NanoSafety Cluster NewsLetter

www.nanosafetycluster.eu Issue 26: May 2022

Welcome

Welcome to the second NSC Newsletter of 2022 and thank you so much once again to everyone who contributed.

In the previous issue we published the closing proceedings of the completed BIORIMA Project. Following a report from NSC Working Group C on the Launch of the HotSpotScan (HSS) for Substance Emissions, this issue now introduces you to the 'new kids on the block'—the LIFENANOHEALTH (Reducing nanoparticle exposures in industrial workplaces), and CHALLENGES (Real-time nano-CHAracterization reLatEd technologies) Projects, which have joined the NSC community. We look forward to their news and activities as they develop. We follow this with news from a number of the NSC projects which have shared their latest news, as well as links to their newsletters and videos where you can find out more. In subsequent new, find out how NanoHarmony and NANOMET have joined forces to launch a joint workshop on test guidelines at the OECD. We then hear from the LightMe initiative and the role of ISQ in assessing the exposure and risks to workers handing nms during manufacturing. This is followed by updates from our NMBP projects, including Sunshine, News from SUNSHINE, SbD4Nano, Gracious, CHARISMA, NanoExplore, SABYDOMA and HARMLESS.

In the Publications section we highlight the NanoImpact Special Issue which addresses Safe(r) by Design in the Nanotechnology Sector, offering a comprehensive view of the developments made in SbD in the nanotechnology sector by the EC H2020 NanoReg2 and other projects.

This issue benefits from a focus on NanoPathology, which examines the importance of this niche area, especially in the current turbulent times, and offers links to further research into possible exposure and disease. We follow this with updates from the CUSP (European research cluster to understand the health impacts of micro- and nanoplastics) projects, including details of a one-stop shop for information about mnp initiatives.

Our busy Events section closes the newsletter with announcements of imminent workshops and training events happening this month and the next.

We hope you find this issue of interest – and thank you everyone for your continued support of the NSC Newsletter. Keep your articles coming and have a wonderful Spring/Summer.

Take care and stay safe
Best wishes
Lesley Tobin
news@nanosafetycluster.eu

WG Dissemination

Contents

The next NSC Newsletter will be issued at the end of July

Please send in your news, project updates, opinions, events, publications, resources, jobs and opportunities by 15th July 2022

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

News from the NSC Coordination Team

Spring is most definitely in the air, and along with it comes the anticipation of longer, warmer days and outdoor (out of the office!) activities. So, what better excuse to start this news item with a reminder of the upcoming opportunity to meet face to face (at last!) in beautiful Cyprus for this year's NSC-community highlight, the **Nanoweek**? We couldn't resist sending one final reminder: **there is still time to submit a poster abstract** – there it is! And of course the NSC itself will also get to gather in a dedicated event.

Another spring regeneration for our community comes from the newly awarded Horizon Europe projects that will soon start trickling into existence. We would like to take this opportunity to remind those of you participating in any such new projects to please bring them to our NSC family so that we are able to support and share useful data with them! We are all aware that Horizon Europe is a very different framework programme, compared to what we knew before. The "de-focus" from nano, replaced by more broad ranging material science priorities, is nicely balanced by increased focus on "safe and sustainable by design", a theme that our community has already started providing scientific underpinning. In this arena, NSC has the opportunity to fine-tune its purpose and priorities, in response to the emerging new challenges and drivers.

One of our community's core assets and strengths has been our ability to work together, as shown nicely in the NSC's Working Groups. Within WGs, in the earlier years, the goal was to develop from scratch methods and tools to answer scientific questions. Nowadays the needs are coming from society, formulated into calls by the EC. In the past few years, the NSC-CT has focused much effort into connecting the scientific engine "NSC" with communities, where there is an increasing demand for SSbD-relevant methods and tools, in order to answer safety and/or sustainability related questions for their applications.

The EC, through Horizon Europe, is calling for SSbD-implementation, which is the ideal opportunity for the NSC-community to further mature what has already started as developed methods, contributing to fundamental scientific work that is urgently needed to gain reliable data for the implementation of the emerging S(S)bD tools.

We do, therefore, hope that many of the new Horizon Europe projects will find NSC as their natural home and an inspiring environment to join as part of a multidisciplinary community working together. And we count on each and every one of you to motivate, support and guide these new projects on their way to join the NSC.

Along the above mentioned intention to connect with other communities, we have got the opportunity to collaborate with the materials as well as the chemicals communities, both playing crucial roles in the shaping of the SSbD ecosystem. In this context, the NSC-CT joined a consortium which developed the project **IRISS** (The InteRnatIonal ecosystem for accelerating the transition to Safe-and-Sustainable-by-design materials, products and processes), in response to HORIZON-CL4-2021-RESILIENCE-01-08, which is envisaged to start soon. We will share more information about IRISS during the Nanoweek's NSC-steering group meeting (June 22nd, 5-6:30p.m. CEST).

Finally, it would be impossible to close this news item without a mention of Ukraine. It is with great sadness that we see events unfolding there, worse than anyone would have ever contemplated, even a couple of months ago. As a scientific community, we call for peace, stand by all those affected by the war and pledge to be there for our science sisters and brothers when they need us.

We wish you all a pleasant spring and early summer and hope to see you in Cyprus.

Éva Valsami-Jones, Flemming Cassee, and Andreas Falk

CT@nanosafetycluster.eu

News from the NSC Working Groups:

Launch of the HotSpotScan (HSS) for Substance Emissions

Wouter Fransman—TNO
Working Group C – Exposure and Hazard Assessment

Estimating the emissions of and exposure to hazardous substances over the life cycle of a product can be a tedious and difficult task. The HotSpotScan greatly eases this process and provides the user with data in REACH. By answering relatively simple questions, the user can build the product's life cycle and select the appropriate emissions data. The result is a flow chart showing the environmental emissions and workers' exposure.

Product life cycle

The HotSpotScan (HSS) helps the user build a product's life cycle with different phases such as substance production, formulation, use, service life, and end-of-life. By answering questions on the substance and process properties, the user is presented with the relevant release factors as used in EUSES (European Union System for the Evaluation of Substances, the tool for estimating emissions in REACH dossiers). These release factors predict emissions into the environment and indoor exposure.

Release factors

Furthermore, release factors from specific environmental release categories (spERCs) provided by industries have also been integrated into the tool. The user can overrule these factors and provide their own values for them. Initially developed as part of the FutureNanoNeeds FP7 project, HSS has been further developed during peroCUBE, a Horizon 2020 project focusing on the development of perovskite devices.

Broad range of application industry categories

HSS can be used for a broad range of applications. The tool covers several industry categories, including Adhesives and Sealants, Construction Chemicals, Electrical/Electronic Industry, Solvents and more. After selecting one of these categories, you can build your product's life cycle phase by phase. The tool by default uses a reference amount of 1,000 kg of any substance for the product when in use.

The HotSpotScan designed to identify potential emissions of and exposure to hazardous substances is now available at https://diamonds.tno.nl/#hotspotscan
https://www.tno.nl/en/about-tno/news/2022/3/launch-of-the-hotspotscan-hss-for-substance-emissions

Did you know....
...you can receive updates from the Working Groups directly to your inbox:

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

Introducing LIFE NANOHEALTH:
Reducing nanoparticle exposures in industrial workplaces

LIFE NANOHEALTH
LIFE20 ENV/ES/000187

Mar Viana—CSIC

What is LIFE NANOHEALTH?

Assessment of exposures to nanomaterials in industrial workplaces is a widespread challenge because of the diversity of nanoparticle (NP) sources, which include manufactured nanomaterials (MNM) and incidental nanoparticles (INP).

LIFE NANOHEALTH aims to reduce occupational exposure to INP from critical industrial processes (emitting up to several millions of NP/cm^3) by optimizing the performance of Risk Management Measures (RMM) in indoor exposure scenarios.
In industrial settings, INP can be generated during different high-energy processes such as:

- thermal spray processes (HVOF, plasma, etc),
- firing,
- welding,
- grinding,
- engine combustion,
- plasma and laser cutting, etc.

LIFE NANOHEALTH is a European project funded by the European Commission through the LIFE program.

What solutions does NANOHEALTH offer?

NANOHEALTH TOOL (NHT): a user-friendly decision-support tool will be developed to identify the INP emission hotspots in industrial settings and simulate INP dispersion across industrial plants, to select the most appropriate RMM and quantify the effective reductions in occupational exposure achieved. To design an agile tool, it will be necessary to reach a compromise between input data, model calculation time and accuracy. The NHT tool allows to obtain concentration maps, with an accuracy >60% if general process information is available and >75% if detailed information is available.
INP emission data and effectiveness of RMM to reflect the reality in industrial settings under real-world operating conditions will be improved. These data will populate the emission library for NHT.
NANOHEALTH PURIFIER (NHP): Development of an engineering control measure to enable microenvironments with reduced INP concentrations. To this end, a highly effective prototype capable of removing INP and versatile enough to be easily implemented in industrial environments will be developed. The expected efficiency in the microenvironment (working area) is around 90%.
NANOHEALTH SERVICE (NHS): Design of a service for the control and minimization of INP in industrial settings, which will include guidelines and recommendations for health and safety departments and engineering teams to evaluate occupational exposure to PGNP.

Who benefits from LIFE NANOHEALTH and why?

LIFE NANOHEALTH firstly benefits exposed workers to PGNP
The Risk Management Measures selected will minimise worker exposure by at least 75%.
The NANOHEALTH purifier will achieve an abatement efficiency of INP > 90% in microenvironments covering an area of up to 600 m^2.
LIFE NANOHEALTH also benefits policymakers
The appropriateness of the current Nano Reference Values (NRV) for INP will be benchmark tested in industrial settings under real-world operating conditions.
And LIFE NANOHEALTH also benefits industrial sectors involving high-energy processes, offering solutions to minimize INP concentrations inside industrial plants: NANOHEALTH tool, purifier, and service.

Find out more here

Cntd →

Cntd → Introducing LIFE NANOHEALTH:

Who's who in LIFENANOHEATH?

- Coordinating Beneficiary

Contact: Vicenta Sanfélix

- Associated Beneficiaries

- Research centres

- Private companies

- Risk prevention services

Images: (Left) The LifeNANOHEALTH Kick off meeting and (Below) visit to TM Comas

CHALLENGES Joins the EU NanoSafety Cluster!

Sara Attanà—Warrant Hub s.p.A

Despite the COVID-19 pandemic, the development and growth of the CHALLENGE project haven't stopped, and entry into the NanoSafety Cluster demonstrates the desire of this project to network with other projects and EU initiatives and to achieve all of its objectives.
But what does CHALLENGES do?

Introducing CHALLENGES

The project CHALLENGES (Real-time nano-CHAracterization reLatEd technologies) aims to develop innovative Non-Destructive Techniques (NDTs) for reliable inline multiscale measurements down to the nanoscale, and fully compatible with different factory environments. The developed metrology technologies will enable the increase of speed, resolution, sensitivity, spectral range and compatibility within different nano-related production environments, finally improving products performance, quality and reliability, with the consequent bosting of competitiveness.

The CHALLENGES's innovation will be developed exploiting the plasmonic enhancement of optical signals. It will provide a non-destructive approach based on the use of multipurpose nano-optical techniques to enable a reliable real-time nano-scale characterization in the factory floor, using plasmonic enhanced Raman, InfraRed (IR) and Photoluminescence signals. Laboratory-based characterisation of nanomaterials has been, and continues to be, one of the key enablers in the growth of knowledge and experience on nanotechnology and nano-enabled products. CHALLENGES will extend the scope of nano characterization beyond off-site laboratory based measurements to proper nanometrology, and is expected to have impacts on industrial production of nano-enabled materials and devices starting from the applications targeted within the project, but with impacts potentially able to be propagated to all major nanomanufacturing processes.

CHALLENGES' consortium comprises 14 partners from 7 countries: 5 EU Countries (Belgium, France, Germany, Italy, Spain) and 2 H2020-associated countries (Israel and Belarus). This geographical integration provides a solid foundation to CHALLENGES, and the project's driving force is represented by the industry wish of searching, uncovering, and exploiting new powerful tools for material manufacturing process optimization. The partners cover all the possible areas of interest for the CHALLENGES expertise:

- Materials & Device Production;
- Characterization Facilities and related R&D Activities;
- System integrators & Other manufacturers;
- Modelling, Simulation & Material Design;
- Communities, Associations & Councils.

For more information visit the CHALLENGES website and get involved! *www.challenges2020.eu*

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 861857.

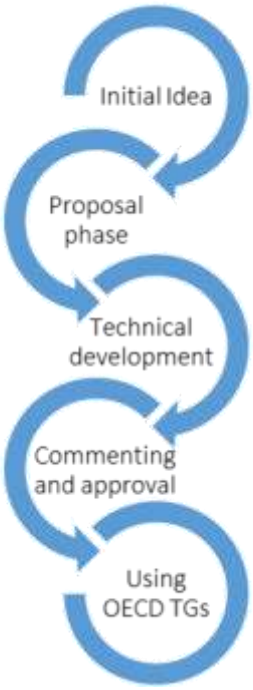
International NanoHarmony & NANOMET Workshop

Nano-related OECD Test Guideline Development

Paris, 29th June– 30th June 2022

Sean Kelly — Nanotechnologies Industry Association
Melanie Müller—BAuA

The NanoHarmony and NANOMET projects will have their first face-to-face joint workshop on OECD Test Guideline (TG) Development for nanomaterials back-to-back with the WPMN at the OECD Conference Centre in Paris.



NanoHarmony aims to facilitate and improve the development process of TGs from the perspective of the developers, users and harmonisation body, and supports development of several nano-related TGs and Guidance Documents (GDs).
NANOMET supports OECD to identify and develop standardised methods for nanomaterials that can be used to generate relevant and reliable data for regulatory purposes.

During the workshop, challenges and best practice approaches for the TG development will be discussed. A special focus will be set on the use of TGs in regulation from an international point of view. NanoHarmony and NANOMET will inform participants about the different steps of the TG development process, potential process improvements and ongoing TG developments for nanomaterials. The open discussions will be used to collect input from stakeholders, both on the OECD process and on current OECD projects towards developments of TGs and GDs.

Places to the workshop are likely to be limited (depending on any local restrictions that may be in force at the time), so registering your interest does not guarantee you a place at the workshop. Delegates will be selected to ensure a balanced representation between countries and stakeholder types.

Register here
The deadline for registration is 27th May 2022. Places will be confirmed on 30th May at the latest.
You can consult the draft agenda here.

NanoHarmony Webinar Series

For those interested in contributing to the development of OECD test guidelines but don't know where to start; and for those already contributing to this process, but wanting to know how to avoid delays in their methods being adopted, the NanoHarmony project has been running a highly successful webinar series.

These events have been covering the journey of a test guideline (TG) through the OECD process to be able to understand the challenges and barriers that need to be addressed at each stage. All stakeholders have been invited to attend to give their opinions and to help agree consensus on the barriers and ways of improving the test guideline process that can be actioned as part of the legacy of the NanoHarmony project.

The webinars have been highly interactive and attendees have had the opportunity of sharing their experiences, thoughts and suggestions.

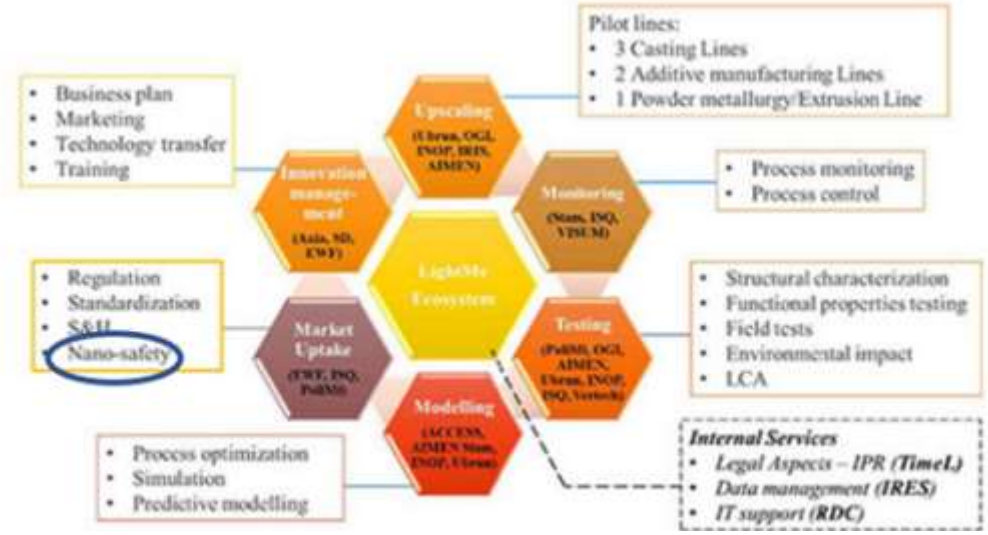
You can catch up with the proceedings of the OECD events held so far this year using these links:

NanoHarmony Improving the OECD Test Guidelines Process: Phase 2, 4 May 2022
NanoHarmony Improving the OECD Test Guidelines Process: Project Proposals, 30 March 2022
NanoHarmony Improving the OECD Test Guidelines Process: Using TGs. 1 March 2022

Nanosafety in Pilot Lines of European LightMe Project

Cristina Matos—ISQ

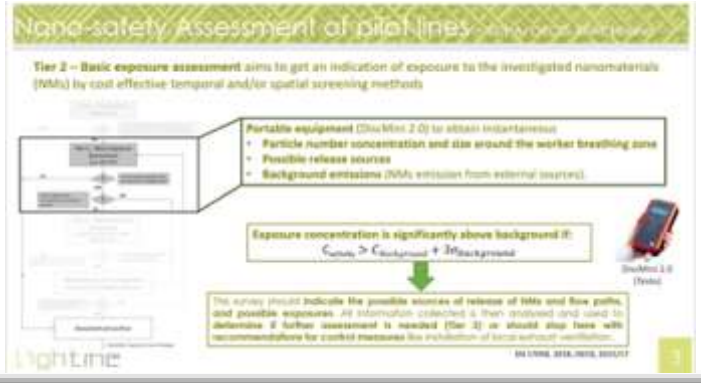
The LightMe project aspires to be a point of reference for boosting innovation in the field of lightweight metal matrix nanocomposites (MMnC) setting up an Open Innovation Ecosystem (test bed) that will boost the introduction of new functionalities, features and capabilities to lightweight metals. The LightMe Ecosystem will provide the necessary infrastructure 6 Pilot Lines – PL (3 Casting lines, 2 additive manufacturing lines and 1 Powder metallurgy/extrusion line) and knowhow for upscaling the new materials concepts related to lightweight MMnC and advance materials, in a cost effective and sustainable way.



ISQ contribution in LightMe project aims to assess the potential exposure and risks concerning the handling of nanomaterials by workers (nano-safety) during the manufacturing process in LightMe pilot lines. Additionally, control measurements are recommended to mitigate the risks identified in each pilot line.

The harmonized tiered approach, which is divided into three tiers, was adopted for a cost-effective risk assessment of LightMe pilot lines following OCDE and European Standards applied in the nanotechnologies field.

The 6 LightMe PL were subjected to an initial risk assessment (Tier 1) gathering information related to nanomaterial hazards and potential exposure, associated with the manufacturing processes, workplaces, and existing local control measures. This data is then used as an input in nano-specific Control Banding tools (ISO/TS 12901-2, 2014, Stoffenmanager -Nano) which enables to obtain hazard and exposure classes. These classes are applied in a control band matrix to obtain control approach recommendations. If the Tier 1 results point to a possible release of nanomaterial during the process a quantitative exposure assessment (Tier 2) will be performed by utilizing particle size-integrating, easy-to-use portable online instrument. At Tier 2, a visit to the PLs is required to carry out this quantitative exposure assessment. This is done firstly with the monitoring of the background (emission of nanomaterials from sources other than the process activities), and then the monitoring of the manufacturing process and associated activities. In-situ monitoring of PL was delayed due to Covid-19 pandemic, but at this moment only one pilot line is remaining to be monitored. Recommendations to control workers exposure were already proposed for the already analysed LightMe PL. Recently ISQ (Cristina Matos) presented the work progress in the 36 months meeting of LightMe project.



News from SUNSHINE

Yasemin Ertuğrul—Yordas GmbH

As an industry-oriented project funded by the European Union's HORIZON 2020 research and innovation programme, SUNSHINE continues to develop, promote and implement safe and sustainable innovation in the field of nanotechnology by developing Safe and Sustainable-by-Design strategies.

The project partners have been enthusiastically working on building these strategies and creating applicable solutions for materials and products incorporating advanced multicomponent nanomaterials.

In its latest newsletter, you will have the opportunity to know more about the focused work that makes the SUNSHINE project, as the saying goes, shine, thanks to its recent accomplishments.

Here are some 'teasers' of the news items that you can find in the latest edition:

Advancing the SUNSHINE Project: First Annual Meeting

On January 31 and February 1 2022, the SUNSHINE project consortium got together online for its first annual meeting in 2022 to discuss the progress of the project and next steps to be taken. The project aims to develop an e-infrastructure able to support the application of the Safe and Sustainable by Design (SSbD) concept.

Next to discussing the progress, critical issues, and interactions of the individual work packages, five workshops were held

Case Studies: Fields of application

How do nanomaterials behave when they are part of a product? This is an important question to assess the toxicity across the lifecycle of a nanomaterial – for example when integrated into cement facing weathering – an issue the SUNSHINE project is addressing in the case study with the CIAC Foundation (Center of Andalusian Innovation for Sustainable Construction). They will contribute to developing safe-by-material-design strategies for photocatalytic metal oxides used in the construction sector.

The case studies cover a broad field of applications of SSbD .

Cntd → News from SUNSHINE

SUNSHINE is the main organiser of the Nanosafety Training School 2022!

Date: May 15-20, 2022
Location: Venice, Italy (map)
Registration Deadline: April 15, 2022
Attendance Fee: Free of charge

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 modelling approaches. For more information and registration, please visit the School's website here.

Involved EU projects:

NMBP-13: Gov4Nano, NANORIGO, RiskGone;
NMBP-15: ASINA, SABYDOMA, SAbyNA, SbD4Nano;
NMBP-35: CHARISMA;
NMBP-14: NanoSolveIT, NanoInformaTIX;
NMBP-16: DIAGONAL, HARMLESS, SUNSHINE;
INFRAIA-2017: NanoCommons.

Workshop: SUNSHINE E-infrastructure for Safe and Sustainable-by-Design of Advanced Multicomponent Nanomaterials

What can an e-infrastructure for safe and sustainable by design nanoforms look like and which features should it provide? On Monday, February 21, experts from the project came together to discuss this question with a targeted group of stakeholders including industry, policymakers and academia.

You can watch the videos from this lively workshop on YouTube below:
Project Introduction Video
Introduction to e-Infrastructure

The summary of the workshop can be found here (PDF).
Also, feel free to visit the page dedicated to an overview of this fruitful event.

Events and Publications

Please visit our website to view all the events our partners participate in.
SUNSHINE partners contribute to the field of scientific research also with their publications. Please see all the SUNSHINE publications here.
Connect with us: SUNSHINE on Twitter: /h2020sunshine | SUNSHINE on LinkedIn: /h2020-sunshine

Project Facts

Project Reference: 952924
Duration: 48 months, start in January 2021
Total Budget: 8M €

Contacts for Press

Dr Stella Stoycheva
Stakeholder Engagement and Dissemination Manager
Yordas Group

Cathrin Cailliau
Dissemination Manager
Yordas Group

SbD4Nano Reports on its Developments

SbD4Nano set out to develop a novel software infrastructure, an "e-infrastructure", to foster dialogue and collaboration between actors along the nanotechnology supply chain. Our project is currently making considerable progress in the case studies necessary to validate this e-infrastructure, and working towards enabling the reduction of hazard and exposure while satisfying functionality for intended uses in the market.

Do you know SbD4Nano also offers e-learning opportunities?
SbD4Nano offers educational videos for everybody who is interested in safe-by-design approaches to nanotechnology. You can watch them by visiting our E-Learning page on our website.
Click here to browse our e-learning videos!

SbD4Nano is one of the projects contributing to the Nanosafety Training School 2022!
Nanosafety Training School has become one of the most expected events in 2022 since its announcement a short time ago. We are proud to inform you that SbD4Nano is among the projects which contribute to the organisation of the School.

Forthcoming Events
SbD4Nano is taking part in various events in the field of safe-by-design research in nanotechnology and supply chains. Check out our events page here to know which events to look to find SbD4Nano partners!

Follow us on social media
SbD4Nano on Twitter: /SBD4Nano
SbD4Nano on LinkedIn: /safe-by-design-for-nano

Project Facts
Project Reference: 862195
Duration: 48 months, start in April 2020
Total Budget: 6M €

Contact for Press
Dr Stella Stoycheva
SbD4Nano Project Communication
Yordas Group

Cathrin Cailliau
Dissemination Manager
Yordas Group

Updates from the Gracious Project

Winner of the Scottish Knowledge Exchange Award

The NanoSafety Research Consortium won the Scottish Knowledge Exchange Award 2022 in the category "Multiparty Collaboration"! The Consortium is made up of our project's lead partner Heriot-Watt University, the partners BASF SE, Institute of Occupational Medicine, Yordas Group as well as the University of Edinburgh.

The award was received "for addressing important gaps in knowledge about nanotechnology including safety testing, influencing the content of national regulations and promoting the responsible and sustainable development of nanotechnology to ensure that the benefits promised by this new technology can be realised safely."
We are very grateful for this recognition of our work and congratulate the other nominees and winners.

Don't miss our final newsletter

GRACIOUS successfully accomplished its project goals and sent out a final newsletter with a lot of detailed information about the project results. You can download the framework and guidance documents instantly through our newsletter, and find out more about a number of scientific, educational and innovative project results that will have a long-term impact in the nanotechnology field. **Read our newsletter here!**

Project Facts
Project Reference: 760840
Duration: 48 months

Contact for Press
Dr Stella Stoycheva
Yordas Group

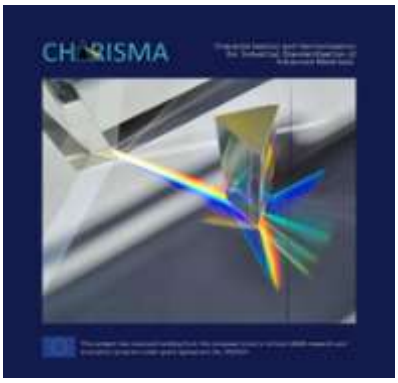
Cathrin Cailliau
Dissemination Manager
Yordas Group

News that's Full of CHARISMA

The CHARISMA Project (Characterisation and Harmonisation for Industrial Standardisation of Advanced Materials) has recently issued its latest project newsletter, with updates on the project's developments.

New brochure and project video

Among its new promotional and dissemination materials are a dynamic new project video, which you can watch here; and a project brochure outlining the scope and key objectives of the CHARISMA Project and to-the-point information about the case studies in relation to the Raman spectroscopy practices.



Live webinar on Raman spectroscopy draws considerable attention.

On March 25, 2022, CHARISMA organised a live webinar on understanding how to ensure good data through Raman practices. The speaker was Dr James Thomson from our project partner ELODIZ Ltd, and he gave an informative presentation on the topic. He also answered the audience's questions in the supervening Q&A session.

CHARISMA is part of the Nanosafety Training School 2022!

CHARISMA is among the projects who organise and support the Nanosafety Training School 2022! The School will take place in Venice between 15-20 May 2022. The attendance is free of charge and registrations will remain open until 15 April 2022.
Click here for more information about the school and the registration process

Would you like to be informed about future CHARISMA webinars, workshops and events?
Follow us on social media: CHARISMA on Twitter: /h2020charisma CHARISMA on LinkedIn: /h2020-charisma
Visit our website to see the forthcoming CHARISMA events.

Have you seen our March 2022 newsletter yet? You can view the March 2022 edition of our newsletter here.
Do not forget to subscribe to our newsletter if you want to know what CHARISMA does while it thrives!

Project Facts

Project Reference: 952921
Duration: 48 months, start in November 2019
Total Budget: 5M €
Project Coordination: CSIS, Spain—Miguel A. Bañares. info@h2020charisma.eu

Contact for Press

Judith Friesl
CHARISMA Dissemination Manager
Yordas Group

Updates from NanoExplore

Judith Friesl—Yordas Group
Cathrin Cailliau

The NanoExplore Project's latest newsletter (March 2022) is now available to download. You will find more about our device, the NanoExploreR, as well as the measurement campaigns that were carried out within the scope of our project. Some articles have been selected and are featured below:

NanoExploreR (Indoor/Outdoor Ultra-Fine Particle and PM sensor) survey

NanoExplore developed an Indoor/Outdoor Ultra-Fine Particle and PM sensor for air quality monitoring and exposure prevention. Our device, the NanoExploreR, is now ready and we want to test its market potential! The main features of the NanoExploreR include real-time, high frequency continuous monitoring of Ultra Fine Particles (UFP) and Particulate Matter (PM1, PM2.5, PM10), as well as particle sampling on TEM grids/filters for further analysis. The device is suitable for indoor and outdoor use.


Indoor NanoExploreR


Outdoor NanoExploreR

Are you working with nanoparticles in your company or research institution? Then we invite you to check the NanoExploreR datasheet (download PDF here) and fill out our survey to share your opinion on the device. The survey runs until May 31, 2022.

Measurement Campaigns

Within the framework of this project, two nanoparticle exposure measurement campaigns were carried out. The first campaign was carried out in Italy at four different plants of a company which focuses its production on Green Building materials and services. The plants were located in the following regions: Zimella (Verona), Brugine (Padua), Sassuolo (Modena), Rubiera (Reggio Emilia). The second measurement campaign was carried out in Spain in a Nanotechnology Institute, which is located close to Barcelona (Catalonia).
The objectives of all campaigns are the following:

- Characterization of nanoparticle emissions in the most representative production areas.
- Determination of the potential exposure to nanoparticles during the different processes, including quantitative data related to the levels of exposure of a particulate material in a range of 10 nm to 10 µm, therefore, in the inhalable and respirable ranges.
- Determination of the spatial variability of nanoparticles in the air.
- Determination of the dustiness of the material and the state of aggregation/agglomeration in air

Future Events

NanoExplore will organise workshops and webinars to enable the most efficient use of the project outcomes. Visit our website regularly to see what is happening and follow us on our social media accounts not to miss any future events!

NanoExplore is on social media!

Follow NanoExplore on Twitter: /LFnanoexplore Follow NanoExplore on LinkedIn: /company/life-nanoexplore

Project Facts

Project Reference: 760840; Duration: 48 months; Total Budget: 2,3M €

Contact for Press

Judith Friesl
Yordas Group

Cathrin Cailliau
Dissemination Manager
Yordas Group

SABYDOMA Workshop:
A Stakeholder's Perspective of Safe-and-Sustainable-by-Design (SSbD)

Beatriz Alfaro Serrano
BioNanoNet Forschungsgesellschaft mbH

On Friday **18th February 2022**, the EU H2020 project SABYDOMA organised the virtual workshop – **A Stakeholder's Perspective of Safe-and-Sustainable-by-Design (SSbD).**

The main objective of the Workshop was to present a myriad of SSbD concepts, approaches, and understandings. And it has raised more questions than answers. But this is increasingly the case in a world becoming more and more sophisticated thanks to technological development and where responsibility and reflexivity require complex thinking, broad analysis and forecasting of consequences. In addition, the Workshop also showed a growing transdisciplinary SSbD community of actors, demonstrating the importance of such a concept and strategy that will be required in the (near) future within the governance of nanomaterials in the EU.

There was a well, *gender-balanced* attendance of around 100 participants from all over the world (Asia, America, Africa, Europe) and from a wide range of stakeholders (scientists, industry, consultants, market researchers, NGO representatives, regulators, policy makers/advisors, lawyers, trade associations, etc.), joined the workshop (See Figures 1 and 2).

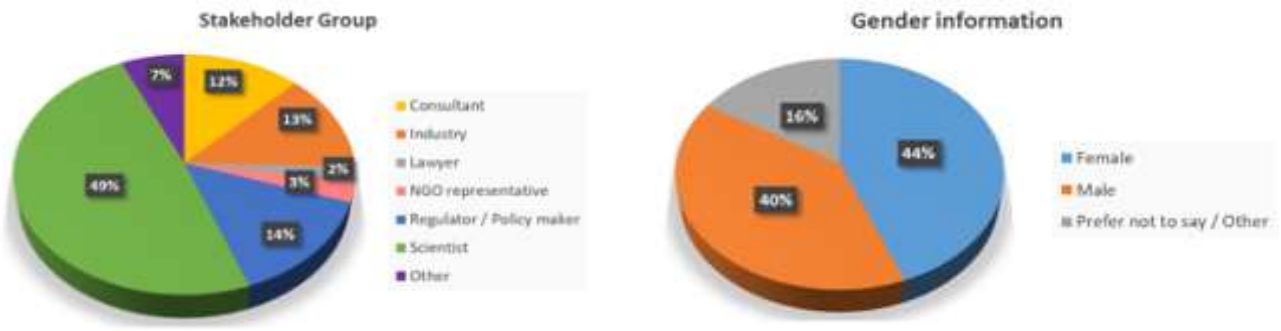


Figure 1. Representation of the different stakeholder groups among the workshop participants

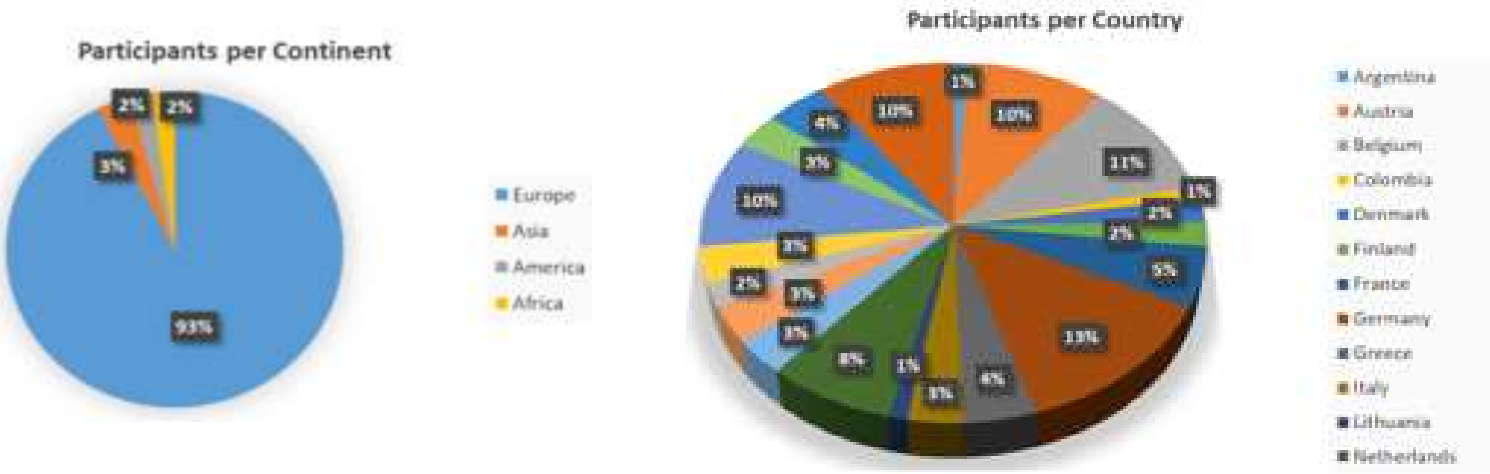


Figure 2. Workshop Global Outreach – Participants per continent and per country

After a warm welcome to the workshop by the moderator *Mr Anthony Bochon*, from Gil Robles – San Bartolome & Partners (Brussels), SABYDOMA's coordinator, *Prof. Andrew Nelson*, from the University of Leeds, gave a short presentation about the project. Next came a summary of the output of the 1st Legal Workshop on Safe-by-Design organised by SABYDOMA in January 2021, by *Anthony Bochon*, *Beatriz Alfaro Serrano* (from BioNanoNet Forschungsgesellschaft GmbH) who warmly welcomed and presented each eminent invited speaker, who gave a short presentation of their visions/definitions of SSbD.

Cntd →

Cntd → **SABYDOMA workshop:**

The 10 invited speakers were:

Victor Puntes, Applied Nanoparticles, Spain
Mario Pansera, University of Vigo, Spain
Eva Valsami-Jones, University of Birmingham, UK
Denis Sarigiannis, PARC project
Jana Drbohlavová, European Commission
Xenia Trier, European Environmental Agency (EEA)
Anne Chloe Devic, European Chemical Industry Council (CEFIC), Belgium
Henrik Edin, ChemSec, SE
Blanca Suarez, TEMAS Solutions GmbH, Switzerland
Sean Kelly, Nanotechnology Industries Association, Belgium

The workshop continued with a 'live' survey, moderated by *Beatriz Alfaro*, where the workshop participants were anonymously invited to choose, based on the definitions given by the workshop speakers, those they mostly agreed / felt most comfortable with.

Figure 3. Word cloud with the words the workshop participants mostly associate with SSbD.

As can be seen in the figure below, the most popular "visions/definitions of SSbD", with 12%, 12% and 13% of the votes respectively, were:
No. 1: "When one says safety and sustainability, I see health, individual health, community health, societal health, environmental health, ecological health, health at large. This forces us to always consider the full life cycle of our products and protect NPs from uncontrolled dispersion. Not only our products, but also our investigations (safe and sustainable during product design, product manufacturing, and product use, of course)".
No. 2: "My idea of SSbD is of a deliberative democratic mechanism that enables reflections about values and purposes of its promoters as well as anticipates positive/negative consequences of its implementation".
No. 9: "SSbD should concern products (chemicals and materials), all consumer products, processes and services. In the design phase, when developing those as new products, new processes… many dimensions should be taken into account at the same time. The known life cycle analysis approach (including the crucial parameter of GHG emissions), should be added to the two equally crucial dimensions of Circularity and Product safety, which means free of harmful substances from the beginning to end of life of any product, including its recycling processes. This is a process, a methodology, not a regulation.

Cntd →

Cntd → **SABYDOMA workshop:**

This is a complex Research & Innovation process where ideally no trade-offs should have to be made between all these previously mentioned dimensions, and it should be considered as a journey, probably a long journey until this concept is embedded by all stakeholders along value chains, SMEs, universities, citizens, etc.".

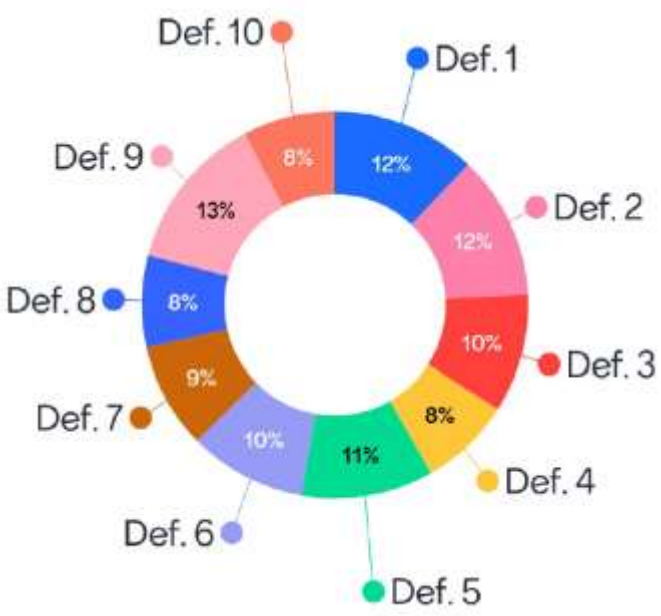


Figure 4. Results of the life survey on SSbD.

The workshop ended with a very interactive *Round Table*, where panellists were interviewed by the moderator of the session *Mr Ignasi Gispert Pi* (from Applied Nanoparticles S.L.) discussing different aspects of SSbD.

Some of the workshop's **key statements** included:
SSbD is a holistic approach that takes many aspects into account.
SSbD principles must be adhered to throughout the life cycle of chemicals, materials and products, taking into account their entire life cycle.
Design practices that cause load shifting to other domains or compartments should be avoided (e.g., from health to climate change or from water to sludge).
'Safe' should always mean 'safe'. Substances of Concern (SoC) should never be labelled as safe.
SSbD criteria should drive substitution.
Companies should strive for SSbD, and SSbD should not be a minimum requirement.
Economic growth should be decoupled from sustainability, as economic growth leads to environmental degradation.

The SSbD survey that was conducted 'live' during the workshop, has been now extended to the whole interested community in order to investigate which are the most agreed definitions of SSbD. You can take the survey here.

Relevant publications suggested by the workshop speakers can be found here.

The **presentations** and **recordings** of the workshop are available on the project website.

SABYDOMA project has received funding from the European Union's HORIZON 2020 Research & Innovation Programme under grant agreement no. 862296.

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HARMLESS Presents the Project Case Studies at the OECD

Beatriz Alfaro Serrano—BNN

Since the end of 2021, the HARMLESS project has been collaborating with the Organisation for Economic Co-operation and Development (OECD), concretely with the OECD Working Party on Manufactured Nanomaterials (WPMN).

The safety of Manufactured Nanomaterials is an important concern impacting regulatory bodies throughout the world. Due to their size, Manufactured Nanomaterials may require additional testing beyond the standard suite of tests used for other chemicals, to ensure that the impact on human health and the environment is fully understood. To ensure that the tests used to address the safety of Manufactured Nanomaterials are consistent and defensible; OECD's WPMN launched the Sponsorship Programme for the Testing of Manufactured Nanomaterials (Testing Programme) in November 2007. This Testing Programme verifies the testing methods used on Manufactured Nanomaterials by pooling the expertise of OECD member countries, some non-member countries and other stakeholders to fund the safety testing of specific Manufactured Nanomaterials.

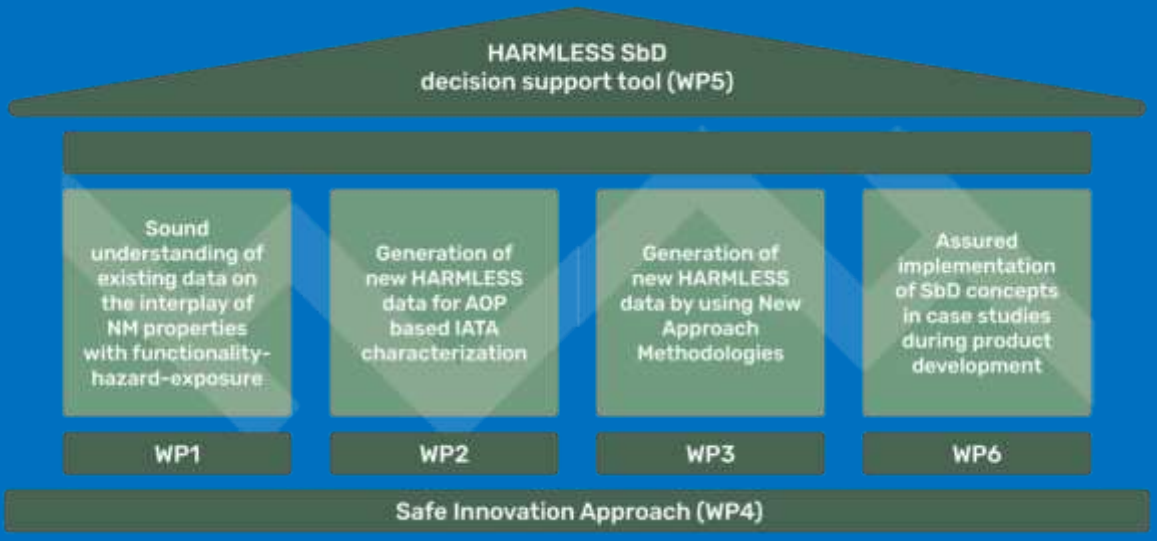
Within the OECD Working Party on Manufactured Nanomaterials two new Steering Groups (SGs) have been established that will work together closely, one is going to focus on Advanced Materials (AdMa) and the other one on the Safer Innovation Approach (SIA). During the last meeting in February 2022 HARMLESS presented an overview on the industrial case studies within the SG AdMa. This presentation was very well taken. Currently, details are worked out on how to continue the collaboration between HARMLESS and the OECD. More news will follow soon.

About HARMLESS

Advanced high aspect ratio and multicomponent materials: towards comprehensive intelligent testing and Safe-by-Design strategies

Public and private researchers have spent great efforts on nanosafety research in the past decade. This has helped to establish nanotechnology in key markets and inspired regulatory approaches such as the REACH requirements for nanomaterials. Nevertheless, as risk assessment has focussed predominantly on a few types of monocomponent nanomaterials, current product designs and regulations may be outpaced by the development of next generation multicomponent nanomaterials – a significant cause for concern to the manufacturer as well as to human health and the environment. Complex multi-component, hybrid nanomaterials and High Aspect Ratio Nanoparticles (MCNM & HARNs) exhibit differing rates of fragmentation, degradation and leaching, differing toxicities of the separate and interacting components, and different interactions with biological and environmental systems.

HARMLESS is developing a novel, multifaceted Safe Innovation Approach to MCNM & HARNs by integrating a toolbox of New Approach Methodologies, which can test key data according to latest scientific insights into MCNM & HARNs. To ensure that industries operating at differing scale, including SMEs, pick up our approach, we are creating a user-friendly decision support system and validating it iteratively at scale in different case studies.



The BNN Newsletter Presents NSC News

Simone Jagersbacher—BNN

BNN is delighted to present its 1st BNN Newsletter this year—downloadable here
In addition to the scientific contributions from our BioNanoNet members, reports on projects and activities, as well as an overview of interesting publications and upcoming events, there are items on this issue's focus topic "Sustainability in Science, Research and Development: Challenges and Opportunities".

If you haven't yet had a chance to look at the newsletter, here are some of the articles of interest to the NSC community, and beyond:

Project Updates

BIORIMA's Final Show – 4 years of BIOmaterial RIsk Management Come to an End
HARMLESS Presented the Project Case Studies at the OECD
SABYDOMA's survey – "Vision/Definition of Safe-and-Sustainable-by-Design (SSbD)"

BIONANONET Members' Contributions

Is Time Spent in the Environment a Key Toxicity Factor in Nanomaterials?

BNN Retrospect

NanoCommons Knowledge Base & Hackathons
SABYDOMA's workshop "A Stakeholder's Perspective of Safe-and-Sustainable-by-Design (SSbD)"
BioNanoNet General Assembly, BNN Networking & SusChem-AT Event

P.S. Not yet registered for our BNN Newsletter? Then go ahead and subscribe here:

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

Safe(r) by Design in the Nanotechnology Sector

NanoImpact - Special issue

Araceli Sanchez Jimenez - INSST

Nanotechnology is a continuously growing field with hundreds of already marketed novel nanomaterials (NMs) and nano-enabled products (NEPs), progressively being introduced in new sectors like medicine. Like any emerging technologies, it brings uncertainties regarding risks and hence we need a warning system that allows the identification of potential risks early enough, so innovations can be developed in a cost efficient way. In response to this situation, a proactive approach is needed to minimize the gap between the pace of innovation and the pace at which the safety of new NMs and NEPs is assessed. With the Safe (r) by Design (SbD) concept, we seek to design safer NMs, NEPs and processes in a robust yet agile manner starting at an early stage of innovation. To achieve this, data sharing, trust and communication between innovators and regulators is key and this can only be achieved as part of an effective risk governance system (Soeteman-Hernández et al. 2021). The Safe Innovation Approach (SIA) combines SbD with regulatory preparedness (RP) (OECD 2020). RP seeks to anticipate to new developments so that regulators can develop legislation that can keep pace with innovations.

The purpose of this special issue is to offer a comprehensive view of the developments made in SbD in the nanotechnology sector by the EC H2020 NanoReg2 and other projects. The ten articles make a substantial contribution towards methodological approaches (Giusti et al. 2019; Tavernaro et al. 2021; Salieri et al 2021; Sánchez Jiménez et al. 2022), implementation in industrial case studies (Sánchez Jiménez et al. 2021), barriers (Cummings et al. 2021; Soeteman-Hernández et al. 2020) and the development of collaborative centres (Marcoulaki et al. 2021) and trusted environments (Soeteman-Hernández et al. 2021) for an agile implementation.

The NanoReg2 SbD concept is based in three pillars:

Pillar 1: safer materials and products by design: This refers to identifying and developing less hazardous NMs for humans and the environment and designing NEPs that, under normal and unforeseeable conditions, do not release free NMs (unless that is a requirement for their performance) to the environment and where the NMs can be recycled at the end of life.

Pillar 2: safer use of products and end of life: This consists of evaluating the risks during all uses throughout the product lifecycle in order to optimize defined acceptable uses. Building on the first SbD pillar, when a product has been made as safe as is possible, this second pillar will facilitate an evaluation and determine any potential restrictions on the use of a specific NEP.

Pillar 3: safer industrial production: This pillar aims to enable a better control on the industrial processes along the production chain, designingprocesses that eliminate/reduce the release of NMs to the workplace and outdoor environment, do not use hazardous chemicals, reduce NM-waste, do not pose a safety hazard (e.g. explosion) and optimize energy consumption.

The implementation of these three pillars requires a strategy to balance safety, costs and functionality (Tavernaro et al. 2021). The assessment of safety at the early stage of an innovation is hampered by the lack of data and available tools (Dekkers et al. 2020). The papers deal with these challenges and the barriers found in specific sectors for the implementation of SbD principles. Strategies like grouping of nanoforms and read-across described in this issue are an important step to overcome some of these challenges and towards the development of safer products.

The integration of human and environmental risk assessment, life cycle assessment as well as an assessment of the economic viability in some of the cases makes this research an important asset for extending the safe design aspect towards sustainability (Salieri et al. 2021). Safe and Sustainable by design (SSbD) is a crucial element in the EU Chemicals Strategy for Sustainability and supports the Green Deal ambition for a toxic-free environment, ensuring that chemicals are produced and used in a way that maximises their contribution to society while avoiding harm to our planet and to future generations.

Access the paper here

NanoPathology: The Revolution in Medicine

Concept of Nanopathology

Antonietta Gatti—NewNanodiagnostics

When in 2001 the word "Nanopathology" was invented it was a void word, but hid a great intuition [EU Project Nanopathology : the role of Micro and Nanoparticles in Biomaterial-induced pathology QLRT-2002-147 (2002-05)]. In the beginning it was intended as the science to study the interaction between particulate matter and the human body with particular emphasis on nanosized particles. At present it is a discipline that has connections with other disciplines like nanotoxicology [EU project DIPNA FP6-NMP-STRP-032141], nanoecotoxicology [Italian National Project ITI-INESE 2009-2012], since the concept that is at the base is the interactions of submicro and nanosized particles with the human body, animals, and the environment (soil, plants, air, water).

Interactions of the tiny sized particle lead to new processes, and new phenomena not yet known. Thanks to the instruments, processes, and scientific knowledge created by nanotechnologies, but mostly thanks to the increase in pathologic cases examined, nanopathology has grown and formed the basis for a new approach to medicine. In recent years the study has concentrated on a special cluster of patients: soldiers.

Why?

Recent conflicts have revealed the use of new more powerful and efficient (in term of destruction) high-technology weapons. Some are able to perforate thick layers of soil/cement/hard-metal shelters, and such weapons often use depleted uranium or tungsten. Both share similar properties of hardness and high melting temperatures. These properties allow bullets to maintain their spiked shape during the balistic pathway, despite the increased temperature caused by for friction with air. This allows the bullets to penetrate the target and then explode. During the blast there is an increase in temperature of up to 3000°C (3023-3063 for DU rif. Eglin base report) and the dispersion of airborne particulate matter with a composition that comprises the bomb, the target and the environment. The high temperature is responsible for the tiny size and spherical morphology of the particles.

At present we know of other weapons like DIME (Dense Inert Metal Explosive) (ref wikipedia and others) that generate high temperatures, while the heavy metallic powder that is used then explodes to create a fire wall that destroys everything it finds in its path. This is not just a straightforward destruction measure but includes the aerosolization of metals which remain in the environment, contaminating everything for the eternity. We do not have a direct analysis of these effects, but we have seen the effects on the human body—such as the disappearance of lower limbs with cauterization.

Specifically war fields are polluted with tiny particles of heavy metals that can be inhaled by people who live there, by soldiers, by humanitarian workers, and can also be ingested through the consumption of polluted vegetables or meat. Once inside the body, these foreign particles can be dispersed in all the fluids and tissues, and there is even a possibility of selective uptake by some tissues or organs according to their function, size and chemical composition. Moreover, once entrapped, they can trigger a foreign body reaction..

These references provide analyses of different types of possible exposure, the consequent diseases and how this correlation can be detected:

1. Gatti- Montanari Nanopathology 2008 Panstanford Pub;
2. Case studies in Nanotoxicology and particle toxicology ELSEVIER 2015;
3. Gatti- Montanari Advances in Nanopathology 2021 PanStanford
4. Antonietta M Gatti, Stefano Montanari , Stefano Ferrero, Anna Maria Lavezzi
   Silver nanoparticles in the fetal brain: new perspectives in understanding the pathogenesis of unexplained stillbirths; Nanomedicine (Lond)2021 Feb;16(4):265-274. doi: 10.2217/nnm-2020-0391. Epub 2021 Feb 3.
5. Antonietta M Gatti, Marko Ristic, Stefano Stanzani, Anna M Lavezzi
   Novel chemical-physical autopsy investigation in sudden infant death and sudden intrauterine unexplained death syndromes; Nanomedicine (Lond). 2022 Feb;17(5):275-288. doi: 10.2217/nnm-2021-0203. Epub 2022 Feb 8.
6. The Rise of Nanotoxicology: A SIDS Case Study

News from the CUSP Projects

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

Plasticheal Launches Open Online Directory of MNP Initiatives

Plasticheal puts research on impact of micro- and nanoplastics on health and environment just a click away.

The CUSP partner project Plasticheal has announced the launch of an open and online directory that brings together relevant research on micro- and nanoplastics (MNPLs) worldwide.New digital directory provides an overview of research projects and regulatory initiatives around the world; provides first tool of its kind focused on understanding the risks to human health.

The Plasticheal database is an attempt to gather information on all the different known projects that study the health and environmental risks of plastic pollution and compare it with the knowledge gaps that have been identified so far. This is the first open directory focused on the impact of MNPLs on human health. It has been designed to become a hub for risk assessment of MNPLs and relevant regulatory research, and it is aimed at the public, science professionals, and policy makers.

The projects currently in the database are mostly being or have been developed in Europe, although initiatives from the United States are also included, and it is expected that projects from other geographic and working areas will be added as they are identified. Users can submit their contributions through the form available in the directory.
"We hope to develop a database in which we can continuously track the information that different projects are generating and to analyze what key aspects they are addressing or the degree of depth with which they are doing so," said Steffen Foss Hansen, Associate Professor of regulatory engineering at the Technical University of Denmark (DTU) and leader of the team in charge of database development.

Deepening the search

The built-in analytical function will allow people to search across all the different projects to learn, for instance, how much funding has gone into addressing various knowledge gaps, how funding and projects have been distributed across geographical areas, or to investigate different categories of research: environment, health, air pollution, etc.
"This is a milestone in the development of the Plasticheal framework on how to address the study of the risks associated with micro- and nanoplastics, including the results and information generated from other projects and, at the same time, addressing all key aspects without duplicating the work done", explained Alba Hernández Bonilla, Project Coordinator and Aggregate Professor at the Autonomous University of Barcelona (UAB).
Everyone is invited to visit and explore the new Plasticheal database.

CUSP Member Organisations from IMPTOX Join Green Labs Initiative

IMPTOX partners MUW and UNIVIE have recently joined the Green Labs Austria initiative which aims to connect Austrian & international laboratories that share the vision of sustainable research and helps scientists to think actively about the resources used for their research.

Imptox and CUSP's focus is on the possible health effects of micro- and nanoplastics, and both partners considered it necessary to evaluate their lab's contribution to the increasing quantity of plastic wastes in the environment. The **MUW** group is studying the influence of inhaled and ingested MNPs in health and the **UNIVIE** group is producing model MNPs and developing analytical tools for their characterization. "The ecological impact of disposable items, energy consumption, disposal of chemicals and solvents and usage of water during daily laboratory work is somehow underrated. Those are key factors to consider to run a laboratory efficiently in a sustainable way", explains Prof. Dailey from UNIVIE. "Our typical lab work required a lot of single-use plastic, from Petri dishes to tubes to syringes and culture plates. We aim to reduce plastics by using glassware wherever possible and communicating with others to improve our ecological footprint", adds Prof. Epstein from MUW.

Green Labs Austria offers tips and resources to help labs get started on their way to carry out research more sustainably. It accompanies them along the way by offering guidelines for a transition to more environmentally aware research

PlasticsFatE's First Training Workshop

Introduction to and Training on Risk Assessment for Micro and Nano Plastics

The PlasticsFatE Project held the first of its training workshops on the 29th March, in which it provided an introduction to risk assessment for micro and nanoplastics (MNPs) and invited participants to fully engage in the live session. Audience members were given an overview on the basics of risk assessment and shown various tools to support the assessment procedure. They gave feedback on their data needs and availability as well as which tools might exist in the portfolios of the MNP projects and/or MNP Cluster partners.

Following a welcome by the Scientific Coordinator, Rudolf Reuther (ENAS, DE), the workshop started with an overview by Dana Kühnel [UFZ Leipzig, DE] on the current regulation of polymers. Some of the main tools and methods for risk assessment were shown. In the subsequent feedback round supported by a mentimeter query, crucial topics and issues to consider for human risk assessment were then discussed. In a second lecture, Blanca Pozuelo Rollón [ITENE, Paterna, SP] demonstrated a first approach for the decision support system (DSS) that she and her colleagues are developing. The feedback session generated a discussion of impressions of the approach and the tools used. The focus was placed on existing tools, tools under development, and additional tools, and how are they provided and integrated into risk assessment. A discussion on data sharing in the project and the implementation in the web-based DSS platform completed this session. Bernd Giese [BOKU Vienna, AT] then introduced the Prospective Multi-Criteria Decision Support System for plastics (PMCDS) and its intended use in the context of PlasticsFatE. Sebastian Purker [BOKU Vienna, AT] followed up by giving the audience the opportunity to add and rank the main criteria via mentimeter; for example, on the relevance of the proposed criteria and what could be important features of the tool. In an open discussion session, led by Bernd Giese and Sebastian Purker, the results of the feedback from the mentimeter query were collected and discussed. A final discussion took place on the information needs for the different criteria, and for the application of the tool to give indications of other PMCDS data needs, on the data partners are collecting, and how they can be integrated into the PMCDS. Finally, on behalf of Damjana Drobne [Univ. of Ljubljana, Slovenia] Dana Kühnel delivered a lecture on the importance of data management as well as the recommendations and suggestions of the RD manager in PlasticsFatE. To conclude, Dana Kühnel summarised the training workshop.

All presentations and videos of the workshop are available here: https://zenodo.org/record/6421451#.YnkXY-jMKUk
For more information, contact hello@plasticsfate.eu **and visit our website** www.plasticsfate.eu

Progressing Together – 2nd CUSP Annual Meeting

CUSP members will convene in Ispra, Italy from June 8th – 10th for the cluster's second annual meeting

In a hybrid event taking place in part at the facilities of the European Commission's Joint Research Center (JRC) in Ispra, Italy and in part online, CUSP members will discuss the progress achieved during the last year, while coordinating research efforts for the near future. After a year of communicating only online, at last members will meet in person.

The three-day meeting will be kicked off by 2022 CUSP Chair, Alba Hernández from Plasticheal, and feature speakers from the European Commission, the JRC, and the European Food Safety Authority. Important points of discussion will be policy needs regarding micro- and nanoplastics and how to effectively communicate science to policymakers. From a more scientific perspective, JRC scientists will address how to balance the desirable with the possible with regards to nanoplastics material for research. Over the three meeting days, the five Project Coordinators from AURORA, Imptox, Plasticheal, PlasticsFatE and Polyrisk will share their research developments, while also coordinating efforts with the leaders of the six CUSP working groups.

The meeting will close on June 10th with a pathway forward and final remarks fropm, this year's CUSP Chair.
Stay tuned for updates on CUSP social media (Linkedin & Twitter) and via the CUSP website.

Nanosafety Training School: Towards Safe and Sustainable by Design advanced (nano)materials

15 - 20 May 2022

About the School

The Training School will take place in the historic centre of Venice, Italy from 15 - 20 May 2022. The school aims to transfer State-of-the-Art knowledge on a variety of topics from key experts to the new generation of nano-environmental, health and safety professionals, using interprofessional education in hands-on sessions.

Join our school and gain more knowledge on multidisciplinary expertise!

Topics

- Historical perspective of NanoSafety
- Transition from Safe to Sustainable by Design
- Industrial Perspective
- Physical-chemical characterization
- Materials: properties and sustainability
- Grouping & Read Across Approaches
- Modelling
- Hazard
- Exposure
- Risk Governance
- Case Studies: 1. Decision and Support for Safe & Sustainable by Design, 2..., 3... - Interactive session with attendees

Benefits from Attending the School

- Learn the latest trends in NanoSafety gaining an in-depth interdisciplinary understanding of the key topics
- Engage in a dialogue with peers and key experts
- Benefit from a variety of additional networking opportunities such as a boat trip in the Venetian Lagoon and a social dinner

Who should attend?

→ Early-stage researchers

→ PhD students and Post Docs

→ Senior researchers

→ Industry

→ Governmental Agencies

→ Medical Personnel

→ Anyone interested in Safe Nanotechnology, Risk Assessment and Nano-Medicine

Venue

Venice, Italy

The core school programme will take place in the historic Auditorium Santa Margherita

Organizing projects:

Contributing projects:

We are glad to confirm the next SAF€RA Symposium on **May 19-20, 2022** in Rome, at INAIL building in EUR the main business district. Here you have the preliminary updated agenda, the registration link, and some additional information about the promotion.

Agenda and Information about the venue
The event will take place at the INAIL Palazzo auditorium for the symposium that will offer us the best conditions to run the meeting.
The address of the venue is

INAIL Palazzo
Piazzale Pastore 6
00144 Roma
https://goo.gl/maps/6b8EkcHuvSzDZnGQA

Registration
For the registration, please use this page and confirm your participation as soon as possible
https://forms.office.com/r/hEqi8id36n

After registration we will contact the participants who want to participate in the social dinner to collect the payments prior to the event, and send invoices.

For the online participation, there will be no payment required.

Additional information
Information on the call recorded on April 4th, 2022
An on-line introduction of the call text for 2022 is available here: https://www.youtube.com/channel/UCGrlXRBIBa5BV-TXHOAFEFQ
If you have any question, do not hesitate to contact, SAF€RA Secretariat contact@safera.eu

NanoExplore Workshop: Understanding biomonitoring protocols and biomarkers in environments with high exposure to nanomaterials

Date: May 25, 2022 (Wednesday) Time: 11:00 - 12:30 (CET)

Register here now!
After registration, a joining link, as well as a Meeting ID and a passcode, will be sent to your email.

About the workshop

In this workshop, the EU-funded NanoExplore Project hosts Irina Guseva-Canu from Unisanté (IST) and Enrico Bergamaschi from the University of Torino (IT), who will provide the nanotechnology audience with a deeper insight into bio-monitoring protocols in environments where exposure to nanomaterials is inevitable.

Workshop Plan

First session: 11:00 - 11:30 AM
Short break: 11:30 - 11:40 AM
Second session: 11:40 AM - 12:10 PM
Q&A session and concluding remarks: 12:10 PM - 12:30 PM

Topics to be covered

The topics to be discussed during the workshop are as follows:

Prof. Irina Guseva-Canu, Unisanté, University of Lausanne
Presentation Title: "Reference values of biomarkers of oxidative stress in non-invasively collected biological matrices: Relevance for understanding and interpreting biomarkers changes in epidemiological studies"

Prof. Enrico Bergamaschi, University of Torino (UNITO)
Presentation Title: "On the need for an integrated and harmonized study protocol to assess exposure and early effects in workers occupationally exposed to nanomaterials"

Who should attend?

- Companies manufacturing and handling nanomaterials
- Researchers working at the intersection of occupational medicine and nanosafety
- Regulatory bodies working with the REACH regulation
- Individuals involved in the safety and regulation of nanomaterials
- Health and Safety Managers as well as employees handling nanomaterials

The **NanoCommons EU Project** consortium, in collaboration with the **EU NanoSafety Cluster projects**, is delighted to announce the **"Nano-week" and NanoCommons Final Conference**, to be held this summer, in Limassol, Cyprus (with virtual participation also possible for selected sessions).

The conference and associated events (e.g., Young NanoSafety Researchers event, Training events from across the nanosafety projects, EU-US CoRs meeting, NanoInChi CODATA meeting, NSC meeting) will take place between **20-24 June 2022**.

The conference theme is ***"Evolution of nanosafety and materials sustainability as we transition into Horizon Europe"*** *and the main topics are:*

1. Safe-and-Sustainable-by-Design of (nano-enabled) products & processes
2. New modelling methodologies and nanoinformatics approaches
3. Data Management – Databases – FAIR data
4. Nanomaterials go advanced – emerging challenges and foresight
5. Emerging "hot" topics in nanosafety

For further details on topics and sub-topics click **here**.

Call for Abstracts: The **abstract submission** for oral presentations **is now OPEN until 25th February** 2022. If you wish to take an active part in this conference, please submit your abstract by clicking this **link**.
Poster abstracts can be submitted up to **31st May** 2022.

The **Scientific Committee,** in charge to review the abstracts is a group of **experts from the EU Projects that constitute the NanoSafety Cluster** and will be **led by the NanoCommons Coordinator**, Professor Iseult Lynch. The list of the Scientific Committee members is available here.

From Nano- to Advanced Materials: Lessons learned in InnoMat.Life

Monday, 27.06.2022 - Tuesday, 28.06.2022

Nanosafety research so far has mainly investigated simple nanomaterials while materials on the market often cover broad size distributions (nm to µm), show a variety of different morphologies, and may be composed of different substances. It remains unclear to which extent existing methods and knowledge can be applied to these complex material types.

The BMBF-funded project InnoMat.Life ("Innovative materials and new production processes: Safety along the life cycle and in industrial value chains") addressed this challenge and investigated three additional material classes: (1) fibres, (2) polydisperse polymer particles for industrial applications such as additive manufacturing, and (3) materials with complex morphologies and/ or composition. The project assessed exposure and hazards for humans and the environment and has considered the whole life cycle.

InnoMat.Life aimed to support regulators, industry and decision makers by providing suitable methods to conduct hazard and risk assessment of these innovative and complex material types with a special emphasis on establishing criteria and similarity concepts to perform grouping. To achieve this the project combined expertise from academia, agencies and industry.

This conference addresses stakeholders from policy, science, industry and NGOs who are dealing with regulatory implications of innovative materials in the context of chemical safety. InnoMat.Life will present the final project outcomes and aims to discuss them in a broader context of other ongoing initiatives.

The workshop will be organized as a face-to-face event at the German Federal Institute for Risk Assessment (BfR), Marienfelde, Diedersdorfer Weg 1, 12277 Berlin (www.bfr.bund.de).
Link for registration: https://www.bfr-akademie.de/english/innomatlife.html

Programme

Day 1: 27.06.2022

12:00	Registration	
13:00	Welcome	
Approaching advanced materials: InnoMat.Life in a nutshell		
13:15 13:45	Highlights of InnoMat.Life	Andrea Haase, BfR
Environmental Testing and Assessment Strategies for advanced materials *Session Chair: Burkhard Stahlmecke, IUTA and Kerstin Hund-Rinke, IME*		
13:45- 15:30	*Invited Guest* Similarity assessment of nanomaterials within a risk assessment framework	Willie Peijnenburg, RIVM
	Lessons learnt from Daphnia	Dana Kühnel, UFZ
	Lessons learnt from Algae	Kerstin Hund-Rinke, IME
	Overall Discussion	
15:30- 16:00	**Coffee Break**	
Human Testing and Assessment Strategies: Fibres *Session Chair: Andrea Haase, BfR and Dirk Brossell, BAuA*		
16:00- 18:00	*Invited Guest* Physicochemical predictors of high-aspect ratio nanomaterial toxicity	Ulla Vogel, NRCWE
	Challenges for fibre aerosolization and classification	Dirk Brossell, BAuA
	On the search of fibre-specific in vitro responses	Martin Wiemann, IBE
	Towards an overarching testing and assessment scheme	Andrea Haase, BfR
	Overall Discussion	

Day 2: 28.06.2022

9:00	Welcome	
Human Testing and Assessment Strategies: Polymer Particles *Session Chair: Carmen Wolf, IUTA and Wendel Wohlleben, BASF*		
9:00- 11:00	*Invited Guest* Understanding human exposure and health hazards of micro- and nanoplastic particles	Raymond Pieters, UU
	Assessing the carrier hypothesis: Adsorption & Desorption of persistent organic pollutants	Alexander Roloff, BfR
	Assessing the carrier hypothesis: Outcome from in vitro & in vivo studies	Roland Buesen, BASF
	Towards an overarching testing and assessment scheme of polymer hazard and polymer life cycle	Wendel Wohlleben, BASF
	Overall Discussion	
11:00- 11:30	**Coffee Break**	
Advanced Manufacturing and lessons learnt for other advanced materials		
11:30	Releases during 3D printing of polymer and metal parts by selective laser sintering	Burkhard Stahlmecke, IUTA
	How to approach materials with complex composition and/or morphologies	Wendel Wohlleben, BASF
	Overall Discussion	
12:30 13:30	**Lunch**	
13:30 15:00	**Poster Session** *(we welcome abstract submissions from all registrants)*	
Lessons learnt and further challenges for Advanced Materials		
15:00 16:00	Podium Discussion	

For more information, go to http://www.innomatlife.de/EN_news.html

Did you know…

A comprehensive, up to date list of forthcoming events is regularly published by the BREC Solutions Nanotechnology Newsletter along with the latest news from research and industry

Here's a taster of what's on offer this year, extracted from the Newsletter:

18/04/2022 3rd International Conference on Nanomaterials, Nanofabrication and Nanocharacterization (NANOMACH) (Oludeniz, Turkey)

25/04/2022 World Nanotechnology Conference (Las Vegas, USA)

08/05/2022 ASTM E56 (Nanotechnologies) Sheraton Denver Downtown Hotel; Denver, CO US

11/05/2022 World Congress of Advanced Materials 2022 (WCAM-2022) (Tokyo, Japan)

16/05/2022 ASTM E56 (Nanotechnologies) Hyatt Regency Seattle; Seattle, WA US

23/05/2022 Scholars Frontiers in Nanoscience and Nanotechnology Congress (HYBRID EVENT) (Rome Italy)

27/05/2022 21st International Conference on Nanotechnology and Nanomaterials (Zurich, Switzerland)

15/06/2022 Nanotech France 2022 International Conference

19/06/2022 22nd International Conference on the Science and Application of Nanotubes and Low-Dimensional Materials (NT22) (Suwon, South Korea)

22/06/2022 2nd Global Conference on Advanced Nanotechnology and Nanomaterials (Berlin, Germany)

02/09/2022 16th International Summer Schools on Nanosciences & Nanotechnologies, Organic Electronics & Nanomedicine (Thessaloniki, Greece)

05/07/2022 12th NANOTEXNOLOGY Expo 2022

05/07/2022 19th International Conference on Nanosciences and Nanotechnologies (Thessaloniki, Greece)

14/07/2022 International Nanotechnology and Nanomedicine Conference (London, UK)

19/09/2022 4th World Nanotechnology Summit Worldnano-2022 (Miami, FL, USA)

21/09/2022 World Nanotechnology Conference (Paris, France)

21/10/2022 NanoCanada - From Earth to Space Conference (online)

31/10/2022 ASTM E56 (Nanotechnologies) Sheraton New Orleans; New Orleans, LA US

..and the CHARISMA Project website has even more events listed

SAVE THE DATE—2023
8th International Conference nanoSAFE

We are pleased to announce that the 8th International Conference on Health and Safety Issues for a socially responsible approach to nanomaterials will be organized in Grenoble, France from June 5th to 9th, 2023.
Organized every two years since 2008, NANOSAFE Conference is intended for sharing latest research results on health and safety issues related to nanomaterials and beyond for a socially responsible approach.

We are looking forward to welcoming you in Grenoble in next year!

Simon Clavaguera CEA
(on behalf of the NANOSAFE 2023 organizing committee)

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.

- Submit your news items here
- Subscribe to the NSC Community Mailing List here for your NSC Newsletter delivery
- Follow NSC Working Groups
- Join our LinkedIn Group
- Follow the NanoSafety Cluster on twitter
- Watch NSC project activities on our YouTube channel
- Find out about our International Cooperation activities
- Learn more about the NSC Projects

www.nanosafetycluster.eu