

NATIONAL CENTRE FOR  
SCIENTIFIC RESEARCH "DEMOKRITOS"


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**KETs 2018 Brokerage Event, 17 October 2017, Strasbourg, France**  
WS.4 KETs for Energy and materials characterisation, FTI (Topics § 1.2, § 1.3, FTI)

## NCSR "Demokritos" at a glance

*National Centre for Scientific Research "Demokritos", Athens, Greece*

- Among **largest research centers in Greece**, and a point of reference as a successful example of a **multidisciplinary research** center.
- Critical mass, expertise and infrastructure in the fields of **nanotechnology, energy** and **environment, biosciences, particle and nuclear science, informatics** and **telecommunications**.
- **>700 distinguished researchers**, research support professionals and scientific associates
- **Visionary and dynamic research** community that is currently under the process of re-orientating its efforts with emphasis on **innovation** exploitation and fostering of new businesses and **synergetic cooperation with the private sector**.



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## Our research team at NCSR "Demokritos"

- **Quantitative assessment** of industrial accident and occupational **risks**, including the modeling of **exposure** via dispersion **simulations**.
- Modeling of **uncertainties and stochastic processes**, as well as on **mathematical optimization** (we have developed tools for process design, material design, selection of PPEs, etc.).
- Many major **European projects** in the area of industrial safety and risk (e.g. IntegRISK, SAFERA, TOSCA etc.). We also coordinate the **national Industrial Safety Technology Platform**, act as advisors to the Greek government regarding **regulations**, worked for the Dutch government on their **occupational risk management model** etc.
- EC nanosafety projects: **NANOREG, SCAFFOLD, NaNex, NanoTEST, NanoImpactNet** and we lead the Greek participation in **EC4SafeNano**.



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## Our research team at NCSR "Demokritos"

- We aim to join consortia addressing the following NMBP topics:
  - **NMBP-13-2018 (risk governance topic)**
  - **NMBP-14-2018 (nanoinformatics topic)**
  - **NMBP-15-2019 & NMBP-16-2020 (safe-by-design topics)**
- In particular we can enable or contribute to the following tasks



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## NMBP-14-2018

### Our expertise could enable/assist the following:

- Consideration of uncertainties / stochasticity in the mapping of material characteristics to material properties, to enable reliability assessment of alternative safe-by-design principles;
- Consideration of uncertainties / stochasticity in the integration/linking of available nanoinformatic tools towards the development of a sustainable multi-scale modelling framework for hazard prediction;
- Application of in-silico modelling / simulation of nanomaterial dispersion in the environment and living organisms.



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## NMBP-15-2019 & NMBP-16-2020

### Our expertise could enable/assist the following:

- Design nanomaterials related to safer manufacturing processes, in addition to being a safe end-product;
- Apply combinatorial optimization to systematically search for and design of safer nanomaterial alternatives.



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## NMBP-13-2018

- Our team has engaged in discussions for the **creation of a Greek cluster on nanosafety**, and the establishment of *consensus regarding the scope and governance* in the field of safety of engineered nanomaterials, knowledge transfer to **regulation** and **market** in Greece.
- The cluster will comprise our team from NCSR "Demokritos" and associated partners of H2020/EC4SafeNano, with support from the Deputy Minister for Research.
- This cluster would offer **collective expertise** on risk assessment, modeling, characterization etc., therefore, covering all the aspects of the NMBP-13-2018 topic.
- The cluster's participation in **nanosafety projects** includes major EC projects NANOREG, NANOREG II, ProSafe, eNanoMapper, EC4SafeNano etc., as well as relevant OECD work programmes.



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## My contact details

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