

Welcome to the 24th NSC Newsletter

Happy Autumn and welcome to the 24th edition of the NSC Newsletter.

Our report from the Coordination Team highlights how **the future of our Newsletter and related activities is in jeopardy**. We extend our gratitude to the **NanoHarmony** and **Gov4Nano** projects, which are ensuring their continuation until the start of 2022, after which there is **no funding support**. Please take a moment to read the CT update, and **please let us know your thoughts** on how these activities can be financially supported.

Following the CT report, we have updates from our Working Groups on their ongoing activities. This is followed by two short pieces, the first providing links to the NSC Training School videos, and the second describing new collaborations with ELIXIR, which unites Europe's leading life science organisations in managing and safeguarding data generated by publicly funded research.

In our extensive selection of news from the NSC Projects, read about PATROLS' final meeting before the significant contribution from NanoPAT—join the forthcoming workshop (p.23). You'll also see updates from the NMBP-13, 14 and 15 projects. If you have a moment, please have a look at the survey on the perception of nanomaterials (p.16)

In news from related projects, the CUSP Cluster (The European research cluster to understand the health impacts of micro- and nanoplastics (MNPs) announces the publication of its very first newsletter and brochure with valuable information.

Our 'Other News' section includes a report from Wecf based on their cosmetics study, which highlighted a number of ingredients of concern, while the following two articles focus on the workplace and industry contexts and issues and will appeal to those involved in these sectors.

In 'Publications' you will find links to three very different topics ranging from a COVID-19 inoculations study, to FAIR Data and then to wood and its future potential

Finally, in events, check the dates as soon as you can. Some of them are imminent!

Once again, your contributions are enormously appreciated and thank you to everyone who has taken the time to compile and submit news items. We hope you enjoy this issue. Please feel free to share among your networks.

Take care and stay safe

Best wishes

Lesley Tobin

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The next — and hopefully not our final — NSC Newsletter will be published in mid January 2022.

Send in your news, project updates, opinions, events, publications, and opportunities by 10th January 2021

- [Submit your news here](#)
- [Subscribe to the Newsletter \(Community\) here](#)
- [Find ways to connect with the NSC here](#)



News from the NSC Coordination Team

Moving with the seasons

As we are officially in the autumn season and the nights are drawing in – no doubt you didn't wait for us to tell you – we hope you are well and enjoying the approach of winter along with whatever it might bring. For sure, there will be good things and bad. But, focusing on the positive, we are aware that most of the nanosafety community members were **busy over the summer working on new proposals for the recent call deadlines**. This is an important activity that will, in due course, bring **new blood, new ideas, new inspirations and new frontiers** to our community. We are all eagerly anticipating the call announcements in the new year, and, perhaps, the NSC Coordination Team particularly so, as we are constantly working towards **aligning the community to these new frontiers and ensuring we stay together as a strong and successful grouping**, an aspirational paradigm of how to work together, **sharing whenever possible**, despite our natural tendency to compete.



Save our Newsletter!

One central feature of our togetherness as a community has been, of course, this very Newsletter. We can hardly remember the times before the newsletter: it has been a great way to keep informed of our community's updates, and, very importantly, a one-stop shop for any relevant piece of news, regardless of project or working group. So, **this news item is also a call to arms to save our Newsletter**. Until recently, the (very modest) funding for it came from a single project, and rolled on from one project, after its end, to another. This process has recently not worked, and, although the Newsletter has, thankfully, received a small injection of funding to take us to the end of the calendar year (and hopefully one more issue), **this may prove to be the end of the road for it**.

We most sincerely hope this will not be the case, and **we are eagerly awaiting for an offer to take the newsletter and its related activities forward for a few more months**.

Thank you!

While we anticipate funding from one of the new projects that might materialize from the recent calls, we would like to extend thanks to **NanoHarmony** and **Gov4Nano** for their support not only to the Newsletter but also to **the continuation of the following activities**:

- **NSC LinkedIn group**: 736 members
- **EUNanoSafety Cluster twitter account**: 2,703 followers
- **NanoSafety Cluster YouTube channel**: 62 videos
- **Nanohub.org**: Open Access Platform for all education materials from all NSC projects
- **Zenodo – NanoRisk Governance**: 34 items, supports **Zenodo - NanoSafety Cluster** 111 items

Changing the subject, we hope you have noticed **the improvements** made over the summer **to the NSC website**. These are **thanks to your comments and requests**, so keep them coming. And whilst on the subject of getting in touch, please also make contact if you, or your project has planned activities you wish to share with the community, or indeed need help to plan such activities.

Finally, we wish you a nice autumn and look forward to meeting you again soon.

Éva Valsami-Jones, Andreas Falk, and Flemming Cassee

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The NanoSafety Cluster Working Groups report:



WGA Communication, Training and Education: Chair and Co-Chair: Martin Himly, Stella Stoycheva

WG-A was in touch with Arno Gutleb (EU-US CoR) and Sean Kelly (NIA, intermediate head of NSC Dissemination Group) for developing training in OECD TG establishment. Potential speakers were contacted previously. However, NanoHarmony has published a number of OECD training videos on the NIA YouTube channel. Moreover, a 3-d workshop will be organized by NanoHarmony on Nov 24-26, open to everybody on Nov 25. Registration will be live soon and the agenda is to be finalized. This will also be a discussion platform for regulators and industry in internal sessions and of course host NanoHarmony-related sessions. Based on the experiences from this event, another will be organized early 2022 targeting primarily academia to display what OECD guidelines and standards may help in YOUR project or how to proceed with YOUR established SOPs or else into OECD establishment.

WGB Materials & Standards: Chair and Co-Chair: Miguel A. Bañares, Georges Favre

- A survey was launched within the WG-B to identify members' expectation. This will be relaunched to attract more input. The results will then be processed to determine the priorities for the actions envisaged.
- There is a need for an EC funding scheme to coordinate inter-lab programmes at EU scale to validate characterisation methods and have the necessary data to feed standardisation process. This is a recommendation from NanoFabNet activities: <https://www.nanofabnet.net/challenges-opportunities-in-the-validation-harmonisation-standardisation-of-industrial-scale-nanofabrication/>.
- A new European Metrology Network has been recently launched on Advanced Manufacturing with a section dedicated to Adv Materials, of which Georges Favres is the chair. The objectives are to move a step forward in this direction (<https://www.euramet.org/european-metrology-networks/advanced-manufacturing/?L=0>) and to coordinate EU players on the metrology topic, together identifying needs from stakeholders (what kind of adv materials with the most pressing needs, for which properties/issues and which applications...) in view of producing a Strategic Research Agenda to be submitted to EC & EURAMET by the end of 2022 .

WGC Exposure and Hazard Assessment: Chair: Wouter Fransman

- A HARMLESS workshop was held (20 Sep 2021) on data gap filling for release, exposure, phys chem and hazard data. It identified data gaps and plans to fill the data gaps within the course of the project (with representatives from other NMBP-16 projects (SUNSHINE, DIAGONAL) invited)
- GRACIOUS – An NMBP-16 ambassadors meeting took place (15 Sep 2021) to carry over results from GRACIOUS into the newly started NMBP-16 projects (HARMLESS, DIAGONAL, SUNSHINE). Wouter Fransman led the Ambassadors group on "Exposure Assessment and Risk Management" and the highlights are identified below:
- Share data templates and SOPs on dustiness/release, exposure, RMM
 - Data comparability
 - GRACIOUS templates + terminology => eNanomapper
 - Mandatory for new projects
- Interchange of collected data
 - Better to bring together all data instead of having small sets of measurements within each of the projects
 - eNanomapper
 - Confidentiality?
- Exchange case study information
 - Plot case studies in the various projects to avoid overlap
 - Exchange data (if confidentiality allows)
- Stakeholder needs on RMM
 - Costs of implementation of RMM
 - In collaboration with stakeholder group
- Human vs Environmental exposure and RMM
 - Focus in all three projects mainly on human, but also on environmental exposures and RMM
- Harmonized cloud platform (tools group)
 - Each of the projects make their won tool platform
 - User confusion
 - Sustainability of the tools after projects end
 - Create harmonized tool group to discuss overlap and provide interlinkage

Cntd →



Cntd →

WGD Models & Tools for Risk Assessment: Chair: Martin Clift

In recent months a lot of activity has been ongoing within WG-D. Many partners have been involved in the funding calls for the 'EU Green Deal', the recent 'Horizon Europe' Calls, as well as ongoing OECD test guideline activities. All of which have been to push forward the potential alternative models for risk assessment of engineered, and advanced (nano) materials. Furthermore, due to the involvement of Tommaso Serchi across many of these activities, he has decided to step-down as the chair of WG-D. Tommaso will continue as a deputy-chair of the WG, and we wish him all the best with his endeavours. Martin Clift (Swansea University, UK), now will chair WG-D.

WGE Innovation & Safer by Design: Chair and Co-Chair: Andrew Nelson and Anna Costa

WGE has been extremely active over the past few months. In the early part of this year the group was extended to anybody within the NSC interested in safety-by-design, innovation and sustainability making the way for some very lively discussions. The group are meeting every two months. The most recent meeting was held 30 June with up to 20 attendees.. Currently a stakeholder workshop on the Safety-by-Design paradigm is being planned. Due to the summer vacations, the next meeting has been postponed to next month November. Here we hope to hear about the recent NANOCOMMONS workshop. It is also planned at the next meeting to discuss in detail the exact meaning of the Safety-by-Design issue and how this applies not only to nanomaterials but also to risk assessment philosophy in general.

WGF Data Management: Chair and Co-Chair: Egon Willighagen and Thomas Exner

WGF held monthly meetings in June, July, and September. As usual, these meetings are a place where multiple projects update each other with new results, other news, and upcoming events. Meetings were attended by 5-12 participants in this period, presenting some ten different projects, including NanoSolveIT, Gov4Nano, NanoCommons, RiskGone, SbD4Nano, NanoinformaTIX, and Gracious. We also regularly have participation from the USA. Topics discussed in the past three meetings include the joined WGF work in FAIRness, particularly the collaboration between Gov4Nano, RiskGONE and NanoSolveIT. The WGF telcons are a common place to get feedback (informal peer review) on ongoing activities. Topics discussed in this period include the European Registry of Materials and identifiers, the NanoInChI, an update from the [IUPAC Nomenclature Task Group](#), the [NanoCommons User Handbook](#), the public release of [the NanoReg2 data](#), lipid nanoparticles in databases (with experimental data), an emerging [Daphnia biological pathway portal](#), and more. Monthly meetings are on the second Tuesday of the month, 3pm CET or CEST, depending on the season.

WGG Regulations & Risk Governance: Chair: Steffi Friedrichs

Working Group G serves as an interface between science and regulations/policymakers. As such, its activities are centred on the use of scientific results to inform the review and/or development of policies and policy-harmonisation efforts, such as standards and (test) guidelines. Dedicated workshops, seminars and written summaries transfer regulatory (information) needs back to the scientific community to help develop targeted research roadmaps. Working Group G currently provides a platform for the objectives and activities of the concluded H2020 project on the 'Next Generation Tools for Risk Governance of Nanomaterials' (NMBP-30), the ongoing H2020 projects on 'Risk Governance of Nanotechnology' (NMBP-13), Nanoinformatics (NMBP-14) and 'In Support of documentary Standards' (NMBP-34), and the H2020 project on 'Integrating Activities for Starting Communities' (INFRAIA-02). WG-G holds regular, recurring meetings at 13:00 – 14:30 on the 1st Friday of every third month (i.e. May - August - November - February).

Join any or all of the [Working Group Mailing Lists](#)

Find out more about each Working Group:

- [Working Group A – Communication, Training and Education](#)
- [Working Group B – Materials and Standards](#)
- [Working Group C – Exposure and Hazard Assessment](#)
- [Working Group D – Models and Tools for Risk Assessment](#)
- [Working Group E – Innovation and Safer by Design](#)
- [Working Group F – Data Management](#)
- [Working Group G – Regulations and Risk Governance](#)





Nanosafety Training School 2021



Videos now online

If you were unable to attend the NanoSafety Training School, or would like to revisit any of the session, the videos are now available online.

Jointly organized between seven EU funded H2020 research projects (BIORIMA, Gov4Nano, GRACIOUS, NanoInformaTIX, NANORIGO, PATROLS and RiskGONE) and following more than a decade of tradition, the theme of this year's Nanosafety Training School was '10 Years of Nanosafety Training from Basic Science to Risk Governance'.

This opportunity for dialogue about risk assessment and management and safe-by-design of nano-(bio)materials through cross-cutting insights from nanosafety, nanomedicine and risk governance fields attracted over 170 registrants from across the globe. The programme included different sessions on each afternoon, with contributions from many experts with different scientific backgrounds presenting the latest results of EU's nanosafety research arena.

[Watch any or all of the Training School videos here](#)

NanoSafety Cluster Collaborations with the ELIXIR Toxicology Community

[Egon Willighagen](#)
Maastricht University



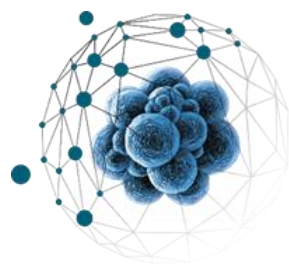
This September the [ELIXIR](#) Head of Nodes Committee decided to establish the ELIXIR Toxicology Community. ELIXIR unites Europe's leading life science organisations in managing and safeguarding the increasing volume of data being generated by publicly funded research. With the acceptance of a Toxicology Community we can start expanding collaborations between [NanoSafety Cluster](#) projects and ELIXIR activities. Several projects have already started and are collaborating with ELIXIR. For example, [TeSS](#), ELIXIR's Training Portal, is featuring [NanoCommons](#) and [eNanoMapper](#) material overviews [1]. NanoCommons further collaborated with the [Bioschemas](#) project and developed a [ChemicalSubstance](#) profile to be used to make web pages about nanomaterials more FAIR, which was recently adopted by schema.org [2].

Being an official ELIXIR Community now will give an additional boost to these activities also by interaction with the other Communities and Platforms. An overview of these can be found at <https://elixir-europe.org/communities>.

Interested people can sign up to the ELIXIR Toxicology Community mailing list at <https://bit.ly/2XJxtgS>.

Toxicology data management tutorials automatically collected by European training portal TeSS, DTL-NL, 19 July 2018, <https://www.dtls.nl/2018/07/19/toxicology-data-management-tutorials-automatically-collected-by-european-training-portal-tess/>

Towards better findability: Bioschemas meets Schema.org, ELIXIR News, 9 July 2021, <https://elixir-europe.org/news/towards-better-findability-bioschemas-meets-schemaorg>



PATROLS

Advanced Tools for NanoSafety Testing

Recordings from PATROLS final meeting published

[Sean Kelly](#)

Nanotechnology Industries Association

The PATROLS project has held its final public meeting to present its results to all stakeholders and show how much the project has achieved over the last 42 months. Recordings of the workshop *"Next-generation Approaches for Nanomaterial Human and Environmental Safety Assessment - Results from the PATROLS Project"*, have now been published on [YouTube](#) and are available for all to see.

The topics covered in the final meeting included:

- Physicochemical hazard concern phenomena with specific focus on dissolution and hydrochemical reactivity
- Advanced multi-cellular *in vitro* human pulmonary, liver and gastrointestinal tract models for nanomaterial hazard assessment
- Advanced ecotoxicity tests and *in silico* tools for nanomaterial hazard prediction

PATROLS has achieved significant results over its lifetime and has left a substantial legacy which can be used by industry, regulators and researchers to help move towards reducing animal usage in testing and in understanding how to test for realistic exposures to nanomaterials.

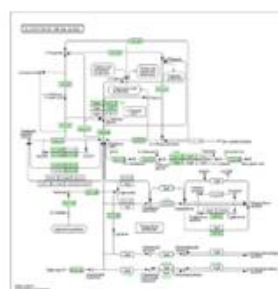
Professor Shareen Doak, Professor of Genotoxicology and Cancer in Swansea University Medical School and Coordinator of PATROLS says, "PATROLS has brought together 24 partners from 14 different countries to collaborate on developing more advanced tools to help support regulatory risk assessment. We have worked hard to advance these tools so that they can give us greater insights into understanding exposure to nanomaterials and can be used in the future to help support the efforts in the EU to develop new risk assessment methods. I am extremely happy to conclude the project with this open event that has helped us share our advances with the wider community."

Further publications from PATROLS are also expected from partners to add to the 60 papers already published. Alongside the publication of its results in peer review journals, PATROLS has also published a series of [factsheets](#) aimed at researchers and policy makers to provide quick overviews of some of the key project outcomes.

PATROLS has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 760813.



Interrogation of genome sequence information illustrates strong similarities between mammals and zebrafish in the gene pathways and regulatory networks associated with oxidative responses (and inflammatory responses)



KEGG pathway of glutathione metabolism (KEGG ID: 480). The genes in green are present in *Z. danio rerio*.

The identified genes were then mapped onto known pathways and functional annotations for mammals (KEGG database)

For the liver, these response pathways included oxidative phosphorylation, glutathione metabolism, MAPK signalling and P53 signalling.

Findings strongly support the use of zebrafish for understanding the regulatory and functional networks associated with oxidative stress mechanisms and for predicting adverse outcomes in mammals associated with ENP exposure



University of Exeter + Swansea University (WP4)

NanoPAT— Achievements this Summer 2021

[Beatriz Alfaro Serrano](#)

BioNanoNet Forschungsgesellschaft mbH (BNN)



The EU-H2020 project [NanoPAT](#) aims to demonstrate three novel real-time nano-characterisation [Process Analytical Technologies \(PAT\)](#) that help to overcome problems and limitations of conventional characterization technologies: the (1) Photon Density Wave spectroscopy (PDW) , (2) Opto-Fluidic force induction (OF2i), and the (3) Turbidity spectrometry (TUS). Furthermore, NanoPAT will include real-time data handling for digital process monitoring and product quality control, which will be validated in [5 different industrial](#) ceramic, polymer and mineral nanoparticles manufacturing and converting environments. Thanks to a hardworking team, there have been plenty of activities going on during the summer 2021.

PAT devices delivered to the RTO pilots

In July 2021 the PAT devices developed by the technology providers [BRAVE](#), [PDWA](#) and [IRIS](#), have been ceremoniously handed over to the RTO pilots and are already installed for beginning with the measurements after an optimization of their configurations:

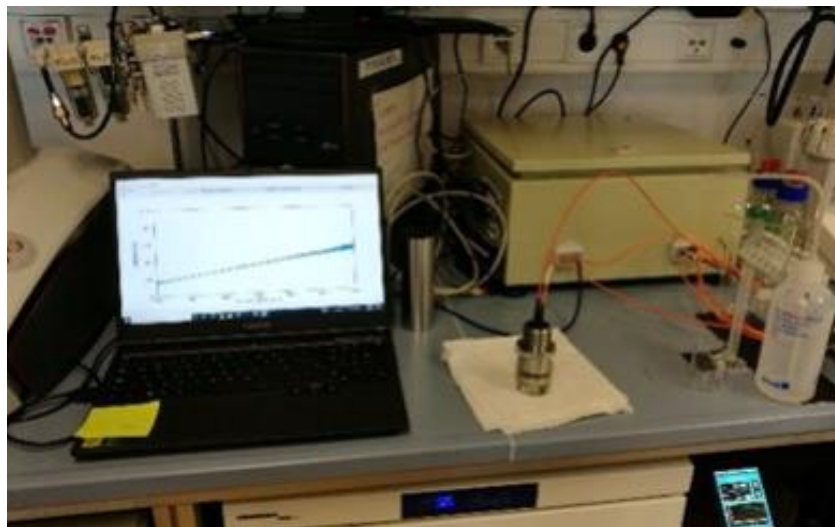
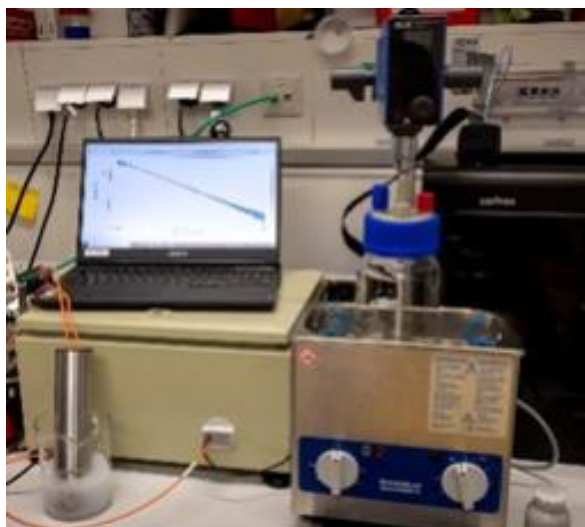
- PDW spectrometer from PDWA to [UPV/POLYMAT](#) (The PDW spectrometers were already installed in the past months at [ZHAW](#) and [UP/innoFSPEC](#)).
- OF2i device from BRAVE to [MUG](#).
- TUS device from IRIS to [UPV/POLYMAT](#), [MUG](#) and [UP/innoFSPEC](#)



BRAVE and MUG teams uncovering the brand-new BRAVE B1 prototype



Zeolite synthesis by Despina Emmanouilidou in the Lab of Industrial Chemistry at ZHAW in Wädenswil



TUS systems delivered and installed at MUG & innoFSPEC

[Cntd →](#)

Cntd → NanoPAT— Achievements this Summer 2021



PDW probe packed for transport



Box containing PDW equipment



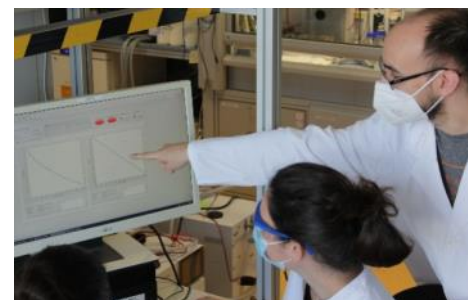
First PDW measurements at POLYMAT

On-site internal training and networking activities

During the summer months of 2021, some members of the NanoPAT team have managed to meet physically for training and networking purposes, which is an excellent opportunity given the challenges we are all facing with the COVID-19 pandemic. Below is a brief summary of these activities, which were mainly conducted by the RTO pilots.

POLYMAT team visiting UP

Usue Aspiazu, a student from the [University of the Basque Country](#) (Spain), visited the [University of Potsdam](#) (Germany). Usue, as a member of [POLYMAT](#), one of our partner institutions in the NanoPAT project, stayed for one month (June 2021) at the [innoFSPEC](#) laboratory in Golm to receive training in [PDW spectroscopy](#). The knowledge about the PDW measurement technique is and will further be used to monitor the NanoPAT polymer synthesis processes.



PDW training at UP

IRIS visiting POLYMAT

Nicola Palombo, from [IRIS Technology Solutions](#) (Spain), visited [POLYMAT](#) (University of Basque Country, Spain) from 14 to 18 June 2021. He brought the [Turbidity Spectrometry](#) (TUS) equipment developed at IRIS to the POLYMAT laboratories in San Sebastian, Basque Country.

While at POLYMAT, Nicola installed, tested and calibrated the TUS equipment so far with manual dilution, with the help of POLYMAT's Oihane Llorente, who carried out the nanoparticles synthesis. The system can be further used by the POLYMAT team. Furthermore, Nicola has trained the POLYMAT research team on how to use the TUS equipment to analyse polymer particle size.



TUS equipment

ZHAW visiting UP

Despina Emmanouilidou, from the [Zurich University of Applied Sciences](#) (ZHAW), visited the [University of Potsdam](#) (UP) from 28 June to 2 July 2021. The aim of the visit was an intensive training by PDWS experts at [innoFSPEC](#) Potsdam, with a focus on zeolite synthesis and first experiments with offline and inline [photon density wave spectroscopy](#) (PDWS). Additionally, measurement of zeolite properties with reference methods exclusively available in Potsdam were planned.



Visit to Potsdam – NanoPAT team members.

Cntd →

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TEMASOL visiting UPV/POLYMAT

Blanca Suarez, from [TEMASOL](#), visited on July 15th the site where [UPV/POLYMAT](#) has installed the [TUS detector](#). Blanca Suarez was also introduced to the process behind using the detector and all equipment involved. This visit is part of TEMASOL's activities under Task 7.4 "Nanosafety assessment & Elaboration of safety/Safety-by-Design guidelines" where NanoPAT will work towards the identification of future safety issues relevant for commercially fully exploitable innovative technologies.



TUS detector



TEMASOL visiting the installations of UPV/POLYMAT.

The BioNanoNet members [BRAVE Analytics GmbH](#), [Medical University of Graz](#), [Zurich University of Applied Sciences](#) as well as [BNN](#) itself are consortium partners in [NanoPAT](#).

NanoPAT Project Summary

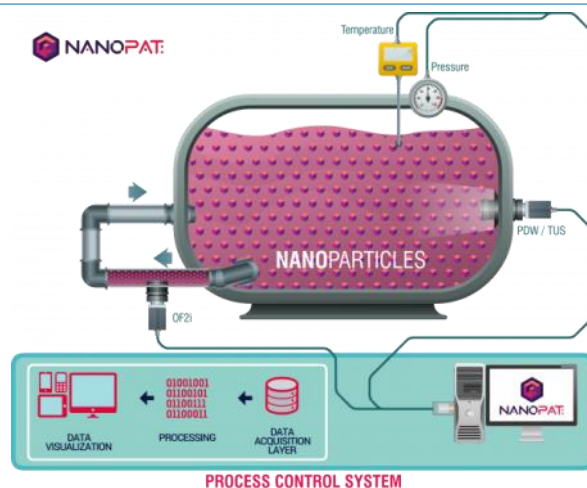
Nano-scaled materials are abundant in different stages of industrial manufacturing. Physical and chemical properties of these materials are strongly dependent on their size. Characterisation of mean size, size distribution, and shape of nano-scaled particles is very critical for the quality and efficiency of manufacturing processes. Yet, conventional characterisation technologies still show manifold shortcomings which represent a major innovation obstacle for manufacturers of nanoparticles.

The NanoPAT consortium aims at closing this gap through the demonstration of three novel, real-time nano-characterisation Process Analytical Technologies (PAT):

- Photon Density Wave spectroscopy (PDW),
- OptoFluidic force induction (OF2i) and
- Turbidity Spectrometry (TUS)

including real-time data handling for digital process monitoring and product quality control.

NanoPAT project has received funding from the European Union's HORIZON 2020 research and innovation programme under grant agreement n° 862583.



Read more about BNN's activities in the [BNN NEWSLETTER 03/2021](#)

SABYDOMA Project Video

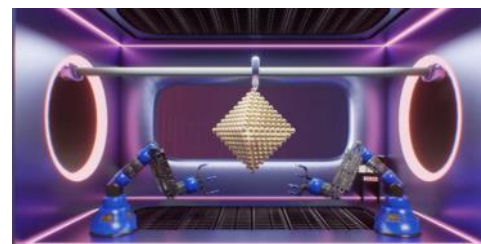
[Beatriz Alfaro Serrano](#)

BioNanoNet Forschungsgesellschaft mbH (BNN)

SABYDOMA is pleased to introduce a [project overview video](#) presenting the main concepts and ideas behind the project.

Nanomaterials have the potential to be harmful to humans and other forms of life in ways we have not fully understood yet. To minimize this risk, SABYDOMA brings together a team of 19 international organizations with the aim of using the "Safety-by-Design" concept to minimize these risks at the earliest stages of nanomaterial production.

We will establish high-throughput platforms to manufacture nanomaterials and to screen their toxicity directly at the point of production. The SABYDOMA platform will use physicochemical and biological sensor elements, with the resulting signals produced being used to control the redesign and production of safe but functional nanomaterials within a feedback loop. Our approach will also enable the manufacture of safer chemicals and pharmaceuticals, cutting down on subsequent testing. Such an important innovation will not only prevent potential hazards, but will speed up the production process, decrease manufacturing costs and minimize waste in the circular economy.



Meet the Early Career Researchers of the ASINA Project

[Sara Attanà](#)

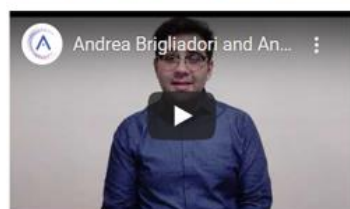
Warrant Hub

Do you want to know better the young researchers that compose the ASINA project ECRs group? Now, it is possible to know everything about them on ASINA project website and YouTube channel. Twice a month, in fact, the early career researchers talk about themselves, their research fields and their professional experience in some short videos that are shared on the main ASINA's social channels. Moreover, by the end of the year, the first ECRs newsletter will be sent out so, sign up now to be always updated about their activities: <https://www.asina-project.eu/early-career-researchers/>

The **Early Career Researchers group** is led by **Ilaria Zanoni**, Postdoctoral Researcher at ISTE-CNR, and **Stefania Melandri**, Project Manager at the Business Unit European Funding Development of Warrant Hub; the group is composed by 20 young scientists from 8 partner organizations of 6 EU countries. The group will meet every two months, to share their experience from the project and to update each other about activities and events of interest. The main tasks will be the organization of training events, focus groups on SbD approach with the collaboration of other projects and the delivering of a six-month newsletter to give updates about the group's news. It is possible to sign up to the newsletter inside the ECRs group webpage on ASINA project website.

The group was born from ASINA, but it is open to the participation of early career researchers also from other projects in the safe-by-design field. In fact, the group is already involved in the Early Career Nanoscience Researcher initiative, that was create as a huge inter-projects ECRs group and where also other NMBP-15 and NMBP-16 projects are involved.

For more info, visit the Early Career Researchers webpage: <https://www.asina-project.eu/early-career-researchers/>





HARMLESS Project Launches its Flyer

Beatriz Alfaro Serrano

BioNanoNet Forschungsgesellschaft mbH (BNN)

The [HARMLESS](#) project is proud to present its new flyer, which is available for [download now](#). It provides an overview of the project objectives & impact, the partners, the five case studies and the work plan.



SUNSHINE Hosts Webinar Defining Safe and Sustainable by Design Insights from H2020 SUNSHINE Project



Background

Recent European Union initiatives such as the Green Deal and its actions related to the Circular Economy, the new Industrial Strategy and the Chemicals Strategy for Sustainability propose a societal transition towards a climate-neutral, circular and resource-efficient economy and a zero pollution/toxic-free environment. A key aspect for this transition is the adoption of Safe and Sustainable by Design (SSbD) approach by integrating safety, circularity and functionality of chemicals, materials and products throughout their lifecycle and by minimising their environmental footprint.

In this context, the SUNSHINE (project funded under the Horizon 2020 framework), aims to develop and implement simple, robust, and cost-effective SSbD strategies for materials and products incorporating advanced multi-component nanomaterials (MCNMs). This webinar, held earlier this month, covered:

- Safe and Sustainable by Design concept
- Approaches to developing Safe and Sustainable by Design criteria
- Key insights from the H2020 SUNSHINE project working towards developing SSbD approaches to MCNM

SUNSHINE is an industry-oriented project, where leading research and technology organisations will cooperate with SMEs and large industries to develop and implement simple, robust, and cost-effective Safe and Sustainable by Design (SSbD) strategies for materials and products incorporating advanced multi-component nanomaterials. To this end, the project will establish a user-friendly e-infrastructure to foster dialogue, collaboration, and information exchange between actors along entire product supply chains.

For more information about the SUNSHINE project, visit <https://www.h2020sunshine.eu/>

Contacts for Press:

[Dr Stella Stoycheva](#), Stakeholder Engagement and Dissemination Manager

[Besa Maliqi Sylva](#), Dissemination Manager

Yordas Group

Biomonitoring studies successfully carried out

In October-November 2020, a “universal control group” consisting of 42 people (27 males and 15 female) was recruited in Torino and Lausanne and exposure and biomarker measurements have been carried out following the harmonized protocol developed by NanoExplore. This “control group” of not exposed peoples has served both to estimate the background (physiological) concentrations of selected biomarkers (and also of new biomarkers under validation developed by UNITO) and as a control group, to compare the company’s internal groups (exposed and not exposed) recruited for the field studies. More specifically, the first campaign in Italy was successfully accomplished in June with 50 workers and 20 controls. The second campaign in Spain was also accomplished successfully in July, although with serious difficulties due to the 4th wave of the pandemic, with 19 exposed workers and 10 internal controls. Overall, 96 volunteers were enrolled during the Italian and Spanish campaigns. Indeed, some drop-outs occurred and they were mainly due to the pandemic situation.

Now, NanoExplore partners are working on the results from the measurements campaigns carried out in Italy and Spain. Regarding the real scenarios, during the campaign in Italy a total of 4 plants from one company were part of the study, in which a total of 12 industrial scenarios were monitored. Here, some of the materials used in the processes with possible release of nanoparticles were the following: Titanium oxide, cellulose powder and silica-carbonate.

On the other hand, in the Spanish company where a total of 4 scenarios were monitored, all of the scenarios correspond to laboratory scale. Here, some of the materials used in the processes with possible release of nanoparticles were the following: silver and gold nanoparticles, iron oxide NPs, graphene, Biodegradable polymers and Methacrylate and acrylate polymers.

All results and deliverables will be available in Spring 2022. Find out more updates and watch our [Project Video here](#):



Safe-by-Design of nanomaterials in industrial production processes workshop

[Dr. Stella Stoycheva](#)
SbD4Nano Project Communication
Yordas Group



On 24th September 2021, a workshop on “Safe-by-Design of nanomaterials in industrial production processes” was held during the NanoInnovation 2021 conference. The workshop was initiated by the SbD4Nano project, supported by ART-ER and jointly organised between Gov4Nano and the NMBP-15 sister projects ASINA, SABYDOMA and SAbYNA. The hybrid setting of the workshop facilitated both online participation as well as on-site attendance at the Faculty of Civil and Industrial Engineering of the Sapienza University of Rome, Italy. In total, more than 45 participants came together to discuss the practical approaches for risk prevention and safety management in laboratories and production sites using nanomaterials, on the basis of a Safe-by-Design (SbD) approach, integrating safety since the early stages of product and process development.



The workshop, moderated by Elisabetta Toschi (ART-ER and SbD4Nano project) started with a presentation given by Andrea Porcari (Airi & Gov4Nano project), who set the scene talking about SbD as a cornerstone of current and future R&I policies in Europe and in the world through the OECD for the development, production and use of chemicals, materials and products. This introduction was followed by several presentations addressing the real-life industrial implementation of the SbD concept. Lessons learned and case studies on how to approach SbD implementation were presented by Blanca Suarez Merino (Temasol AG and Gov4Nano project), Lorenzo Calabri (ART-ER and SbD4Nano project), Stefano Manfredini (Ambrosialab Srl, University of Ferrara and SbD4Nano project), Silvia Vertuani (Ambrosialab Srl, University of Ferrara) and Ivonne Tonani Tomasoni (Red of View Srl and ASINA project). The 90-minute session ended with a brainstorming and lively discussion among all participants. Key questions addressed during the interactive discussion included: How to put SbD in practice in industrial processes? What do innovators need from the (safety) research community (i.e., data, guidelines, training, tools, etc.)? What tools may help innovators in the application of SbD procedures (i.e., designing, implementing, testing, regulations, etc.)? The workshop was a great success and potential follow-up activities will be discussed in the next weeks.

CHARISMA advancements

Besa Maliqi Sylva, Dissemination Manager
Yordas Group



CHARISMA aims to harmonize Raman characterisation of materials from an overarching perspective (protocols, reference samples, algorithms, correlations, hardware and quantitative analysis). With this objective, it is crucial to first gather relevant existing knowledge that will allow to set the basis for this harmonisation.

Standardisation and Harmonisation

Under WP7 a thorough compilation and analysis of relevant existing documentation about Raman spectroscopy covering guidelines, publications, standards, databases and other relevant information was accomplished. CEN/CENELEC/ISO/IEC standardisation systems are specifically covered and an overview of the Standardisation Technical Committees relevant for CHARISMA is also included. The scope specifically includes modelling, hardware and procedures for calibration and measurement, analysis and ontology, and also covers other subjects to complete the view on Raman literature. Existing standards, guidelines and academic publications on parameters and protocols for Raman spectrum recording, normalisation and analysis, including specific Raman applications, relevant *Internet of Things* (IoT) standards, API, formats, ontologies and databases for representation of Raman spectra were covered. The availability of this information at the very early stage of the project will allow using already existing material and the alignment with current and under development documentation facilitating the compatibility of the outcomes with the current market practises.

Round - Robin

The first phase of the round-robin has started and the picture is a set of samples that have been circulated across the full consortium to test and analyse the data and to examine our protocols for standardization purposes. CHARISMA round robin samples for the assessment and harmonisation of Raman spectroscopic systems. Contained within each box are:

- Four samples of silicon, which is commonly used for laser zeroing in Raman.
- Two samples of calcite, which is used to assess the resolution of a Raman spectrometer as per ASTM E2529.
- One sample of polystyrene, which is a Raman standard material for ASTM E1840.

Events attended

- Safe by Design of nanomaterials in industrial production processes
- 17th Confocal Raman Imaging Symposium

More project updates can be found on www.h2o2ocharisma.eu and you can follow us on Twitter @h2o2ocharisma

NanoSafe: Improving technification, safe production and use of nanomaterials in the stone sector

Ioannis Xiarchos
NTUA



Prof. Costas Charitidis, director of RNano Lab at the National Technical University of Athens, is participating in the Erasmus + project entitled: "NanoSafe: Improving technification, safe production and use of nanomaterials in the stone sector", which is coordinated by Deutscher Naturwerkstein-Verband e.V. (DNV). The main objective of the NanoSafe project is to develop an innovative training tool, through the elaboration of multimedia material based on a guide of the best manufacturing and handling practices of nanomaterials, aimed at training and qualifying professionals in the stone sector from an integrated approach to workers' health and environmental safety. This two-year project is part of the Erasmus + program, in the key action "Strategic partnerships for education and vocational training, innovation." (Starting date: 1 November 2020)

The international consortium of the NanoSafe project comprises:

- Deutscher Naturwerkstein-Verband e.V. (DNV). GERMANY www.natursteinverband.de
- Bildungszentren des Baugewerbes e.V. (BZB). GERMANY www.bzb.de
- Asociación Empresarial de Investigación Centro Tecnológico del Mármol, Piedra y Materiales (CTM). SPAIN www.ctmarmol.es
- Scuola Edile CPT- Centro per la Formazione e la Sicurezza Edile di Padova. ITALY www.scuolaedilepadova.net
- National Technical University of Athens (NTUA). GREECE www.ntua.gr
- Delta Materials and Innovation Solutions. GREECE www.delta-ms.gr

Updates from the NMBP-13 Projects



Blueprint for the Nanotechnology Risk Governance Council

An unprecedented collaborative effort of members of the three projects is culminating in the final stages of production of the Blueprint for the Nanotechnology Risk Governance Council.

This Blueprint is a planning document which presents a possible design and role for a new organisation that would be tasked with governing risks from nano-based products, a Nanotechnology Risk Governance Council (NRGC). It has been developed in a co-creation approach with key stakeholders and represents the current view of how such a council could be organised.

What can be the added value of a Nanotechnology Risk Governance Council (NRGC)? What challenges and opportunities should it address? What should its mission be and what goals should it pursue? What activities should it conduct, and how should the Council be organised? The answers to these questions form the building blocks of this document, which describes the goals that the Council could aim at, and why, and the activities and services it could offer.

Its main purpose is to provide a framework to test elements of the council design and further engage with key stakeholders in regulation, industry and NGOs to collect their feedback as possible members of the NRGC. This process will be used to refine the design of the NRGC prior to a possible launch in 2022. The projects are now moving to (a) testing it, (b) refining it, (c) identifying possible members, (d) establishing conditions for its sustainability, (e) launching it and, finally, (f) accompanying it through the first months of activities.



Any representative from regulation, industry and NGOs who is interested in contributing to the NRGC is invited to contact us and [join the stakeholder database here](#), indicating specific interest in the NRGC.

Acknowledgements:

[Marie-Valentine Florin](#),
EPFL

Authors: NMBP-13 Council Task Force: Rob Aitken, Dalila Antunes, Arto Säämänen, Marie-Valentine Florin, Monique Groenewold, Panagiotis Isigonis, Andrea Porcari, Janeck Scott-Fordsmand, Tommaso Serchi.

Cntd →

Cntd → Updates from the NMBP-13 Projects

The Nano Risk Governance Framework: Adapting the International Risk Governance Center Approach

It has been widely acknowledged that the risk governance of nanotechnology should be based on a clear understanding of risk, its management practices, and the societal risk perception by all stakeholders. The Risk Governance Framework of the International Risk Governance Center (IRGC) describes processes aiming to provide and structure scientific evidence about a risk in a societal context. The NANORIGO, RiskGONE and GOV4NANO projects consider this framework along with the ISO 21505 and ISO 31000 standards modified in caLIBRAtE to fit nanotechnology, its products and contiguous frameworks.

The NRGF provides guidance for early identification, assessment, management and communication of risks, involving multiple stakeholders, considering the social impacts of the various uses of nanoproducts, and coupling risk benefit assessment. It integrates selected methods, tools and best practices that can improve or complement existing practices for safety and risk management.

Stakeholder needs, as continuously identified, are incorporated in the NRGF to enable tailored development for multiple stakeholder groups. The NRGF comprises interlinked steps and cross-cutting core functions and serves as the integrator of important concepts and principles, tools and illustrations. The framework will provide web-based solutions that include the use of FAIR data to facilitate its interactive and flexible use.

Acknowledgements:

Arto Säämänen^a, Marie-Valentine Florin^b, Francisco Huertas^c, Arantxa Ballesteros^c, Piet Sellke^d, Anna-Kaisa Viitanen^a, Panagiotis Isigoni^e, Nils Bohmer^f, Dalila Antunes^g, Keld Alstrup Jensen^h

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For more information:



www.gov4nano.eu/



www.nanorigo.eu



<https://riskgone.eu/>



These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814425, 814401 and 814530

Cntd →

Cntd → The NMBP-13 Projects

Update from the Data Management Core Group

The data management core group has members from each of the three NMBP-13 projects, and is delivering:



Together the three projects are covering the whole data management area for risk governance of nanomaterials.

Ongoing Activities:

- **Alignment of the data management plans of the three projects**
- **Glossary of key terms related to data management**
 - "Living document" to support needs of all Core groups & projects
- **Prioritisation of databases to make interoperable**
 - Inventory of databases – content / maintenance / API access etc.
 - Inventory of data uses (by NRGCC)
 - Analysis and synthesis of priority list in progress
 - Alignment with NRGCC Core needs & Cloud Platform Core architecture
- **Agreed access and criteria for curating and verifying / validating older project datasets**
 - Paper in preparation on optimisation and automation of workflows
 - for evaluation of dataset quality, completeness and fitness of purpose
 - for re-use by diverse end-users and stakeholders
 - contributors from NANORIGO, Gov4nano, RiskGone and NanoCommons

Acknowledgements:

Martine Bakker, Damjana Drobne, Nina Jeliakova, Iseult Lynch, Janeck Scott-Fordsmand, Egon Willighagen

Survey on the perception of nanomaterials Risks of nanomaterials and nanotechnology

How do you feel about nanotechnology? How much do you know about nanoproducts?

We aim to understand people's attitudes towards nanotechnology and nanoproducts and their risks in this survey developed by the three NMBP-13 projects, [Gov4Nano](#), [NANORIGO](#) and [RiskGONE](#).

The answers provided in this survey are completely anonymous and will only be used for the purpose described above. The survey is available in 12 European languages. Feel free to share it with your contacts and friends!

<https://survey.nilu.no/index.php/538883>



CUSP releases its first newsletter and brochure

The European research cluster to understand the health impacts of micro- and nanoplastics (MNPs).

It has been 6 months since the kick-off meeting launching our exciting project, and CUSP has now laid the ground for starting its research.

The [first issue of the CUSP newsletter](#) has now been published. This issue introduces readers to the CUSP consortium and provides insights into the roles of the six collaborative working groups established to understand the best ways to share and compare scientific results across the five research projects. It also announces a series of new calls for scientific papers related to micro- and nanoplastics as well as the upcoming general CUSP meeting in June 2022. A more personal aspect of the CUSP newsletters is the included profiles introducing some of the many talented researchers working within the consortium's projects. In this first issue, the newsletter gives a voice to four researchers working hard to help answer some of the challenging questions being posed by CUSP projects.

All stakeholders are invited to [subscribe to the CUSP mailing list](#) to receive the latest updates from across the research consortium directly in their inbox.

Be sure to also subscribe directly to any of the newsletters sent out by the individual CUSP projects that most align with your interests!

[Read more](#) about communications being led by the individual projects.

[Click here to download this first issue of the newsletter.](#)



About CUSP

Funded by the European Union, we are a multidisciplinary team of scientists, industry and policymakers collaborating in research on the complex relationship between micro- and nanoplastics (MNPs) and human health, from early life to adulthood.

Micro and nanoplastics inside our body

Micro- and nanoplastics (MNPs) are out in the environment and part of our everyday life. They find their way into our body through the food we eat, the water we drink and the air we breathe, yet we currently do not know how they might be affecting human health. These small plastic particles emanate from the degradation of larger plastic items, or are intentionally manufactured and added to commercial products such as cosmetics, synthetic textiles or paints. Pollutants, such as heavy metals, allergens, toxicants, and microorganisms, can latch on to them and may further

From Science to Policy

The European Union is spearheading efforts in research on MNPs

CUSP research results will contribute to the health-relevant aims of the European Strategy for Plastics in a Circular Economy and the Bioeconomy Strategy, as well as the REACH restrictions on intentionally added MNPs to products, by providing new evidence for better preventive policies.



Cosmetics: Too many ingredients of concern

WecF Reports

BB creams, concealers, mascaras

Be cautious, especially during pregnancy

After previous reports on baby cosmetics and sunscreens for children, WecF France, a partner in the NANORIGO Project, reveals the results of a survey of cosmetic products.

We made an expert study of the labels 47 make-up products: 17 BB creams, 15 concealers and 15 mascaras, whose use has not decreased during the Covid-19 pandemic.

Many women use make-up products and cosmetics daily, including during or when envisaging pregnancy. They are part of everyday consumer products which may contribute to the exposure of pregnant women and the unborn child to chemicals of concern for human health, such as potential endocrine disruptors.

Our survey

In May 2021, we selected and purchased 47 cosmetic products, sold in supermarkets, perfume stores, drug stores and organic shops. We screened the lists of ingredients on the packaging or available online, to list and identify ingredients of concern based on the most recent scientific literature: endocrine disruptors, nanoparticles, allergens, substances hazardous for ecosystems, etc.

Main results of our survey

- We identified 37 substances of concern in the 47 products of our survey. Among these 37 substances, we classified 13 as of very high concern (RED), 9 as of high concern (ORANGE) and 15 as of moderate concern (YELLOW). 7 are endocrine disruptors of very high concern.
- BB creams are the product category containing the highest number of substances of concern. Of the 17 BB creams of our survey, 10 contain at least 4 substances of very high concern. 3 BB creams contain a minimum of 12 substances of concern.
- 3 of the 15 concealers of our survey contain at least 4 substances of very high concern.
- Mascaras are the category with the lowest number of substances of concern: none contains more than 3 substances of very high concern.
- 11 products of our survey contain no plastic ingredients, 8 of them are organic products.
- Cosmetic products with organic labels are globally of better quality, with the main concerns being the use of titanium dioxide (in BB creams) and fragrance allergens of moderate concern.

Our main demands

- Ban ingredients which we classified of very high concern from cosmetics, including the endocrine disruptors benzyl salicylate, BHT, butylphenyl methylpropional, ethylhexyl methoxycinnamate, ethylparaben, methylparaben and octocrylene.
- Establish a pictogram, similar to the one displayed on alcohol, to warn pregnant women of the presence in cosmetics of ingredients suspected of being of concern for human health, in particular endocrine disruptors.
- Strengthen research work of the French risk assessment agencies ANSM and ANSES to identify the risks linked to the use of cosmetics containing ingredients of concern, especially for pregnant women.
- Ensure that all ingredients listed on cosmetic products are readable and understandable for consumers

Full report

[Available here](#)

Press contacts

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Elisabeth Ruffinengo, Advocacy Manager: elisabeth.ruffinengo@wecf.org





Introducing NANOKEY Advanced

[Fabio Boccuni](#)

Italian Workers' Compensation Authority (INAIL)

The Italian Workers' Compensation Authority (INAIL) has founded the project "Nano and Key enabling technologies: Advanced smart innovations and health and safety in the workplace" (2021-2022). The project was developed by INAIL in cooperation with the Italian Institute of Technology (IIT).



The main aims of the project are:

- i) improvement of risk analysis methodologies and tools in workplaces in which new nanomaterials and smart emerging materials are introduced
- ii) development and testing of the "Prevention-through-Design" (PtD) approach in advanced technological contexts
- iii) development of smart technologies for the detection of contamination in the workplace.

Application of such framework in the contexts of research and industrial scale up of nanomaterials and smart emerging materials may have a relevant impact in terms of responsible development and policy actions.

[More information](#)

Empowering SMEs to accelerate market access of nano-enabled biomaterials

[Nathalie Barges](#)

Project Manager

Greenovate! Europe EEIG



Four Open Innovation Test Beds (OITBs) presented their services and solutions for SMEs to scale up their biomaterials and reduce technological risks.

Titled "Empowering SMEs to accelerate market access of nano-enabled biomaterials", the event took place on Wednesday 20 October.

The workshop was organised by four OITBs that are developing open innovation ecosystems for nano-enabled biomaterials: INN-PRESSME; BIOMAC; BIOMAT; BIONANOPOLYS. The event brought together OITBs, SMEs, industry associations, clusters, universities, and research centres, with the aim of raising awareness of the OITB services for customers and SMEs with their own ideas and materials to be scaled up by the OITBs. Participants discovered practical solutions and opportunities provided by four OITBs, funded under the Horizon 2020 programme, for key sectors such as packaging, automotive, energy, construction, and consumer goods. They also had opportunities to discuss how to scale up biomaterials and mobilise the industry for a clean and circular economy.

Speakers:

Dr Ulla Forsström, VTT Technical Research Centre of Finland, coordinator of [INN-PRESSME](#)

Prof. Dimitrios Bikiaris, Aristotle University of Thessaloniki, coordinator of [BIOMAC](#)

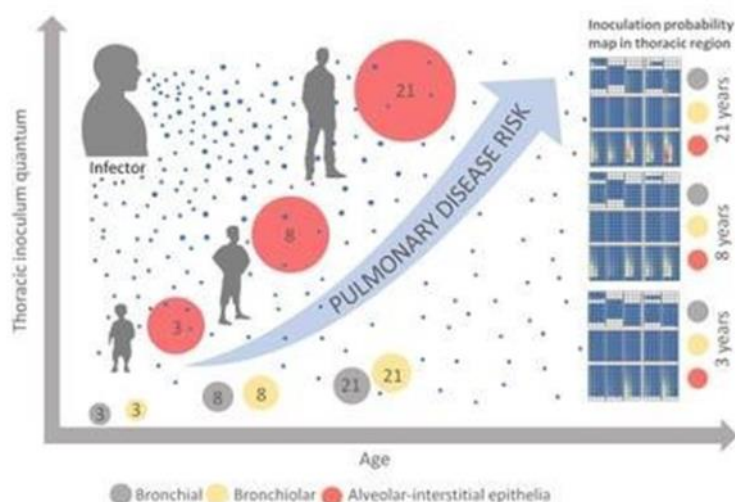
Juliana Oliveira, Centre for Nanotechnology and Smart Materials, coordinator of [BIOMAT](#)

Maria Jorda Beneyto, Centro Tecnológico ITENE, coordinator of [BIONANOPOLYS](#)

PLUS publishes COVID-19 inoculation study

Children's Privilege in COVID-19: The Protective Role of the Juvenile Lung Morphometry and Ventilatory Pattern on Airborne SARS-CoV-2 Transmission to Respiratory Epithelial Barriers and Disease Severity

NANORIGO and NanoCommons partner Paris Lodron University of Salzburg (PLUS) are proud to announce the publication of a second study concerning COVID-19. Here they investigated SARS-CoV-2 virion inoculation in the lung of different age groups, using juvenile lung morphometry data of children in the age of three years and eight years. The SARS-CoV-2 inoculation potential of both age groups were compared with a young adult. Evidence was found that children are intrinsically protected to SARS-CoV-2 transmission by virion-laden aerosols, when compared to the young adult, an important finding in the context of the ongoing politically laden discussion of children's role in SARS-CoV-2 transmission in kindergartens and primary schools. In this study methods and tools for Nano Risk Governance were applied. These form part of NANORIGO's tool collection, hence repurposing NANORIGO Risk Governance Tools (MPPD) in the context of the emerging public health thread COVID-19.



Paper: <https://doi.org/10.3390/biomedicines9101414> Raw data: <https://doi.org/10.5281/zenodo.5543676>.

This work was supported by the Allergy-Cancer-BioNano (ACBN) Research Center of the Paris Lodron University of Salzburg (PLUS) and in parts by the EU H2020 projects NanoRigo and NanoCommons (grant numbers 814530 and 731032, respectively).

Towards FAIR Nanosafety Data

[Dr. Speranta Tanasescu](#)

Head of the Laboratory of Chemical Thermodynamics
Institute of Physical Chemistry "Ilie Murgulescu", Bucharest, ROMANIA

This paper has recently been published in Nature Nanotechnology (Impact factor 39.213), a publication devoted to the nanosafety area, with a further impact on the assessment of nanomaterials used in nanomedicine:

"Towards FAIR Nanosafety Data". Nina Jeliaskova, Margarita D. Apostolova, Cristina Andreoli, Flavia Barone, Andrew Barrick, Chiara Battistelli, Cecilia Bossa, Alina Botea-Petcu, Amélie Châtel, Isabella De Angelis, Maria Dusinska, Naouale El Yamani, Daniela Gheorghe, Anna Giusti, Paloma Gómez-Fernández, Roland Grafström, Maciej Gromelski, Nicklas Raun Jacobsen, Vedrin Jeliaskov, Keld Alstrup Jensen, Nikolay Kochev, Pekka Kohonen, Nicolas Manier, Espen Mariussen, Agnieszka Mech, José María Navas, Vesselina Paskaleva, Aurica Precupas, Tomasz Puzyn, Kirsten Rasmussen, Peter Ritchie, Isabel Rodríguez Llopis, Elise Rundén-Pran, Romica Sandu, Neeraj Shandilya, Speranta Tanasescu, Andrea Haase and Penny Nymark, *Nature NanoTechnology* (2021) 16, 644 - 654. doi.org/10.1038/s41565-021-00911-6

Abstract

Nanotechnology is a key enabling technology with billions of euros in global investment from public funding, which include large collaborative projects that have investigated environmental and health safety aspects of nanomaterials, but the reuse of accumulated data is clearly lagging behind. Here we summarize challenges and provide recommendations for the efficient reuse of nanosafety data, in line with the recently established FAIR (findable, accessible, interoperable and reusable) guiding principles. We describe the FAIR-aligned Nanosafety Data Interface, with an aggregated findability, accessibility and interoperability across physicochemical, bio-nano interaction, human toxicity, omics, ecotoxicological and exposure data. Overall, we illustrate a much-needed path towards standards for the optimized use of existing data, which avoids duplication of efforts, and provides a multitude of options to promote safe and sustainable nanotechnology.

Wood, the raw material of the future?

[Katja Nau](#)

Karlsruhe Institute of Technology



DaNa4.0 draws attention to a new scientific paper with a special topic every month.

In September, the topic was: **Wood, the raw material of the future?**

Read our spotlights in the section on [nanopartikel.info](https://nanopartikel.info/en/research/spotlight-research/) : <https://nanopartikel.info/en/research/spotlight-research/>

One of the greatest challenges facing humanity is to produce clean drinking water under the given circumstances of global warming, population growth and increasing littering. In September, we would like to present a review article that believes one approach to solve this problem is the use of nanoscale wood. In the review, "Advanced Nanowood Materials for the Water-Energy Nexus," published in the journal Advanced Materials, methods for using wood for water treatment are outlined based on the structure of wood, bottom up or top down. Using the approaches described, wood can be used for water purification, desalination, or chemical removal.

Many examples are shown of how the basic building block of wood, cellulose (a natural polymer), can be processed into nanofibers or polymer matrices, enabling filtration of ultra-small particles.

In contrast, top-down approaches preserve the fundamental structure of wood. For example, naturally occurring channels and mesopores open up the possibility of binding chemicals or applying catalysts. Research with palladium, titanium dioxide, or iron oxide nanoparticles applied to wood showed very good separation of chemicals from water. By chemically modified wood, it was possible to selectively remove copper ions, separate oils and organic solvents, or filter out heavy metals from water.

Wood is an indispensable, climate-neutral raw material due to its ability to bind CO₂. In combination with nanoparticles, it may be possible in the future to extend the versatile properties of wood and thus provide a solution approach to water scarcity and environmental pollution.

Original publication:

Chen, X. et al (2021) Advanced Nanowood Materials for the Water–Energy Nexus. Advanced Materials, 33(28), 2001240. doi.org/10.1002/adma.202001240

NSC and Nano Risk Governance Publications on Zenodo

Did you know that many more Open Access NanoSafety Cluster and Nano Risk Governance publications can be found on Zenodo?

You can also upload any relevant items to these communities. These include papers, training materials, newsletters, videos, briefings, policies, reports and so on. This platform will give visibility and provide access to your output beyond the lifespan of your projects to help inform ongoing and future research, training and other activities.

- [Zenodo Nano Safety Cluster Community](#)
- [Zenodo Nano Risk Governance Community](#)



Governança do riscos da nanotecnologia e nanomateriais

Forthcoming workshop—conducted in Portuguese: 27th October 2021

This forthcoming workshop focuses on the fact that emerging technologies and materials pose multiple challenges: new environmental, public health and safety issues may arise with the development of nanomaterials. It asks: 'What is being done to create more transparent frameworks for the development, application and disposal of manufactured nanomaterials?' The NMBP-13 projects, Gov4Nano, NANORIGO and RiskGONE, will focus on these issues with audiences to discuss how we can *better* govern production and use.

Regardless of what you already know about nanotechnologies and international regulatory mechanisms, find out more about the governance of nanomaterials and share your point of view.

The go-minute online workshop will be joined by nanotechnology experts involved in these three projects, who will address a potential model for a Risk Governance Board and how to implement it.

Acknowledgements and further information: [Tedora Aibu](#), [Paula Silva](#) and [Dalila Antunes](#)

[Governança de riscos: Nanotecnologia e nanomateriais – NANORIGO](#)



NanoCommons Interactive Workshop:

If you want to go far go together

Collaborative research supported by NanoCommons transnational access

NanoCommons would like to listen to your goals and approaches. To understand how this could be best achieved, [please register here](#) for the [open virtual workshop](#) on November 9th (10:00 – 13:00h CET).



The H2020 research e-infrastructure project [NanoCommons](#) is fostering [collaborative research](#) by trying to bring the nanosafety community together to work hands-on on the [establishment of ways to make data and software platforms, developed in the different projects, to talk to each other](#). In order to give this a major push, we are now organising a workshop where, first, different organisations, that have already applied for Transnational Access projects with NanoCommons, will report about their experiences. This will be followed by presentations on how the learnings from these projects resulted in collaboration and interoperability concepts, which could be extended to span across different tools and platforms, and on the upcoming training activities of NanoCommons and other possible follow-ups to this workshop.

This workshop will showcase [how NanoCommons could support all of you, individually and as a group](#), as independent data harmoniser, platform harmoniser (e.g. through joint APIs, containerisation solutions, etc.) and overall data/metadata consultant not creating new tools or replacing existing solutions but to bring all these closer together so that they can be combined into integrated workflows. This could be based on common metadata and data standards, linking of data warehouses, workflow tools (KNIME, Jupyter) and deployment options to combine different services with complementary features. This could also be supplemented by ways of collaborative dissemination of the results from the projects and knowledge sharing like common service catalogues, training and knowledge platforms and the shared usage of applications like electronic lab notebooks. These are just some first thought-starters but of course we are open to hearing your needs and even more important things you could / would like to bring in.

Total NanoSafe Hybrid Conference From Molecules to Public Health

martin.himly@plus.ac.at

The 'Total-Nanosafe' Hybrid Conference is bringing experts in different fields related to the use of nanomaterials, nanotechnology and how these are related to different aspects of safety, regarding health and environment.



Date: Nov 11 & Nov 12, 2021

Submit Your Abstract:

The deadline for submitting your abstract to the event TOTAL - NANOSAFE: From Molecules to Public Health is approaching! You have until **October 26th** to send it to us and take an active part in this International Conference.

Show us your work in nanomaterials, nanotechnology and how these are related to different aspects of safety, regarding health and the environment, specifically in these topics:

- Nanomaterials Toxicity
- Cells and Organs on Chip
- Cheminformatics and in Silico Tools
- Epigenetics

List of speakers:

Day One (November 11th)

Keynote Speaker: Flemming Cassee

Session 1: Toxicological assessment of Nanomaterials:

Martin Himly
Peter Hoet
Hanna Karlsson
Vania Vilas-Boas

Lunch Break

Keynote talk: Peter Loskill

Session 2: Complex cell culture and organ-on-chip

Arno Gutleb
Nina Hobi or Janick Stucki
Lorena Dieguez
Liliana Teixeira
Ana Ribeiro

Day Two (November 12th)

Keynote Speaker: Jose Luís Medina Franco

Session 3: Cheminformatics and in silico tools

Andrey Toropov
Timothy E H Allen
Eli Fernández de Gortari

Lunch Break

Session 4: From molecules to public health

Begoña Espiña
Basak Engin
Manosij Ghosh
Paulina Damdimopoulou
Tim Nawrot
Nivedita Chatterjee

<https://www.sinfoniaproject.com/events>

NanoPAT Workshop

NanoPAT is organising an interactive workshop on **November 15th (13:00 – 16:00h CEST)** on the three characterisation technologies that are being developed in the project: **Photon Density Wave Spectroscopy (PDW)**, **OptoFluidic Force Induction (OF2i)** and **Turbidity Spectrometry (TUS)**.

Draft workshop agenda:

Introduction to NanoPAT [15min]

Training session on NanoPAT Process Analytical Technologies:

- PDW [25 min Training + 25 min discussion and interactive session]
- OF2i [25 min Training + 25 min discussion and interactive session]
- TUS [25 min Technology presentation + 15 min Q&A session]

Registration here: <https://dechema.converia.de/frontend/index.php?sub=539>

More information: <https://dechema.de/europact2021.html>



NANOPAT:

SweNanoSafe Workshop

Safe and Sustainable by Design:

A prerequisite for achieving a circular economy

Save-the-date:

November 29th, 2021 | **Location—online**
(A detailed program will be sent in late October)

SweNanoSafe



[Register now!](#)

Confirmed speakers:

- Dr. Andrea Haase,
Head of the Unit Fibre and Nanotoxicology, Department of Chemical and Product Safety, German Federal Institute for Risk Assessment (BfR)
- Dr. Lya Hernandez-Soeteman,
Senior risk assessor, Dutch National Institute for Public Health and the Environment (RIVM), and Lead expert in the OECD Working Party on Manufactured Nanomaterials Safe Innovation Approach Steering Group
- Dr. Xenia Trier,
Expert on Chemicals, Environment and Human Health at European Environment Agency (EEA)
- Dr. Mar Gonzalez,
Secretariat to the WPMN, Environment Directorate, Organization for Economic Cooperation and Development (OECD)

Safe and Sustainable by Design (SSbD) is based on the consideration and minimization of uncertainties and risks to human health and the environment from an early stage of the innovation process and throughout the lifecycle of the innovation product.

The concept of SSbD stems from the development of safe-by-design approaches within the nanosafety field (e.g. in projects such as NANoREG and ProSafe), and is a component of the Safe(r) Innovation Approach (SIA) for more sustainable nanomaterials and nano-enabled products, which was recently described in detail by the Organization for Economic Cooperation and Development (OECD).

This workshop aims to orient Swedish authorities in the ongoing development and implementation of the SSbD concept to face regulatory challenges related to nano- (and advanced) materials with the purpose of advancing circular economy.

Please find further information on the SweNanoSafe [website](#).

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National platform for nanosafety
SweNanoSafe
IMM | Karolinska Institutet
www.swenanosafe.se | ki.se



The EU NanoSafety Cluster maximises the synergies between European-level projects addressing the safety of materials and technologies enabled by the use of nanoparticles. The studied aspects include toxicology, ecotoxicology, exposure assessment, mechanisms of interaction, risk assessment and standardisation.

The Cluster is an initiative of the European Commission Directorate-General for Research and Innovation (DG RTD), which sponsors these large projects. Overall, Europe targets safe and sustainable nanomaterials and nanotechnology innovations. Cluster projects contribute to assuring environmental health and safety (EHS) of this Key Enabling Technology.

The Cluster also is an open platform for dialogue and exchange. Researchers, regulators, administrators, industry, civil society representatives and the general public are welcome to engage.

If you have an interest in EHS and nanotechnology, you are very welcome to participate in NSC activities whether or not you are a partner in formal European projects.

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www.nanosafetycluster.eu