eNanoMapper - A Database and Ontology Framework for Nanomaterials Design and Safety Assessment

Fact Sheet

Project Information

ENANOMAPPER

Grant agreement ID: 604134

Project website

Status
Closed project

Start date
1 February 2014

End date
31 January 2017

Funded under
FP7-NMP

Overall budget
€ 4 978 333,67

EU contribution
€ 3 996 870

Coordinated by
EDELWEISS CONNECT GMBH
Switzerland

Objective

eNanoMapper will develop a data management and analysis infrastructure together with ontologies supporting the safety assessment activities of the European Nanomaterials research and development community. The project will address the requirements of safety assessment of nanomaterials by providing databases, analysis tools and ontologies for risk assessment and linking them with existing resources in this area.

The project plan involves close cooperation with NanoSafety Cluster members and other international organisations such as OECD, ISO/CEN, EC JRC, and EChA. Their requirements will guide the development of tools for experimental design, model building, and meta analysis across multiple datasets.

An ontology for nanomaterials will be developed to provide the following features: annotation of nanostructures and relevant biological properties...
annotation of nanostructures and relevant biological properties, annotation of experimental model systems (e.g. cell lines), conditions, and protocols, complex search and reasoning capabilities, and the integration of data from existing nanotoxicology sources.

Systematic physicochemical, geometrical, structural, and biological studies of nanomaterials are nearly absent in the public domain. The establishment of a universal standardisation schema and infrastructure for nanomaterials safety assessment is a key project goal. It should catalyze collaboration, integrated analysis, and discoveries from data organised within a knowledge-based framework. It will support the discovery of nanomaterial properties responsible for toxicity, the identification of toxicity pathways and nano-bio interactions from linked datasets, ontologies, omics data and external data sources.

By interfacing with statistical and data mining tools we will be able to provide scientifically sound guidelines for experimental design as well as computational models for predicting nanotoxicity. These computational models will help to design safe nanomaterials and improve the risk assessment of existing nanoparticles.

Field of science
/natural sciences/computer and information sciences/databases
/humanities/philosophy, ethics and religion/philosophy/metaphysics/ontology
/engineering and technology/nanotechnology/nano-materials
/natural sciences/computer and information sciences/data science/data mining

Programme(s)

Topic(s)

Call for proposal
FP7-NMP-2013-SMALL-7

Funding Scheme
CP-FP - Small or medium-scale focused research project

Coordinator
<table>
<thead>
<tr>
<th>Organisation</th>
<th>Address</th>
<th>Activity type</th>
<th>EU contribution</th>
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<tbody>
<tr>
<td>EDELWEISS CONNECT GMBH</td>
<td>Hochbergerstrasse 60C, 4057 Basel, Switzerland</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
<td>€ 876 225,60</td>
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<td>Administrative Contact: Barry Hardy (Dr.)</td>
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<td>Contact the organisation [link]</td>
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<tr>
<td>TEKNOLOGIAN TUTKIMUSKESKUS VTT</td>
<td>Tekniikantie 4 A, 02044 VTT Espoo, Finland</td>
<td>Research Organisations</td>
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<td>Administrative Contact: Roland Grafström (Prof.)</td>
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<tr>
<td>NATIONAL TECHNICAL UNIVERSITY OF ATHENS - NTUA</td>
<td>Heroon Polytechniou 9, Zographou Campus, 15780 Athina, Greece</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 355 960</td>
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<td>Administrative Contact: Georgia Mertzelou (Ms.)</td>
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Participants (9)
IDEACONSULT LIMITED LIABILITY COMPANY
Bulgaria
EU contribution
€ 373 840
Address
Angel Kanchev 4
1000 Sofia
Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)
Contact the organisation
Administrative Contact
Luben Boyanov (Dr.)

KAROLINSKA INSTITUTET
Sweden
EU contribution
€ 257 700
Address
Nobels Vag 5
17177 Stockholm
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation
Administrative Contact
Per-Olof Larsson (Mr.)

Teknologian tutkimuskeskus VTT Oy
Finland
EU contribution
€ 36 018,42
Address
Vuorimiehentie 3
02150 Espoo
Activity type
Research Organisations
EUROPEAN MOLECULAR BIOLOGY LABORATORY

- Germany
- EU contribution: €372,080
- Address: Meyerhofstrasse 1, 69117 Heidelberg
- Activity type: Research Organisations

Administrative Contact
Roland Grafström (Prof.)

UNIVERSITEIT MAASTRICHT

- Netherlands
- EU contribution: €843,334,40
- Address: Minderbroedersberg 4-6, 6200 MD Maastricht
- Activity type: Higher or Secondary Education Establishments

Administrative Contact
Phil Irving (Dr.)

MISVIK BIOLOGY OY

- Finland
- EU contribution: €361,731,58
- Address: Karjakatu 35 B, 20520 Turku
- Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

Administrative Contact
Vesa Hongisto (Dr.)