vivo hazard assessment of inhaled nanomaterials and its translation into human health outcome. He will also outline tools for determination of internal dose.

🔸 🔸 **Sabine Hofer & Norbert Hofstätter** hold positions as research associates at Paris Lodron University of Salzburg (PLUS), Bio-Nano Group focusing on respiratory health, nanomaterial-bio interactions and human immunity, Division Allergy & Immunology. With an educational background of computer science and medical biology, their current research comprises in silico modeling of aerosol deposition in the human lung. This includes the investigation of inhalable engineered nanomaterial in occupational settings, but also natural environmental stimuli, such as inoculation of human lung epithelia by pathogenic virion-laden respiratory aerosols. In silico dose bridging, from exposure to a tissue delivered dose, crucial for nanomaterial risk assessment as well as for the translation of experimental research findings into a potential clinical context, complements their current activity.

12:30–14:00 Lunch 🍝

Bakarò – Osteria & Co., in Campo Santa Margherita

14:00–15:00 Workplace exposure campaigns and risk mitigation strategies when dealing with advanced materials *V*

Presentation available HERE

Carlos Fito *V* (ITENE)
Carlos Fito will speak about procedures to measure ENMs in workplaces, as well information on the risk mitigation strategies when dealing with ENMs, including SbD strategies concerning exposure.

🔸 **Carlos Fito** has an MSc Degree in Biology and a master's degree in environmental health. He is ITENE's head of safety, health and environmental monitoring technologies department and senior consultant in chemical risk assessment, risk mitigation and occupational exposure. Since 2008, Carlos Fito has been involved in the management of the Nanosafety research group of ITENE, working on a variety of Risk Assessment related projects, including the coordination of more than 10 regional, national and international projects, highlighting the H2020 project SbD4Nano, the FP7 project NanoMICEX, the LIFE projects NanoRISK, REACHnano and NanoMONITOR, and the SUDOE NanoDESK. Beside the above, Carlos Fito is currently leading a number of activities under the EU projects SUNSHINE and SUSSAN as work package leader, as well as strategic actions on exposure assessment under national initiative.

15:00–15:30 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

15:30–17:30 Results for hands-on sessions: modeling

Presentation I available HERE
Presentation II available HERE
Presentation III available HERE

Georgia Tsiliki | Vladimir Lobaskin, Ian Rouse |
| Benjamí Martorell Masipi

Vladimir Lobaskin and Ian Rouse will discuss and demonstrate the use of the UnitedAtom methodology and computational tool for the calculation of protein-nanoparticle adsorption affinities (bionano interactions). In particular, they demonstrate its use as part of a pipeline for the prediction of the composition of the nanoparticle protein corona using a recently developed Kinetic Monte Carlo approach for complex systems consisting of multiple proteins. They will discuss the capabilities of the UnitedAtom tool developed at University College Dublinand demonstrate several typical use examples.
Benjamí Martorell will present the basis and tools on the topic of materials modeling at the electronic and molecular level, on the framework of Density Functional Theory and beyond.

- **Georgia Tsiliki (PhD)** is the COO and a co-founder of Purposeful, a biotech company specializing on drug repositioning for rare diseases. Her research interests lie in the area of biomedical statistical analysis, bioinformatics and chemoinformatics, ranging from theory to design and implementation. Georgia received her PhD in Statistics from Imperial College London. She has extensive experience on integrating -omics data and chemo-related data for a better understanding of the mechanisms of action for compounds, drugs and nanomaterials. She has worked as a researcher for more than ten years and has collaborated actively with biology and medicine specialists.
- **Prof. Vladimir Lobaskin** is an Associate Professor at the School of Physics, University College Dublin. His research interests lie in the theory and simulation of nanostructured biosystems, bionano interactions, colloidal dynamics, mechanics of biomolecules, dynamics of active particles, collective behavior, and the development of multiscale simulation techniques.
- **Ian Rouse (PhD)** is a postdoctoral researcher at the School of Physics, University College Dublin. His scientific background is in multiscale modeling of nano-bio interactions employing both physics-based and machine-learning methods, development of statistical and computational models for non-equilibrium systems, design and modeling of microelectronic devices for the manipulation of ultracold atomic ensembles.
- **Benjamí Martorell (PhD)** is the manager of the Doctoral School in the URV and assistant lecturer in the Chemical Engineering Department. He received his PhD in Theoretical and Computational Chemistry for the study of organic molecules on metal surfaces in 2008. Afterwards, he was a postdoctoral fellow in the Technical University of Munich and University College London, where he continued his research in computational chemistry and materials science. In the period 2014–2017 he worked in a British private company developing new types of energy-related storage materials.

17:30 Social program

Guided walking tour in Venice. The pick up point is the Auditorium Santa Margherita, at 17:30.

Day 4: Wednesday, May 18

09:00–10:30 Grouping

Presentation I available HERE
Presentation II available HERE

Andrea Haase *V* & Mario Pink, HARMLESS project (German Federal Institute for Risk Assessment (BfR)) | Vicki Stone (Heriot Watt University)
Mario Pink and Andrea Haase will illustrate grouping in the regulatory context, exemplified by a current case study and a short exercise with selected data. Vicki Stone will provide an overview of the EU project GRACIOUS which developed a Framework to support the grouping and read-across of nanomaterials and its expansion into OECD guidance and the project SUNSHINE.

- **PD Dr. Andrea Haase** studied biochemistry at the University of Tübingen and obtained a PhD from the University of Heidelberg. In addition she finished a postgraduate study in Toxicology at the University of Leipzig and completed her habilitation in pharmacology and toxicology at the Freie Universität Berlin. Since 2008 she has been working at the German Federal Institute for Risk Assessment (BfR) in Berlin, where she is the head of the unit "Fibre and Nanoparticle Toxicology". Since 2008, Andrea Haase's work has been focused on nanomaterials. She is involved in addressing the integration of nanomaterials in different regulatory frameworks in the EU but also conducts research in the context of nanosafety. Thus, she has published more than 80 scientific publications and is involved in several large national and European projects (e.g. GRACIOUS, NanoInformTIX, HARMLESS).
- **Dr. Mario Pink** studied Chemistry at the University of Duisburg-Essen focusing on biological and medical chemistry and obtained his PhD in Duisburg-Essen in 2013. He worked as a postdoctoral researcher for more than 5 years at the University of Erlangen-Nuremberg, in the field of nanosafety, where he also worked in the excellence cluster for engineering of advanced materials. During his years as postdoctoral researcher, he embarked on further training in toxicology at the University of Leipzig, which he completed in 2018. Since 2019, he has been part of the BfR's "Fibre and Nanotoxicology" unit, where he works, among other things, on assessing the health risks of fibers and nanomaterials under European chemicals legislation.
- **Prof. Vicki Stone** is Professor of Toxicology and Director of the Institute of Biological Chemistry, Biophysics and Bioengineering at Heriot-Watt University. She is Honorary Principal Scientist at the Institute of Occupational Medicine and a member of the UK REACH Independent Scientific Expert Pool (RISEP). Vicki held the Royal Society of Chemistry Toxicology Award (2015-16), was Editor-in-chief of Nanotoxicology (2006-2011) and was recognised (2015-2019) by Clarivate Analytics as one of the top 1% of all researchers in Pharmacology and Toxicology.

10:30–11:00 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

11:00–12:30 Decision Support Systems (DSS) on risk assessment and management Part I

Presentation available HERE

Alex Zabeo (GreenDecision Srl)
After a brief introduction of the field of decision analysis and decision support systems, the Sunds DSS will be presented and a short exercise will be performed with the students by applying the different assessments provided in the tool.

- **Alex Zabeo (PhD)** is a Senior Researcher with a Ph.D. in Informatics. He has been guiding the Decision Support area of several European and National projects. He is a shareholder and the CTO of GreenDecision Srl. His research activities focus on Decision analysis, Probabilistic Risk Assessment and Life Cycle Assessment (LCA). He has proven expertise in project and development of standard and Geographical Decision Support Systems (DSS) and in Multi-Criteria Decision Analysis (MCDA) – Fuzzy Logic (FL) – Value of Information (VoI) – Artificial Intelligence (AI) based assessment methodologies as well as in design and realization of studies and software related to Life Cycle Assessment (LCA) and management of complex sensors' networks and Internet of Things (IoT).

12:30–14:00 Lunch 🍝

Bakarò – Osteria & Co., in Campo Santa Margherita

14:00–15:00 Data FAIRness

Presentation available HERE

Martine Bakker (National Institute of Public Health and the Environment (RIVM)) | Iseult Lynch (University of Birmingham)
This lecture will present the principles of FAIR (Findable, Accessible, Interoperable and Reusable) data and how these principles are applied in the nanosafety community. Martine Bakker will discuss the WHY, the WHAT and the HOW of FAIR nanosafety data, using examples from practice.

- **Dr. Martine Bakker** is a project manager at the National Institute of Public Health and the Environment (RIVM) in the Netherlands. She has a PhD in chemistry and has worked on risk assessment of chemicals and materials from food, consumer products and the environment for 20 years. Her projects all deal with modeling exposure and risks of substances and materials, including the data required for these calculations. Since 2015 she has been involved in the management of data on the safety of nanomaterials.
- **Iseult Lynch** see session on Monday, 11:00–12:30.

15:00–15:30 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

15:30–17:00 Hands-on session on data quality assessment

Presentation I available HERE
Presentation II available HERE

V = virtual attendance, virtual event

Presentation III available HERE

Camilla Delpivo (LEITAT Technological Centre) | Martin Himly, (Paris Lodron University of Salzburg) | Gianpietro Basei (GreenDecision Srl)
Camilla Delpivo will show how the quality of different types of data can be assessed depending on the specific use of the data, with examples from the projects SAbyNA, Gracious, and Gov4Nano. Martin Himly will provide insight on how tools available from the NanoCommons infrastructure can assist this process and show how the Knowledge Base established within the NanoCommons infrastructure initiative gives free access to quality-assured, annotated data and comprehensive metadata supporting FAIRness. Gianpietro Basei will present an automatic methodology for data quality and completeness assessment of (eco)toxicological data developed in the GRACIOUS and Gov4Nano projects, based on the (meta)data inserted in the NanoReg data reporting templates. Moreover, he will demonstrate a semi-automatic tool implementing the methodology.

- **Camilla Delpivo** See 14:00 session on day 3, Tuesday.
- **Prof. Martin Himly** is Associate Professor at Paris Lodron University of Salzburg (PLUS) and Principle Investigator of the Bio-Nano Group focusing on respiratory health, nano-bio interactions with impact on human immunity, and nanomedicine. Prof. Himly has expertise in biochemistry and immunology. He has been involved in FP7 and H2020 projects, NanoTOES, NanoValid, NanoEIS, HUMUNITY, PANDORA, EC4SafeNano, NanoRIGO, and is WP leader for training in NanoCommons establishing infrastructure for nanosciences and beyond. He is Chair of the Working Group A on Education, Training, Communication of the EU NanoSafety Cluster (NSC) pushing the transition of nano-related research accomplishments to SSbD of advanced materials, nanomedical innovation, research on emerging contaminants incl. plastics, and integration of experimental with computational workflows and data FAIRness and metadata completeness. The group focuses on immune activation and modulation by nanomaterials, their interaction with biomolecules, biopharmaceuticals, and impact on respiratory health and chronic inflammatory processes. At the training school he has been involved in the scientific program design and the organization of this session.
- **Gianpietro Basei (PhD)** holds a PhD in Computer Science and is currently working at GreenDecision, a spin-off company of the Ca' Foscari University of Venice. His research focuses on applying machine learning and statistical tools to characterize nanomaterials and assess their risks for human health and the environment. He collaborated in several European projects, including SUN and caLIBRAte and GRACIOUS, working on the development of Decision Support Systems to evaluate the environmental and health risk of Nano Materials in the complete product lifecycle and in tools to assist the grouping and the read across of nanomaterials. He is currently involved in NanoInformaTIX, Gov4Nano and SUNSHINE projects.

17:00–18:30 Risk Assessment and Management

Presentation available HERE

Neil Hunt *V* (Yordas UK)
This session will focus on the risk assessment and management of nanomaterials.

- **Dr. Neil Hunt** is a managing regulatory consultant at Yordas UK supporting industry with their obligations for REACH and other global chemical regulations. He specializes in exposure and risk assessment, authorisation and nanomaterials. He has been a project partner on a number of EU-funded projects, including MARINA, GRACIOUS, and SUNSHINE, where he believes his most useful contribution has been coordinating the guidance documents for the GRACIOUS Framework. He has also been part of the Partner Expert Group (PEG) for the REACH guidance documents supporting the registration of nanomaterials. Neil Hunt has a degree and PhD in Chemistry from Bristol University and an MSc in Environmental Management and Consultancy from Lancaster University. He was a process development chemist in the pharmaceutical sector for 8 years before joining Yordas.

Day 5: Thursday, May 19

09:00–10:30 Introduction to sustainability life cycle assessment (SLCA) and Environmental sustainability assessment: Hands-on session on LCA

Presentation I available HERE
Presentation II available HERE

Lisa Pizzol, Alex Zabeo (GreenDecision Srl)
During this section, an introduction to the concepts of sustainability life cycle assessment (SLCA) will be presented, which includes the integration of environmental Life Cycle Assessment (LCA), Life Cycle Costing (LCC) and Social Life Cycle Assessment (S-LCA). This will be followed by a brief introduction of the field of Life Cycle Assessment, which will allow the students to perform a short exercise with a freely available LCA software following a fictitious case study.

🔸 **Lisa Pizzol (PhD)** is a Senior Researcher and holds a PhD in Environmental Science. She is Shareholder, President and CEO of GreenDecision srl. Her research activities focus on risk assessment of nanomaterials, risk assessment and management of contaminated sites and brownfields, sustainability assessment of new products, processes and technologies, analysis of stakeholders' roles and perspectives in sustainability assessment, Safe and Sustainable by Design, application of multi-criteria decision analysis methodologies for complex decision making processes and development of Decision Support Systems for the environmental and medical sectors.

Alex Zabeo see 17:00 session, Day 4, Wednesday.

10:30–11:00 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

11:00–12:30 Hands-on session on Social LCA / LCC analysis

Presentation available HERE
Case study available HERE

Sonia Martel Martin, Jesús Ibañez (University of Burgos, ICCRAM)
In the School intervention, Sonia Martel and Jesús Ibáñez will present the key ideas needed to develop a Social LCA and LCC in research projects. Then, a case study will be developed by the participants, to go into the methodology details, key points, and further discussions on the application. The importance of both assessments to support decision making will be highlighted.

🔸 **Sonia Martel Martín** Coordinates the Sustainability and Circular Economy research line, developing Life Cycle Sustainability Assessment in the framework of European Projects. She has been involved in the preparation and then management of 21 granted H2020 proposals related to sustainability of the materials, circular economy, nanomaterials and nanosafety. She is currently co-Principal Investigator in 8 H2020 Projects (2 of them coordinated by the University of Burgos).

🔸 **Jesús Ibáñez** is a researcher at the University of Burgos – ICCRAM. He is currently developing a PhD in Life Cycle Sustainability Assessment, focusing on economic assessment. He worked on several H2020 research projects related to Life Cycle Costing, exploitation plans and business models, as well as the financial management of the projects.

12:30–13:30 Lunch 🍝

Bakarò – Osteria & Co., in Campo Santa Margherita

13:30 - 14:00 NSC ECRs initiative presentation

Presentation available HERE

14:00–15:00 Ways to promote your research

Participants choice!
Martin Himly | Susanne Resch | Cathrin Cailliau
Which topic do you want to discuss? Vote before the conference for one of these:
1) How to write a paper
2) Essentials of proposals
3) Social media promotion of results

🔸 **Cathrin Cailliau** is a Science Communication specialist at Yordas Germany. She has worked as both a researcher and communicator, first at the University of Applied Sciences in Munich and then the Nuremberg Institute of Technology. She holds an M.Sc. in Global Change Ecology from the University of Bayreuth. Currently, she is involved in the communication and dissemination of the NanoExplore, CHARISMA and SbD4Nano EU research projects and leading the task in the SUNSHINE project.

15:00–15:30 Coffee break ☕

15:30–17:00 Frameworks and tools for Safe by Design of nanomaterials

Presentation I available HERE
Presentation II available HERE
Interactive session POSTER

Andrea Porcari | Beatrice Salieri | Alexander C. Ø. Jensen | Neeraj Shandilya | Gustavo Gonzalez (Gov4Nano project)
Nanomaterials and advanced materials are the source of complex and uncertain risks, and thus need robust, informed, resilient, and precaution-based approaches to risk governance. The Safe by Design (SbD) approach aims to integrate safety from the early stages of product and process development, all along the value chain. Based on work from past and current projects, and ongoing activities within the OECD WPMN, a framework and tools to implement Safe By Design in Research & Development and manufacturing of nano-related products will be presented. SbD is complementary to sustainability

assessment concepts, such as LCA and S-LCA. The goal of the framework is to guide users (e.g., risk assessors, managers, tech developers) in risk analysis, helping to select the most critical, significant elements to focus on in the design, testing, regulatory approval, and commercialization of nanomaterials. The framework considers a stage-gate approach, and it looks at the different information, tools, and methods to use, depending on the type of material, application and risks along the product development. The session will introduce the role of SbD for risk governance, in view of stakeholder requirements and needs, and will provide an overview of validated tools & methods, based on practical case studies. An interactive brainstorming exercise will close the session, to explore the different factors and challenges to consider in implementing SbD with the participants.

- **Andrea Porcari** is a project manager at the Airi (Italian Association of Industrial Research), a not-for-profit organization working with research, industry, financial organizations and public bodies to promote technology development. He joined Airi in 2005, contributing to EU and national cooperative projects aiming to support and promote Key Enabling Technologies, and responsible innovation practices in industry. He is a member of the OECD-WPMN working group on Safe(R) Innovation Approach (SIA), and in the H2020 Gov4Nano project he co-leads the work package on risk governance of nanomaterials.
- **Beatrice Salieri (PhD)** holds a PhD in Environmental Science (Universita' degli Studi di Bologna). From 2014 to 2020, she worked at Empa, ALCA group, in the research fields of further developing the LCA methodology for novel material and emerging technologies and in the integration of sustainability metrics into the Safe by Design approach. Since 2021, she works as Sustainability Consultant at TEMAS Solutions where she brings her strong expertise in LCA and nanotechnologies and in supporting the further develops of Safe and Sustainable by design approach within EU-research projects (Gov4Nano, SUNSHINE, nanoPAT).
- **Alexander CØ Jensen** see session on Wednesday, 17:00–18:30.
- **Neeraj Shandilya (PhD)** is a research scientist at the department of Risk Analysis for Products in Development at TNO (NL). His research focuses on exposure assessment and risk management of hazardous chemicals and materials. He has contributed to several EU funded projects and (co)authored several peer reviewed publications on human and environmental exposure to nanomaterials and other chemicals in leading journals. He has a Doctorate degree in Industrial Process Engineering and Master degree in Material Science.
- **Gustavo Gonzalez (PhD)** is a Technology Analyst at Airi – Italian Association for Industrial Research. He holds a PhD and a MSc degree from the Polytechnic of Turin in Materials Science and Technology with a focus in advanced materials and composites. His research interests are related to technology foresight, technological transfer, responsible innovation and safety and sustainability by design of new and emerging technologies.

17:00–17:30 A Different View: U.S. Regulatory Assessments for the use of Carbon Nanotubes in Batteries

Presentation available HERE

Phil Sayre (nanoRisk Analytics, LLC)
This session will focus on the regulatory landscape in the U.S. in relation to carbon nanotubes in batteries.

- **Philip Sayre (PhD)** is an independent consultant (Principal at nanoRisk Analytics, LLC) based in California. Recent clients include major U.S. and EU-based companies, and the law firm Wiley.law (Washington, D.C.): work focuses on nanomaterial risk assessments to support commercialization. Additional recent clients included the Gov4Nano and ProSafe EU research programs, and the OECD Secretariat. Up to 2014, he was a regulatory scientist at the EPA where he engaged on approximately 100 nanomaterial risk assessments under the Toxic Substances Control Act. His Ph.D. in Biology is from Georgetown University.

19:30 Social dinner

Social Dinner at "Laguna Libre", Fondamenta di Cannaregio 969, 30121 Venezia (you can choose different languages at the top of the page).
The meeting point will be announced during the event.

Day 6: Friday, May 20

09:00–10:30 Risk Governance: Interactive session: Role-play

Presentation I available HERE
Presentation II available HERE
Risk Governance Interactive Session - material about TiO2 Food Ban

Martin Himly, Sabine Hofer, Norbert Hofstätter (Paris Lodron University of Salzburg) | Susanne Resch (BioNanoNet) | Phil Sayre (nanoRisk Analytics, LLC) | Damjana Drobne *V* (University of Ljubljana) | Jose Vicente Tarazona (EFSA)

The risk governance session will have a highly interactive character. First, Martin, Sabine, and Norbert will give insight in which way risk governance differs from risk assessment and how risk governance frameworks, like the one NanoRigo has established, may help users through the process and make sure to include relevant stakeholder views and assess their potential concerns towards novel technology. Damjana will present the case of TiO_2 which recently culminated in a food ban of this nanomaterial in Europe. This case will then be worked through, giving the attendees the chance to represent the interests of different stakeholder groups (industry, society, scientists, regulators) for generating a joint statement of a panel to be established from the different groups. Martin, Sabine, Norbert, Damjana, Susanne and Phil, will support the groups in their discussions. While this session will be mainly driven by the NMBP-13 projects, Phil will provide the perspective of the regulatory aspects as conducted in the US.

- **Prof. Martin Himly** see session on Wednesday, 15:30–17:00.
- **Sabine Hofer & Norbert Hofstätter** See Tuesday, session at 11:00.
- **Susanne Resch** is a research scientist at BNN (BioNanoNet Forschungsgesellschaft mbH). Her background is a Mag. pharm. and MSc. She studied Pharmaceutical Sciences at University of Graz, focusing on pharmaceutical technologies, including novel drug delivery systems like various nanoparticles/nanocarriers. In 2017, she finished a post-graduate MSc program on European Project and Public management. Part of BNN's scientific staff since 2015, she gained expertise and experience through participation in >10 international projects (FP7, H2020 & H-EU) in the field of nanotechnology, focusing on nanoEHS and related issues, creation and implementation of tailored Safe-by-Design concepts, as well as dissemination and communication, education and training, and stakeholder engagement.
- **Philip Sayre (PhD)** see session on Thursday, 17:00.
- **Prof. Dr. Damjana Drobne,** is the head of the group for Nanobiology and Nanotoxicology at the University of Ljubljana, Ljubljana, Slovenia and professor for toxicology and professor for zoology with thirty years of research experience. She is the founder and principal investigator of a research group for nanobiology and nanotoxicology. Her group has participated and is participating in different EU projects on nanomaterial safety and recently also on plastics safety (NanoValid, NanoMile, NanoFase, NANORIGO, Pandora, PlasticsFatE, Papillons and NOVA). At a national level, her group is a partner in two national Centers of Excellence (CO NAMASTE and CO NanoCentre). Recently, she has been involved in data, information and knowledge sharing aligned with FAIR principles (NMBP-13 cross project collaboration on data and CUSP on data management).
- **Dr. Jose Vicente Tarazona** is a Senior Scientist at the Methodology and Scientific Support Unit, is the Chair of the Scientific Committee Working Group on Nanotechnology at the European Food Safety Authority (EFSA). He is also chairing the EFSA Nanonetwork and coordinating several projects on the use of New Approach Methodologies in regulatory risk assessments. A Doctor in Veterinary Medicine with a PhD in Toxicology, he was Director of the Department of the Environment at INIA, Spain. Has been directly involved in the scientific advisory board of the European Union, as member and vice chair of the EU Scientific Committees CSTEE and SCER, and Chair of the Committee for Risk Assessment at the European Chemicals Agency.

10:30–11:00 Coffee break ☕

Bakarò – Osteria & Co., in Campo Santa Margherita

11:00–12:30 Risk Governance: Interactive session: Role-play (continued)

See session above, 09:00–10:30.

12:30–13:30 Closing Remarks

Wrap-up of the conference and its highlights.

Project information

In alphabetical order:

ASINA www.asina-project.eu

CEINT ceint.duke.edu

CHARISMA www.h2020charisma.eu

DIAGONAL www.diagonalproject.eu

Gov4Nano meeting the needs of nanotechnology www.gov4nano.eu

HARMLESS www.harmless-project.eu

NanoCommons Nano-Knowledge Community www.nanocommons.eu

nanoinformaTIX www.nanoinformatix.eu

NANORIGO nanorigo.eu

NanoSafety Cluster www.nanosafetycluster.eu

NanoSolveIT nanosolveit.eu

RISK GONE riskgone.eu/2020

SABYDOMA www.sabydoma.eu

SABYNA www.sabyna.eu

SbD4Nano SAFE BY DESIGN FOR NANO www.sbd4nano.eu

SUNSHINE Safe and Sustainable Design for Advanced Materials www.h2020sunshine.eu

Università Ca'Foscari Venezia www.unive.it

These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements nº 862444, nº 952921, nº 953152, nº 953183, nº 814426, nº 862296, nº 862419, nº 862195, nº 952924, nº 814401, nº 731032, nº 814530, nº 814572, and nº 814425.

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V = virtual attendance, virtual event