Examples on Using Wikidata to Support Nanoinformatics Projects

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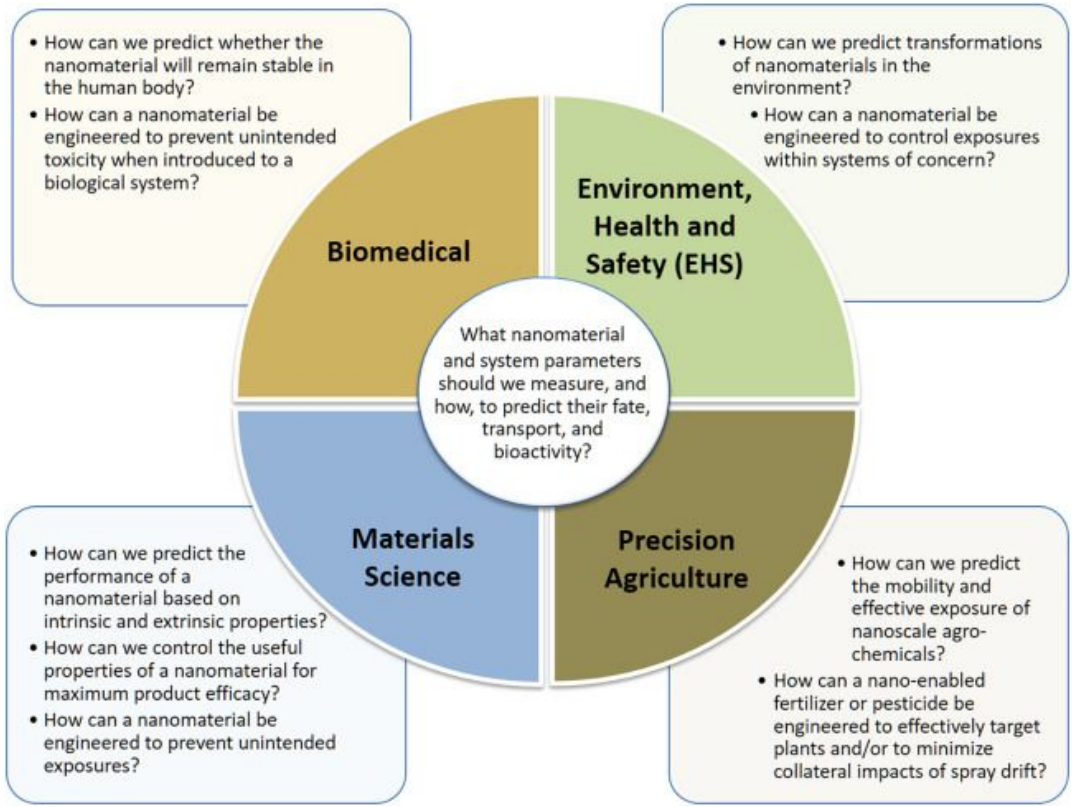
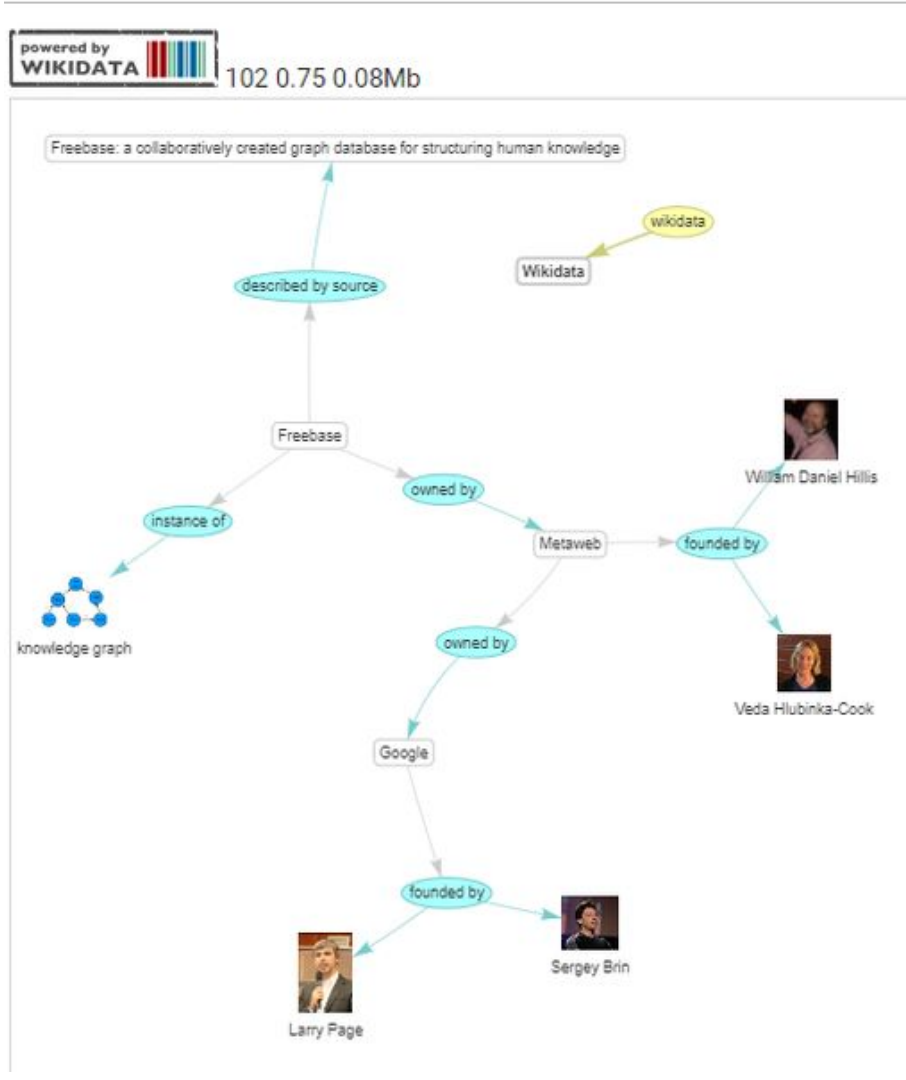
Linked data



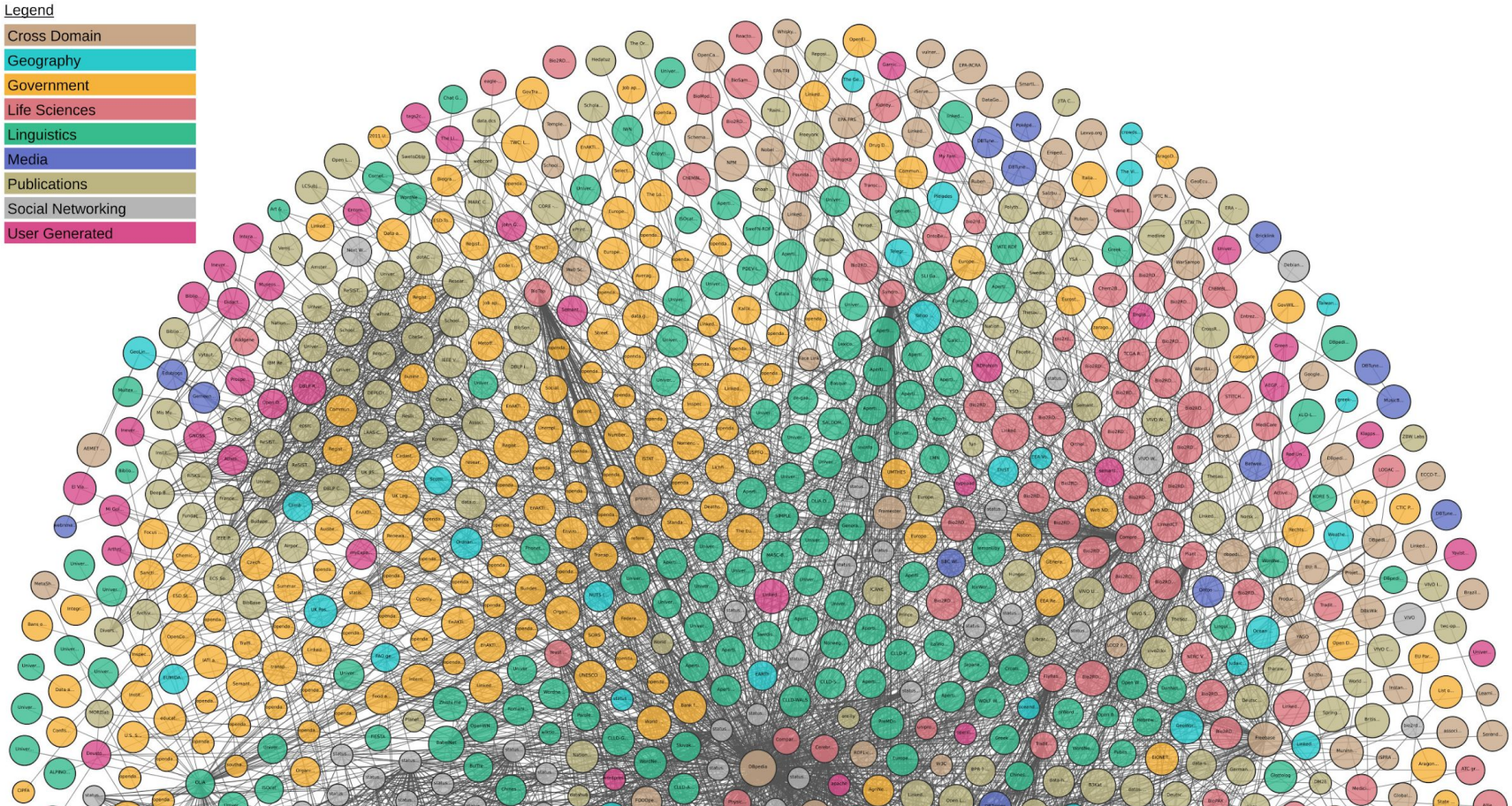
https://doi.org/10.1016/j.impact.2017.11.002 img:CC-BY-ND-NC (sorry)

Linked data



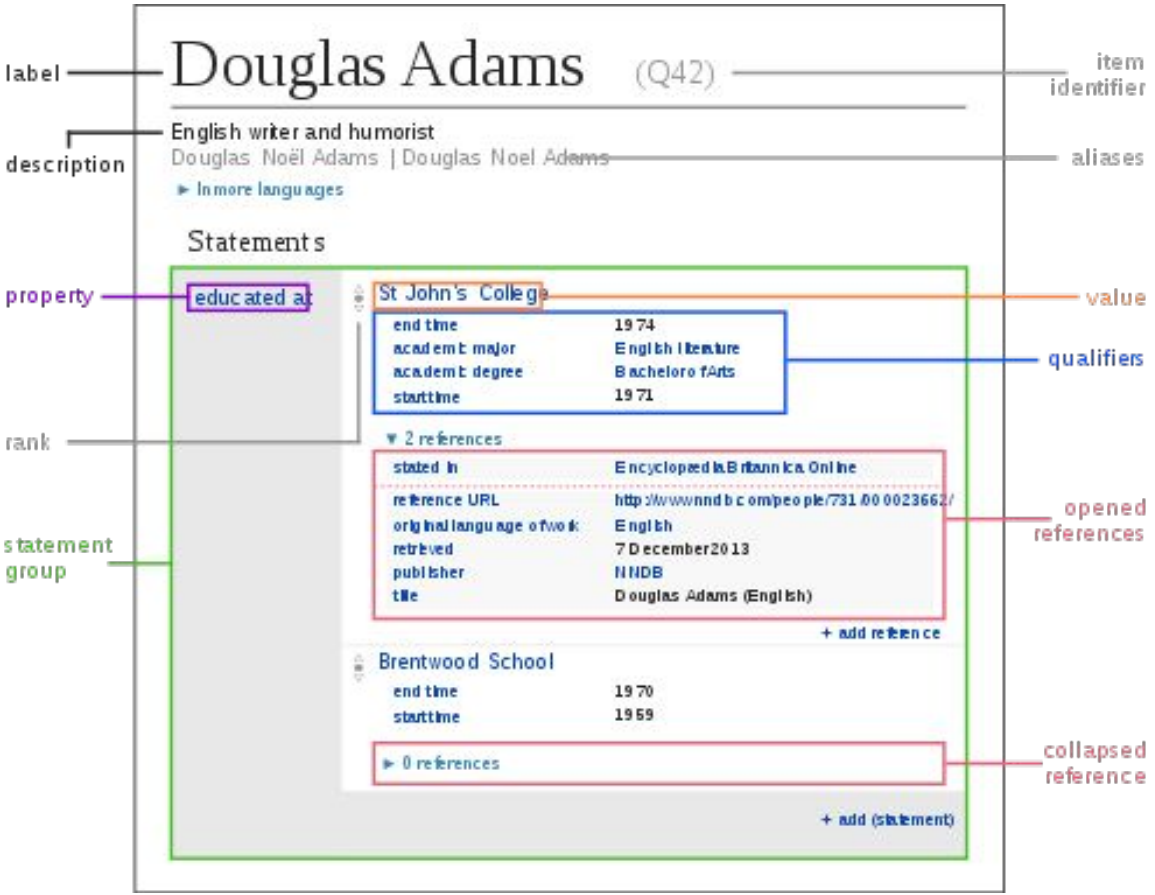
Gyuri.Lajos, img:CC-BY:
https://commons.wikimedia.org/wiki/File:Knowledge_graph_wikidata.png

Linked data cloud (www.lod-cloud.net, img:CC-BY)



Wikidata: machine readable spider in the web

Wikidata: machine readable spider in the web



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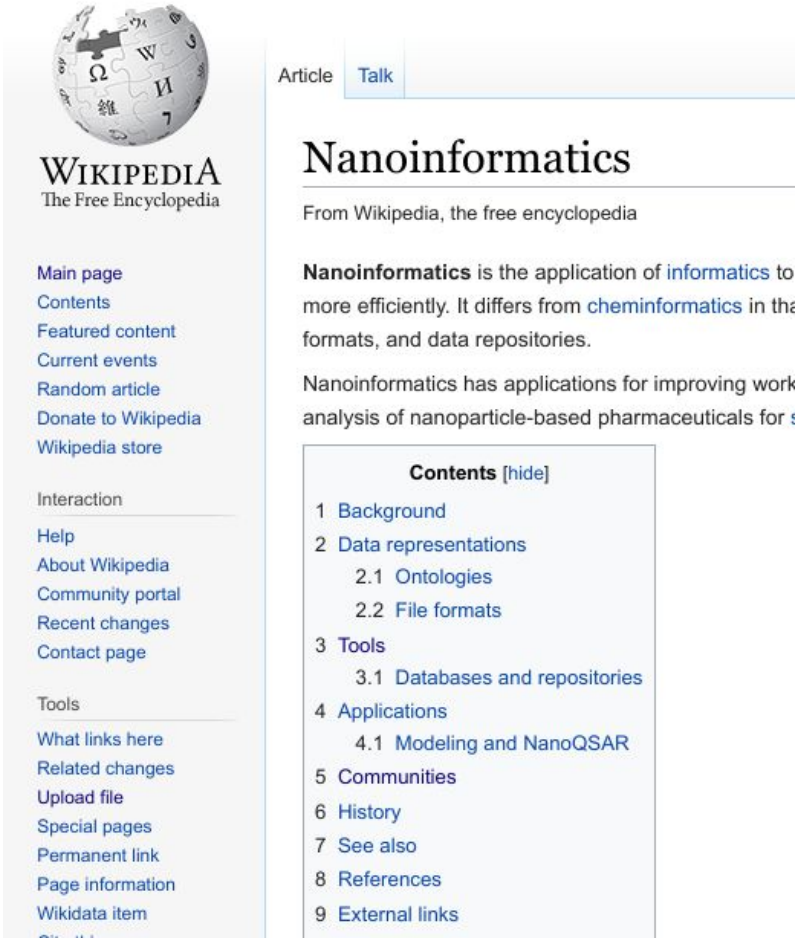
Our Nanoinformatics page in Wikidata



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Nanoinformatics

From Wikipedia, the free encyclopedia

Nanoinformatics is the application of informatics to
more efficiently. It differs from cheminformatics in tha
formats, and data repositories.

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

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2 Data representations
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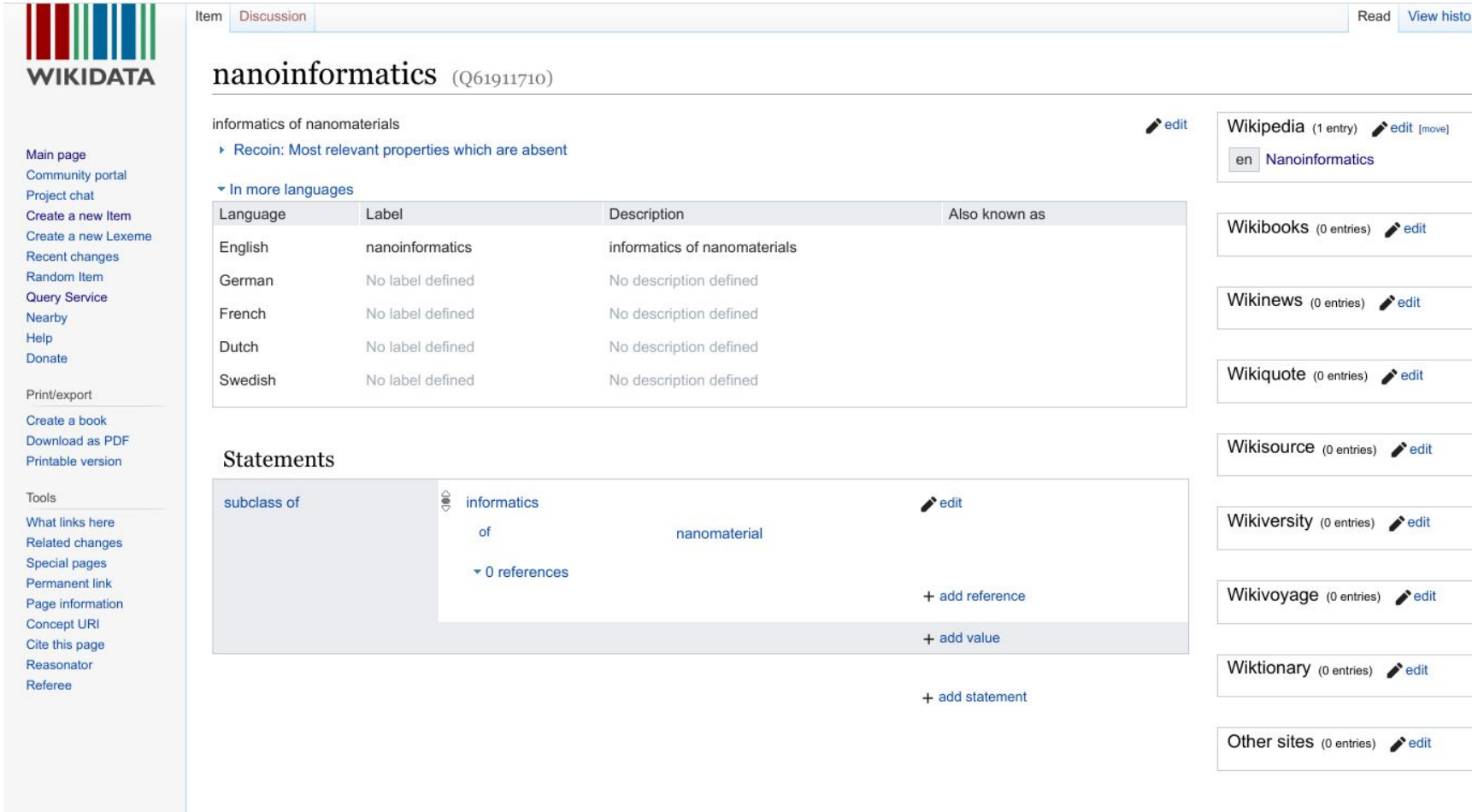
“Our” Nanoinformatics page in Wikidata



Example 1: OECD Testing Guidelines

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

Sections and individual tests

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

Recently published works

Show 10 entries Search:

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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Showing 1 to 6 of 6 entries Previous 1 Next

Topics

Show 10 entries 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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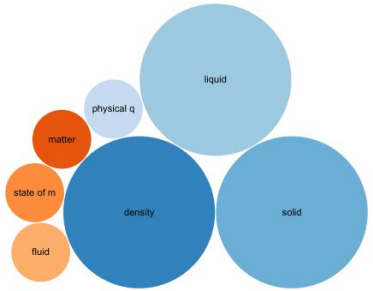
Showing 0 to 0 of 0 entries Previous Next

Topic scores

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



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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 synonymes; 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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ENM
eNanoMapper

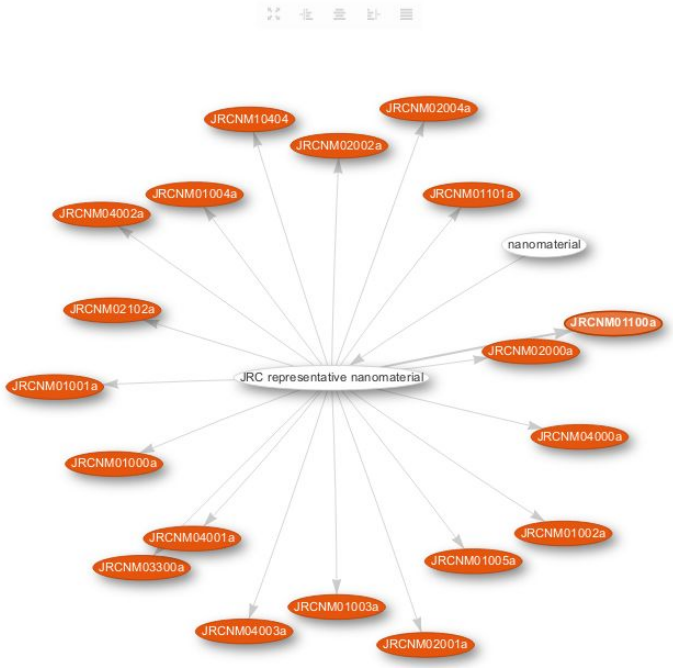
http://specs.enanomapper.net/jrc/

Scholia: JRC representative industrial nanomaterials

topic | chemical

JRC representative nanomaterial (Q47461491)

Class Hierarchy



Recently published works on the chemical RSS

Show 10 entries 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

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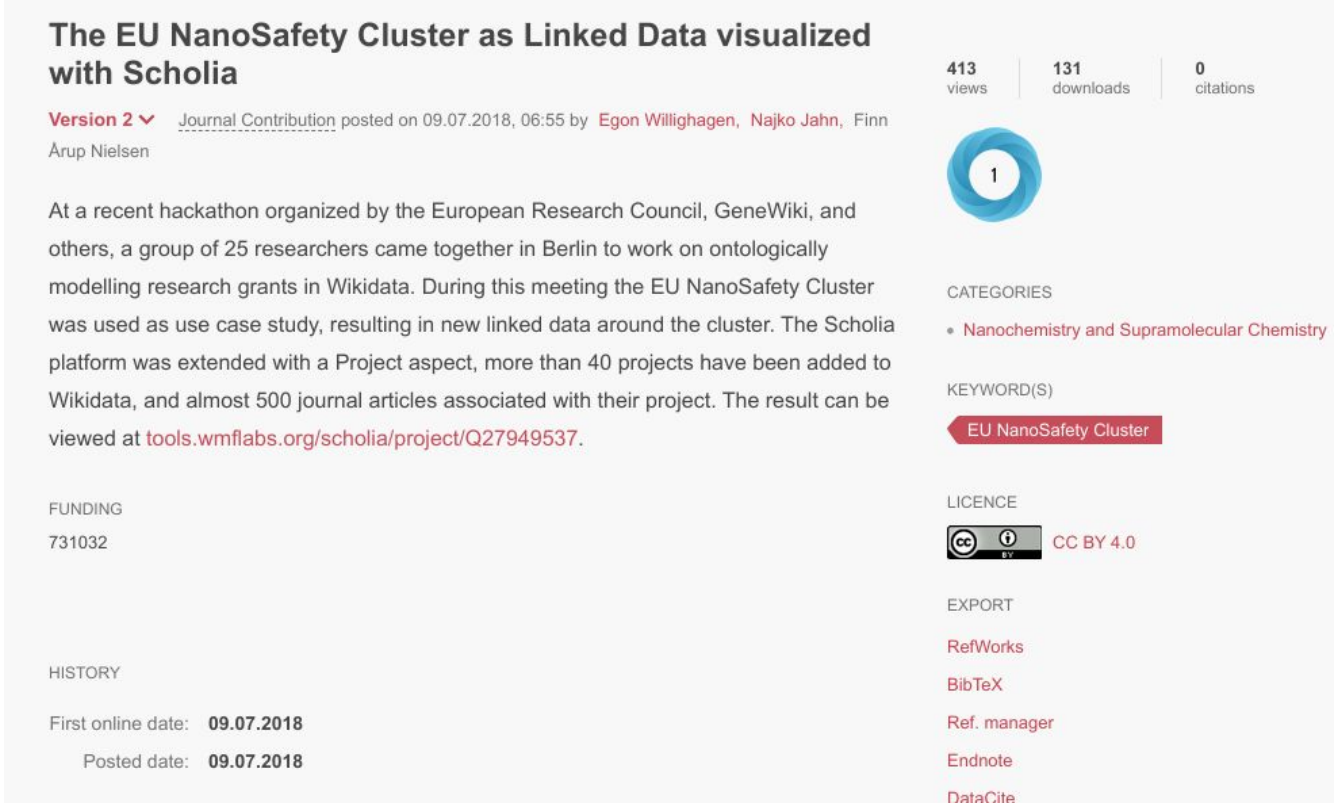
EU NanoSafety Cluster projects



The EU NanoSafety Cluster as Linked Data visualized with Scholia

413 views | 131 downloads | 0 citations

Version 2 Journal Contribution posted on 09.07.2018, 06:55 by Egon Willighagen, Najko Jahn, Finn Årup 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

CATEGORIES

- Nanochemistry and Supramolecular Chemistry

KEYWORD(S)

EU NanoSafety Cluster

LICENCE

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EXPORT

RefWorks

BibTeX

Ref. manager

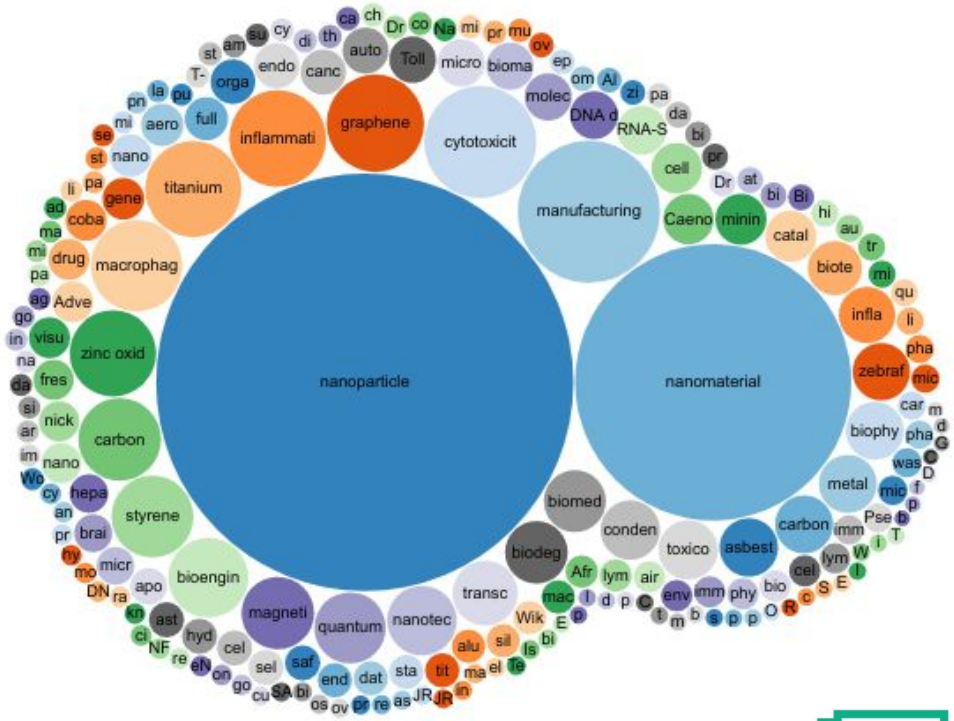
Endnote

DataCite

10.6084/m9.figshare.6727931

EU NanoSafety Cluster projects

Project Partners



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

doi: 10.3897/RIO.5.E35820

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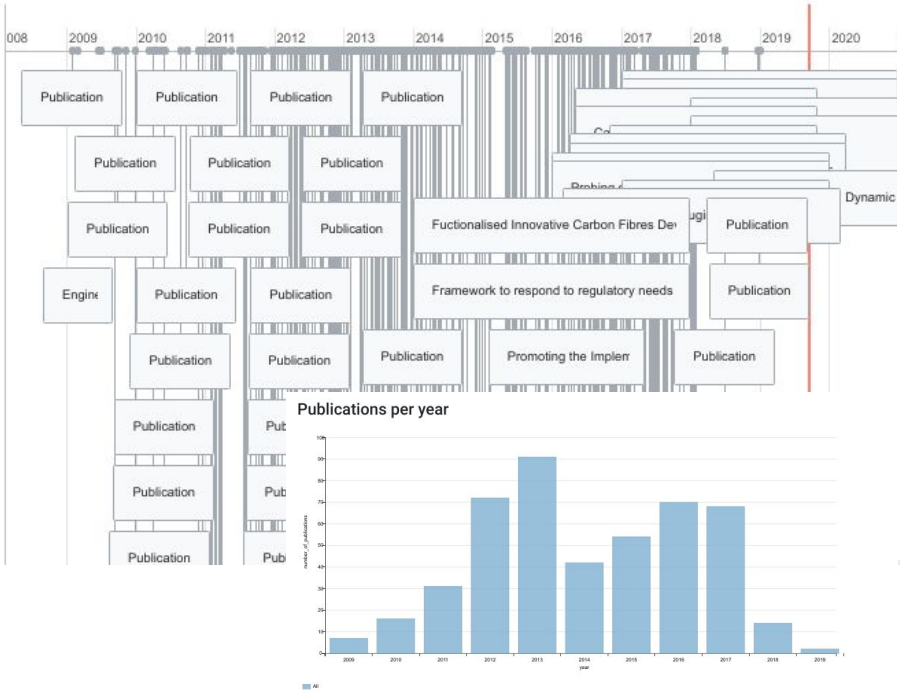
EU NanoSafety Cluster projects

Timeline



Recently published works about or funded by the project

Show 10 entries 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

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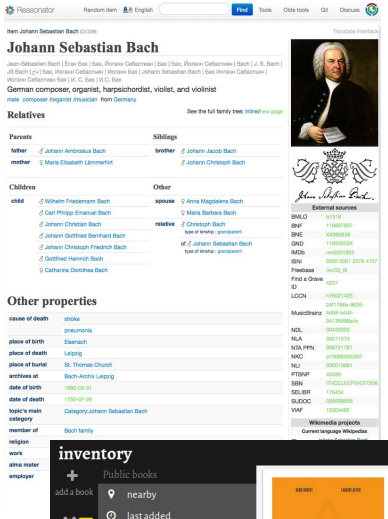
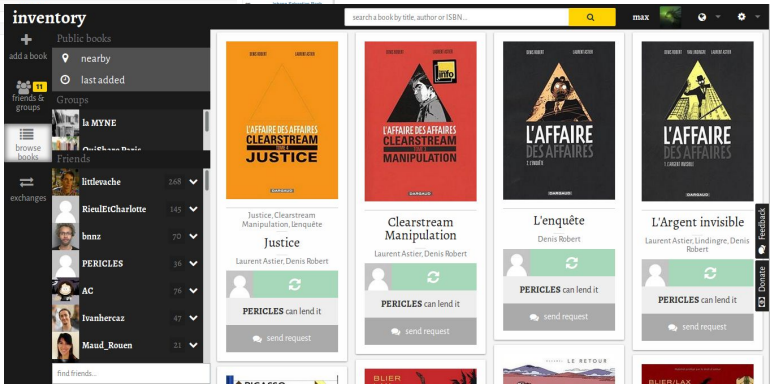
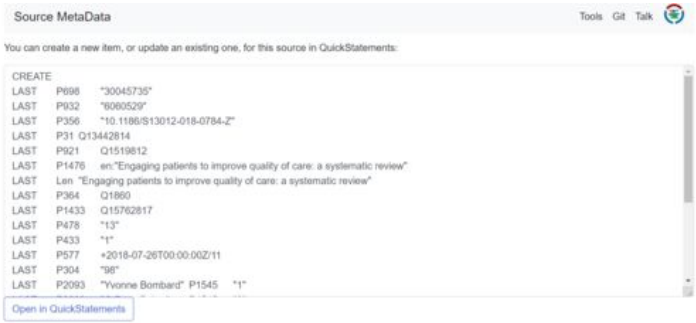
Wikidata rich ecosystem







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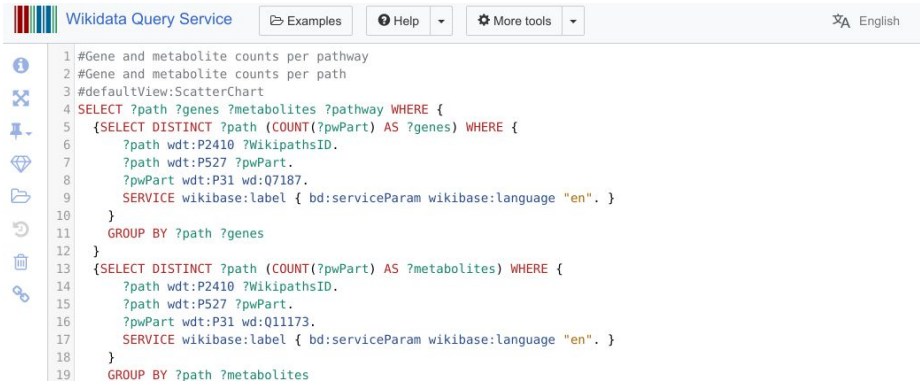

Acknowledgments

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