

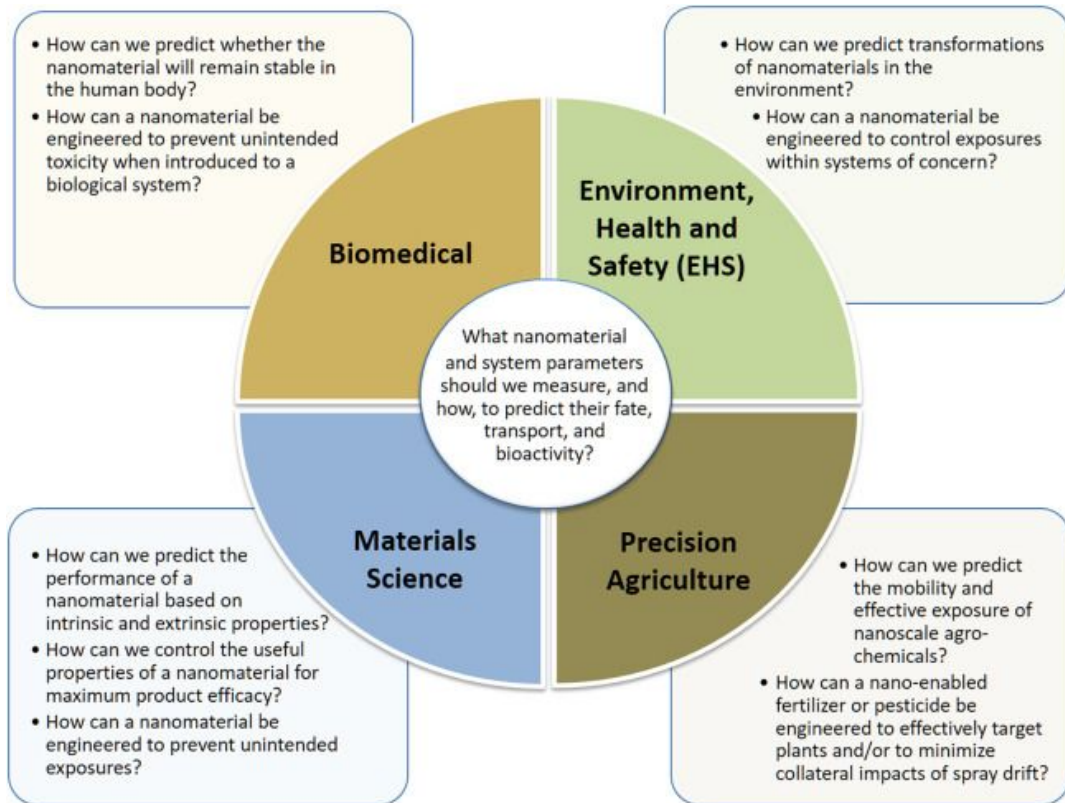
Examples on Using Wikidata to Support Nanoinformatics Projects

Egon Willighagen, 0000-0001-7542-0286
@egonwillighagen

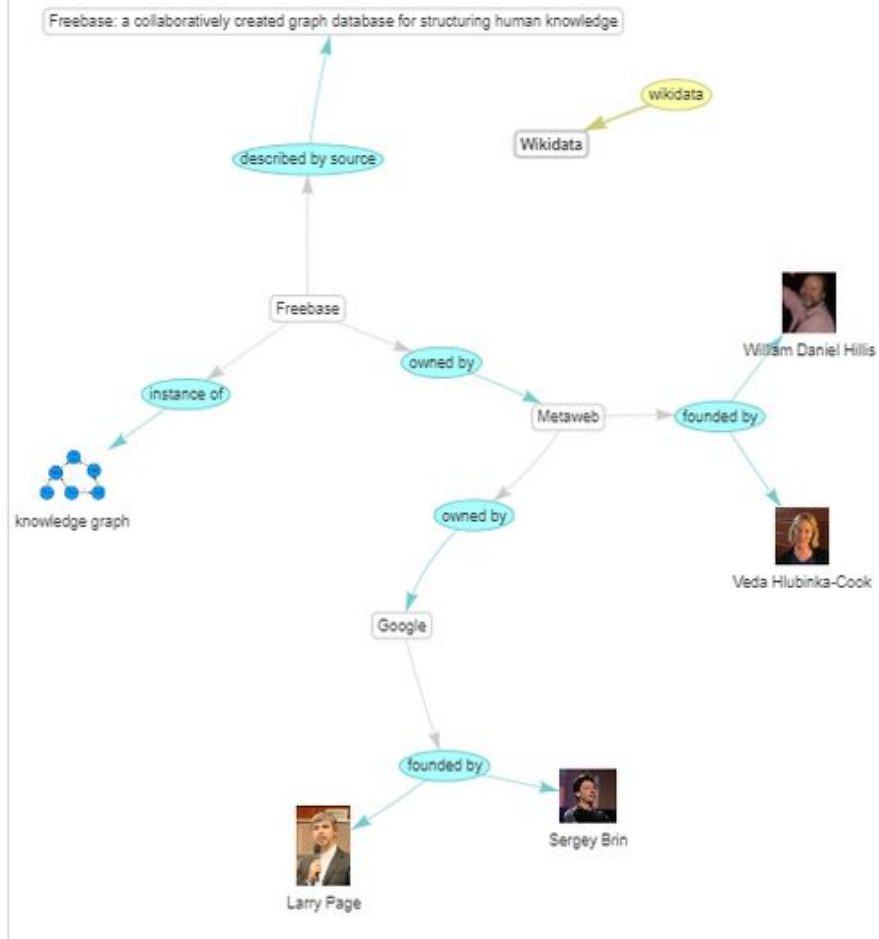


Maastricht University

Linked data



Linked data



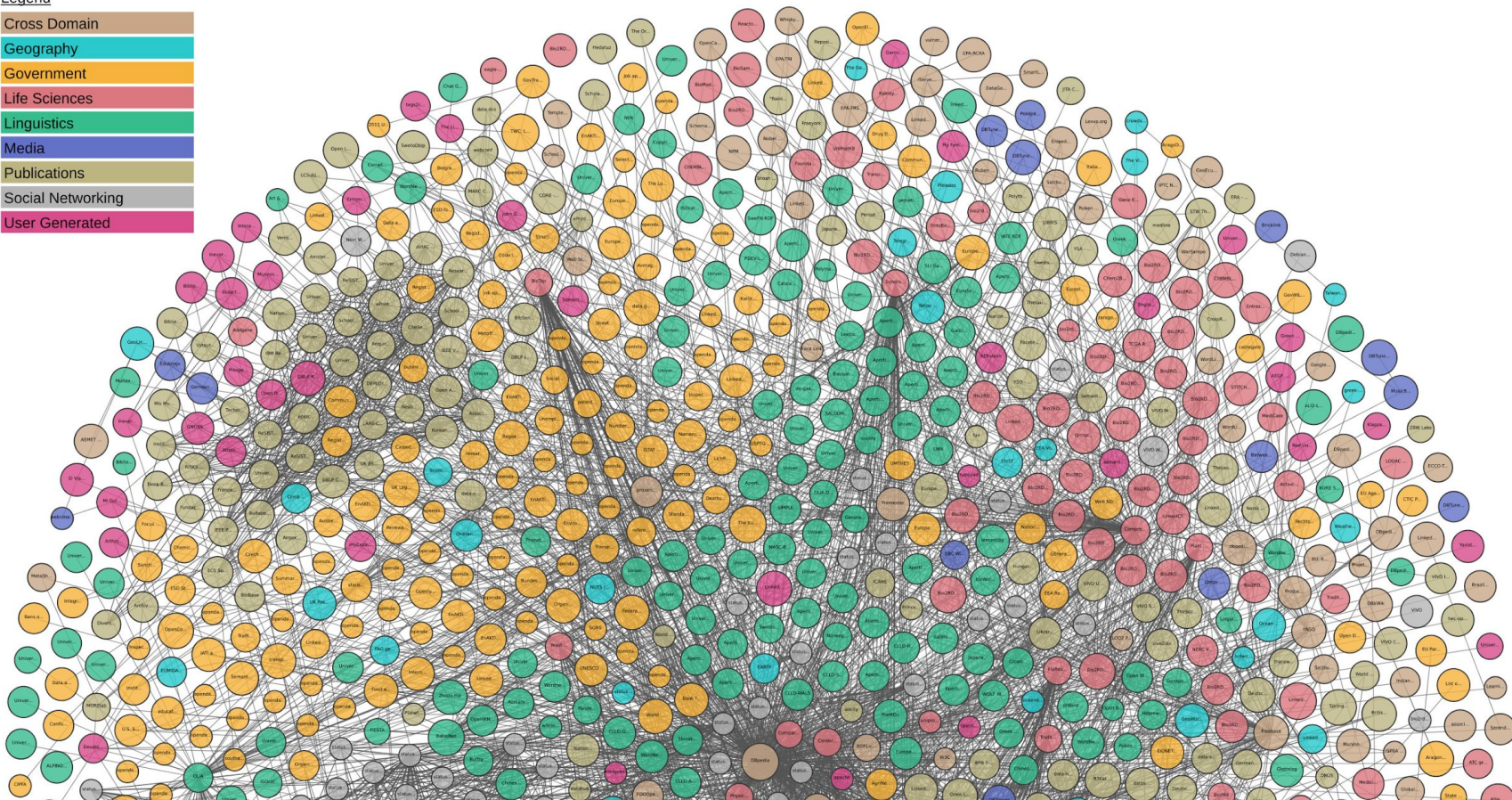
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https://commons.wikimedia.org/wiki/File:Knowledge_graph_wikidata.png

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Wikidata: machine readable spider in the web



Wikidata: machine readable spider in the web



label — Douglas Adams (Q42) — item identifier

description — English writer and humorist
Douglas Noël Adams | Douglas Noel Adams — aliases
► In more languages

Statements

property — educated at — value

rank —

statement group —

value

qualifiers

opened references

collapsed reference

educated at	St John's College
end time	1974
academic major	English literature
academic degree	Bachelor of Arts
start time	1971

▼ 2 references

stated in	Encyclopædia Britannica Online
reference URL	http://www.britannica.com/people/731.000023662/
original language of work	English
retrieved	7 December 2013
publisher	HMNB
title	Douglas Adams (English)

+ add reference

Brentwood School	
end time	1970
start time	1959

► 0 references

+ add statement

Our Nanoinformatics page in Wikidata



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Nanoinformatics

From Wikipedia, the free encyclopedia

Nanoinformatics is the application of [informatics](#) to more efficiently. It differs from [cheminformatics](#) in the formats, and data repositories.

Nanoinformatics has applications for improving work analysis of nanoparticle-based pharmaceuticals for :

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nanoinformatics (Q61911710)

informatics of nanomaterials

[edit](#)

► [Recoin: Most relevant properties which are absent](#)

▼ [In more languages](#)

Language	Label	Description	Also known as
English	nanoinformatics	informatics of nanomaterials	
German	No label defined	No description defined	
French	No label defined	No description defined	
Dutch	No label defined	No description defined	
Swedish	No label defined	No description defined	

Statements

subclass of



informatics

[edit](#)

of

nanomaterial

▼ [0 references](#)

[+ add reference](#)

[+ add value](#)

[+ add statement](#)

Wikipedia (1 entry) [edit](#) [\[move\]](#)

[en](#) [Nanoinformatics](#)

Wikibooks (0 entries) [edit](#)

Wikinews (0 entries) [edit](#)

Wikiquote (0 entries) [edit](#)

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Other sites (0 entries) [edit](#)

Example 1: OECD Testing Guidelines

- Guideline
 - Test No. 102: Melting Point/ Melting Range
 - Test No. 105: Water Solubility
 - Test No. 106: Adsorption – Desorption Using a Batch Equilibrium Method
 - Test No. 109: Density of Liquids and Solids
 - Test No. 113: Screening Test for Thermal Stability and Stability in Air
 - Test No. 116: Fat Solubility of Solid and Liquid Substances
 - Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test
 - Test No. 202: Daphnia sp. Acute Immobilisation Test
 - Test No. 203: Fish, Acute Toxicity Test
 - Test No. 301: Ready Biodegradability
 - Test No. 305: Bioaccumulation in Fish: Aqueous and Dietary Exposure
 - Test No. 306: Biodegradability in Seawater
 - Test No. 307: Aerobic and Anaerobic Transformation in Soil
 - Test No. 308: Aerobic and Anaerobic Transformation in Aquatic Sediment Systems
 - Test No. 309: Aerobic Mineralisation in Surface Water - Simulation Biodegradation Test
 - Test No. 310: Ready Biodegradability - CO₂ in sealed vessels (Headspace Test)
 - Test No. 312: Leaching in Soil Columns
 - Test No. 318: Dispersion Stability of Nanomaterials in Simulated Environmental Media
 - Test No. 403: Acute Inhalation Toxicity
 - Test No. 405: Acute Eye Irritation/Corrosion
 - Test No. 406: Skin Sensitisation
 - Test No. 412: Subacute Inhalation Toxicity: 28-Day Study
 - Test No. 413: Subchronic Inhalation Toxicity: 90-day Study
 - Test No. 417: Toxicokinetics
 - Test No. 436: Acute Inhalation Toxicity - Acute Toxic Class Method
 - Test No. 442C: In Chemico Skin Sensitisation
 - Test No. 442D: In Vitro Skin Sensitisation
 - Test No. 442E: In Vitro Skin Sensitisation
 - Test No. 474: Mammalian Erythrocyte Micronucleus Test
 - Test No. 491: Short Time Exposure In Vitro Test Method for Identifying i) Chemicals Inducing Serious
 - Test No. 492: Reconstructed human Cornea-like Epithelium (RhCE) test method for identifying che
 - Test No. 501: Metabolism in Crops
- information resource

See

<https://doi.org/10.1186/s13326-015-0005-5>

Sections and individual tests

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venue

OECD Guidelines for the Testing of Chemicals, Section 1 (Q57978040)

Recently published works

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Publication date	Work	Authors
2012-10-02	Test No. 109: Density of Liquids and Solids	
2000-01-21	Test No. 106: Adsorption – Desorption Using a Batch Equilibrium Method	
1995-07-27	Test No. 102: Melting Point/ Melting Range	
1995-07-27	Test No. 105: Water Solubility	
1981-05-12	Test No. 113: Screening Test for Thermal Stability and Stability in Air	
1981-05-12	Test No. 116: Fat Solubility of Solid and Liquid Substances	

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Search:

Count	Topic	Example work
2	solid	Test No. 109: Density of Liquids and Solids
2	liquid	Test No. 109: Density of Liquids and Solids

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Test No. 109: Density of Liquids and Solids (Q60233153)

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Order	Author	Orcid
No data available in table		

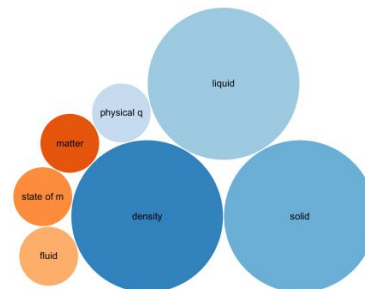
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Topic scores

Topics based on a weighting between main subject of work, cited and citing works.



Example 2: JRC representative industrial nanomaterials

2. The mappings

The below table gives the ontology IRIs for each of the JRC representative nanomaterials. Important to note is that these mappings do not NM-xxx synonyms; these are explicitly different in the ontology.

JRC nanomaterial Code	Ontology IRI	Wikidata
JRCNM01000a	ENM_9000074 http://purl.enanomapper.org/onto/ENM_9000074	Q27918612
JRCNM01001a	ENM_9000075 http://purl.enanomapper.org/onto/ENM_9000075	Q47461406
JRCNM01002a	ENM_9000076 http://purl.enanomapper.org/onto/ENM_9000076	Q47461416
JRCNM01003a	ENM_9000083 http://purl.enanomapper.org/onto/ENM_9000083	Q47461418
JRCNM01004a	ENM_9000084 http://purl.enanomapper.org/onto/ENM_9000084	Q47461419
JRCNM01005a	ENM_9000077 http://purl.enanomapper.org/onto/ENM_9000077	Q47461422
JRCNM01100a	ENM_9000078 http://purl.enanomapper.org/onto/ENM_9000078	Q47462004
JRCNM01101a	ENM_9000086 http://purl.enanomapper.org/onto/ENM_9000086	Q47462008
JRCNM02000a	ENM_9000087 http://purl.enanomapper.org/onto/ENM_9000087	Q47462022
JRCNM02001a	ENM_9000088 http://purl.enanomapper.org/onto/ENM_9000088	Q47468470
JRCNM02002a	ENM_9000089 http://purl.enanomapper.org/onto/ENM_9000089	Q47468473
JRCNM02003a	ENM_9000090 http://purl.enanomapper.org/onto/ENM_9000090	
JRCNM02004a	ENM_9000091 http://purl.enanomapper.org/onto/ENM_9000091	Q47468478
JRCNM02004b	ENM_9000092 http://purl.enanomapper.org/onto/ENM_9000092	
JRCNM02101a	ENM_9000237 http://purl.enanomapper.org/onto/ENM_9000237	
JRCNM02102a	ENM_9000238 http://purl.enanomapper.org/onto/ENM_9000238	Q47461933
JRCNM03300a	ENM_9000097 http://purl.enanomapper.org/onto/ENM_9000097	
JRCNM03301a	ENM_9000098 http://purl.enanomapper.org/onto/ENM_9000098	
JRCNM04000a	ENM_9000080 http://purl.enanomapper.org/onto/ENM_9000080	Q47462019
JRCNM04001a	ENM_9000081 http://purl.enanomapper.org/onto/ENM_9000081	Q47462603
JRCNM10201a	ENM_9000094 http://purl.enanomapper.org/onto/ENM_9000094	
JRCNM10404	ENM_9000093 http://purl.enanomapper.org/onto/ENM_9000093	
JRCNM62001a	ENM_9000095 http://purl.enanomapper.org/onto/ENM_9000095	
JRCNM62002a	ENM_9000096 http://purl.enanomapper.org/onto/ENM_9000096	
JRCNM62101a	ENM_9000079 http://purl.enanomapper.org/onto/ENM_9000079	



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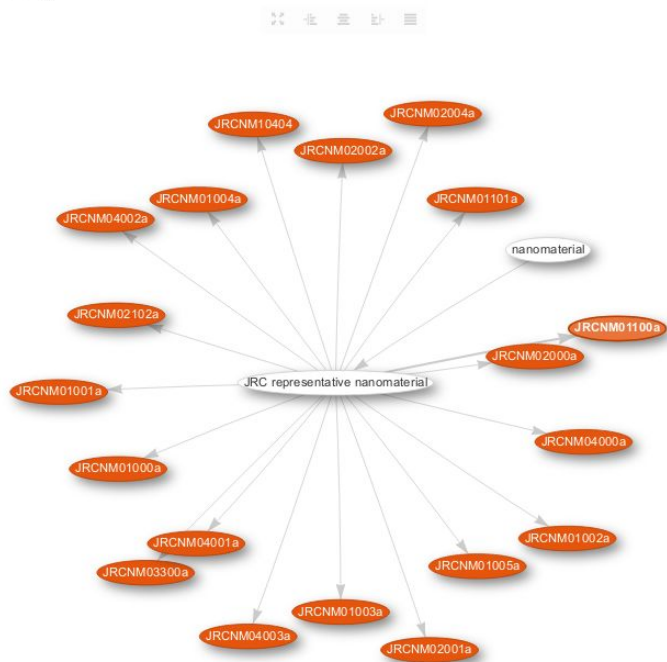
<http://specs.enanomapper.net/jrc/>

Scholia: JRC representative industrial nanomaterials

topic chemical

JRC representative nanomaterial (Q47461491)

Class Hierarchy



Recently published works on the chemical

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Search:


Date	Work	Type	Topics
2017-09-28	Fish cell lines as a tool for the ecotoxicity assessment and ranking of engineered nanomaterials.	scholarly article	JRCNM02000a // JRCNM04000a // JRCNM01101a // JRCNM01100a // JRCNM02102a // nanomaterial // toxicology
2017-06-01	Graphistrength® C100 MultiWalled Carbon Nanotubes (MWCNT): thirteen-week inhalation toxicity study in rats with 13- and 52-week recovery periods combined with comet and micronucleus assays	scholarly article	JRCNM04002a // Brown Rat // toxicology
2017-05-19	Elucidating the Role of Dissolution in CeO2 Nanoparticle Plant Uptake by Smart Radiolabeling.	scholarly article	JRCNM02102a // general chemistry // catalysis // nanoparticle
2017-04-05	Multi-walled carbon nanotube-physicochemical properties predict the systemic acute phase response following pulmonary exposure in mice.	scholarly article	JRCNM04003a // JRCNM04001a // JRCNM04000a // carbon nanotube
2017-01-03	Negligible cytotoxicity induced by different titanium dioxide nanoparticles in fish cell lines.	scholarly article	JRCNM01005a // JRCNM01004a // JRCNM01003a
2016-11-01	The JRC Nanomaterials Repository: A unique facility providing representative test materials for nanoEHS research	scholarly article	JRC representative nanomaterial // Directorate-General for Joint Research Centre // nanomaterial // toxicology
2015-11-12	Towards the standardization of nanoecotoxicity testing: Natural organic matter 'camouflages' the adverse effects of TiO2 and CeO2 nanoparticles on green microalgae.	scholarly article	JRCNM02102a // JRCNM01003a



{ } wikicite

EU NanoSafety Cluster projects

The EU NanoSafety Cluster as Linked Data visualized with Scholia

Version 2  [Journal Contribution](#) posted on 09.07.2018, 06:55 by [Egon Willighagen](#), [Najko Jahn](#), [Finn Arup Nielsen](#)

At a recent hackathon organized by the European Research Council, GeneWiki, and others, a group of 25 researchers came together in Berlin to work on ontologically modelling research grants in Wikidata. During this meeting the EU NanoSafety Cluster was used as use case study, resulting in new linked data around the cluster. The Scholia platform was extended with a Project aspect, more than 40 projects have been added to Wikidata, and almost 500 journal articles associated with their project. The result can be viewed at tools.wmflabs.org/scholia/project/Q27949537.

FUNDING

731032

HISTORY

First online date: **09.07.2018**

Posted date: **09.07.2018**

413
views

131
downloads

0
citations



CATEGORIES

- [Nanochemistry and Supramolecular Chemistry](#)

KEYWORD(S)

[EU NanoSafety Cluster](#)

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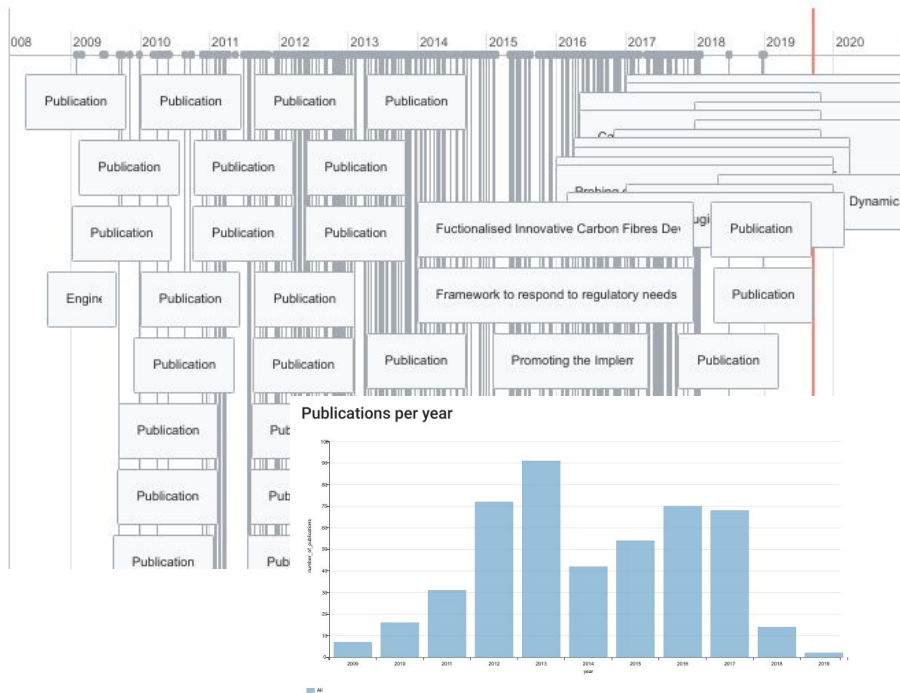
[Endnote](#)

[DataCite](#)

10.6084/m9.figshare.6727931

EU NanoSafety Cluster projects

Timeline



Recently published works about or funded by the project

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Search:

Date	Work	Type	Topics
2019-01-01	Modeling cell line-specific recruitment of signaling proteins to the insulin-like growth factor 1 receptor	scholarly article	Modelling and Simulation // IGF1R
2019-01-01	A safe-by-design tool for functionalised nanomaterials through the Enalos Nanoinformatics Cloud platform	scholarly article	nanomaterial // cloud computing // nanoinformatics
2018-12-21	Introducing WikiPathways as a Data-Source to Support Adverse Outcome Pathways for Regulatory Risk Assessment of Chemicals and Nanomaterials	scholarly article	molecular medicine // WikiPathways // Adverse outcome pathway
2018-07-02	The EU NanoSafety Cluster as Linked Data visualized with Scholia	article	Wikidata // linked data // EU NanoSafety Cluster // Scholia
2018-07-01	Advanced tools for the safety assessment of nanomaterials	scholarly article	condensed matter physics // biomedical engineering // nanomaterial // bioengineering // safety
2018-01-31	Silver nanoparticles as a medical device in healthcare settings: a five-step approach for candidate screening of coating agents.	scholarly article	
2018-01-27	Environmental Impacts by Fragments Released from Nanoenabled Products: A Multiassay, Multimaterial Exploration by the SUN Approach.	scholarly article	
2018-01-26	Transformations of Nanoenabled Copper Formulations Govern Release, Antifungal Effectiveness, and Sustainability throughout the Wood Protection Lifecycle.	scholarly article	

<https://tools.wmflabs.org/scholia/project/Q27949537>



Acknowledgments

This work received funding from the European Union's Horizon 2020 research and innovation programme via the NanoCommons project under grant agreement No [731032](#) and eNanoMapper project under grant agreement No [604134](#), and from the Alfred P. Sloan Foundation under grant number [G-2019-11458](#).



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