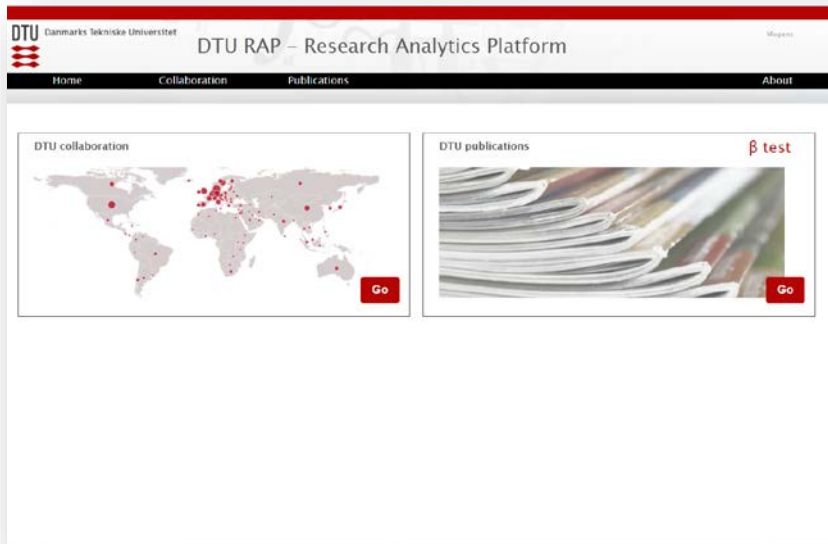# DTU Research Analytics Platform – Collaboration module

Agenda

1. Intro
2. Demonstration of the Collaboration module
3. Quick look at the Publication Search module
4. Next steps

1. Intro

The DTU Research Analytics Platform (http://rap.adm.dtu.dk/) presents data and calculations from Web of Science and InCites in a fast and simple way, adapted to DTU needs and preferences. It is updated monthly – and, hopefully, easy to use. - DTU RAP is open to everyone with a campus login.
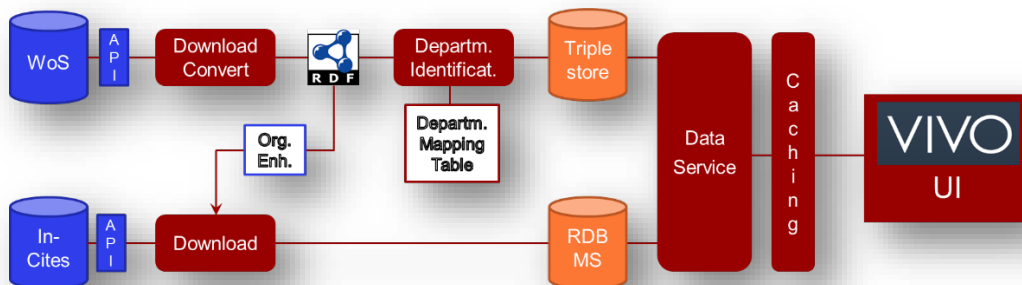
We employ two data processing pipelines, one for each of the external databases. General software framework and ontology comes from the VIVO project (Cornell, U Florida, Duke, Stanford etc.). We have contributed open source code to handle the WoS/InCites data and produce the analytical reports. Data-wise, we continuously map the many variants of DTU department names (>2500) to 30 current names (including Administration and Unknown). Development is part of the OPERA project, initially funded by DEFF now by the ministry - see also http://rap.adm.dtu.dk/vivo/aboutProject

Collaboration is the first module to go live. At the end of the presentation, we'll take a quick look at the Publication Search module – and the next modules to come.

2. Demonstration of the collaboration module

The final product of the Collaboration module is a detailed analytical report of the collaboration between DTU and a chosen partner organization – to view online and exploit the many hyperlinks going deep into certain aspects – or to download as an offline spreadsheet, which may be shared with those that cannot login due to data license conditions.

There are four ways to find and select a partner organization – and this exploration may provide useful insights by itself:

1. Exploring at a world map – zoom and click
2. By list of countries – browse or search
3. By list of organizations – browse or search
4. By list of subjects – browse or search

Moreover, you may explore this for the entire DTU university or for a specific DTU department.

Let's look at the world map:
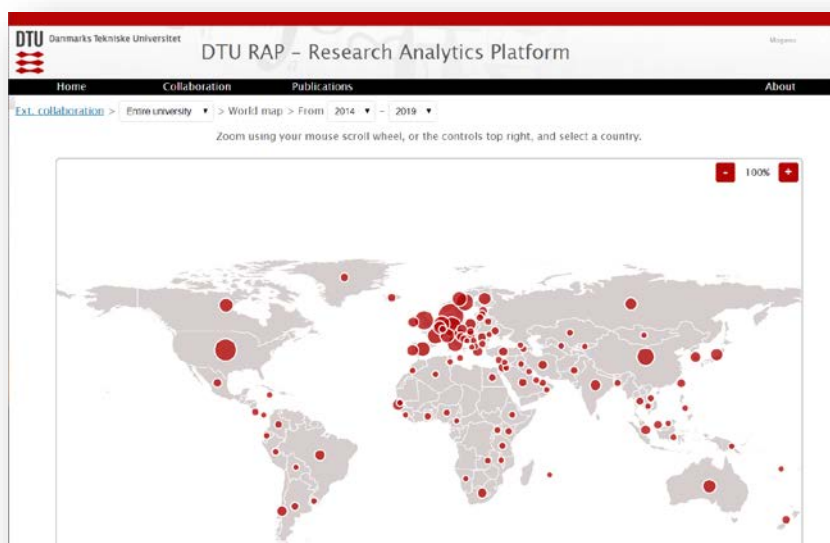
Note that by default we're looking at the entire university and the latest 5-6 years.

We can zoom in on – for example – Europe, and see that we have 2203 co-publications with Germany during the set timespan.
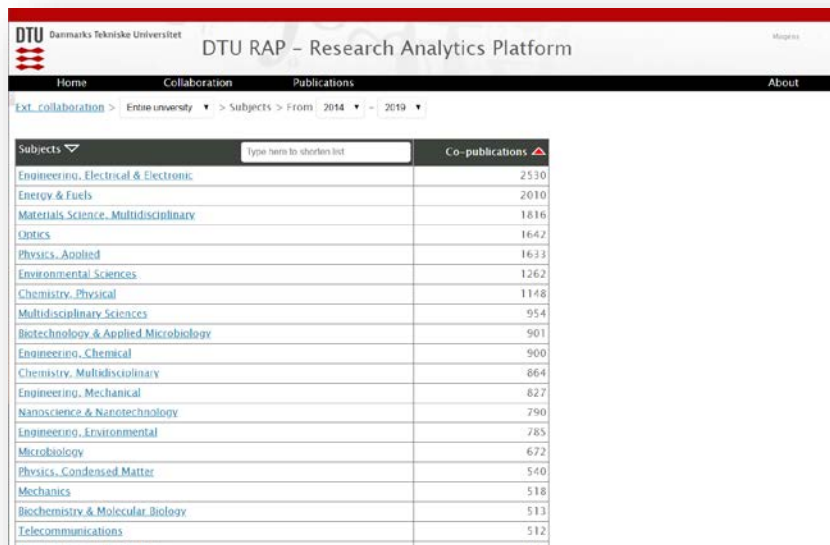
When we change the timespan to 2007-2019, the map is updated and now we see 3846 co-publications with Germany.

When we change the scope to Centre for Oil and Gas, the map is once again updated.

Similarly when we change the scope to DTU Aqua.

You could continue by clicking on a country dot, see the list of partners of that country, and select one of them for the full collaboration report.
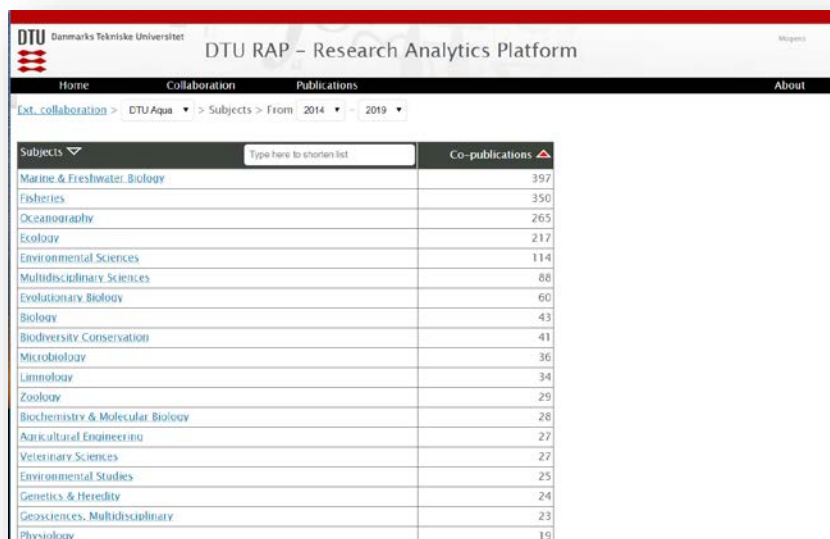
Instead, let's take a look at the list of subjects – during the last 5-6 years
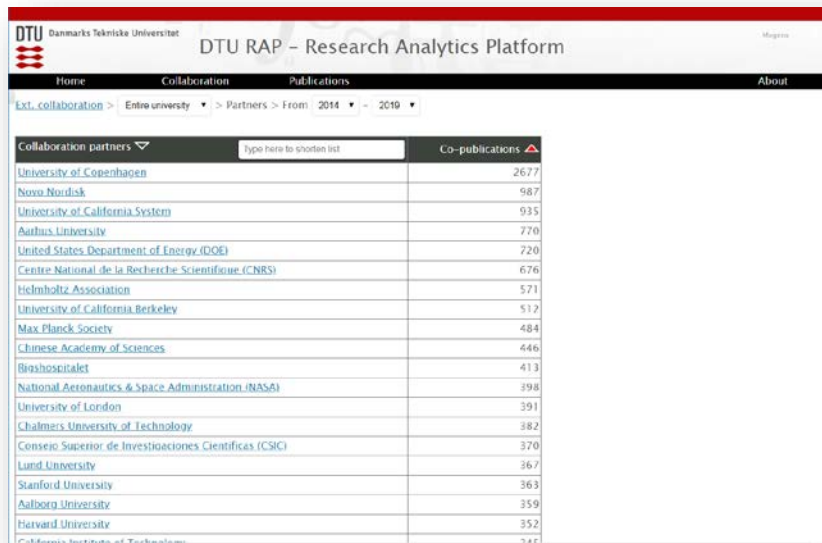

If we look at "Energy & Fuels". We see the partner organizations and the number of co-publications – from here we may request a full collaboration report for each one of them.

Instead, if we go back to the list of subjects, we may change the scope to DTU Aqua – and the list is updated to reflect the collaboration subjects of a single department:

Let's take a look at the list of partner organizations:

A very long list! - Currently 3717 partners listed for the last 5-6 years.

Like with the other lists, we may filter (or search) the list to focus on a single or just a few organizations. If we type "tech", we shorten the list to collaboration partners with "tech" in their name:

We may also search for "KAIST"
→ reduce the list to a single line
→ and then request the **full collaboration report for KAIST**

Full collaboration report in 9 sections

0. Header and table of contents

DTU collaboration report for the timespan **2014** ⌄ – **2019** ⌄

Korea Advanced Institute of Science & Technology (KAIST), South Korea

Collaboration reports cover all DTU departments – for a breakdown by department see section 6

Contents:

The header displays the timespan of the report.

If you prefer another timespan – longer or shorter – simply use the drop downs, and a revised report is generated.

Often you will set a timespan matching a pre-cached report – and experience immediate response in spite of the high number of calculations needed.

In other cases you'll have to wait half a minute or so – for the server to prepare the report.

From the table of contents, you may jump directly to a particular section of interest – for example section 6, if you're interested in the breakdown by department.

Let's take a look at the sections of the report, one by one:

1. Collaboration overview

Quick overview of the collaboration:
- How many co-publications year-by-year
- How many subject categories (out of 250 in total)?
- What are the most popular subject categories?

1. Collaboration overview

In total: 126 co-publications in 52 subject categories during timespan

Number of co-publications per year

Note: In Web of Science, the data for a particular publication year is not complete until the middle of the following year
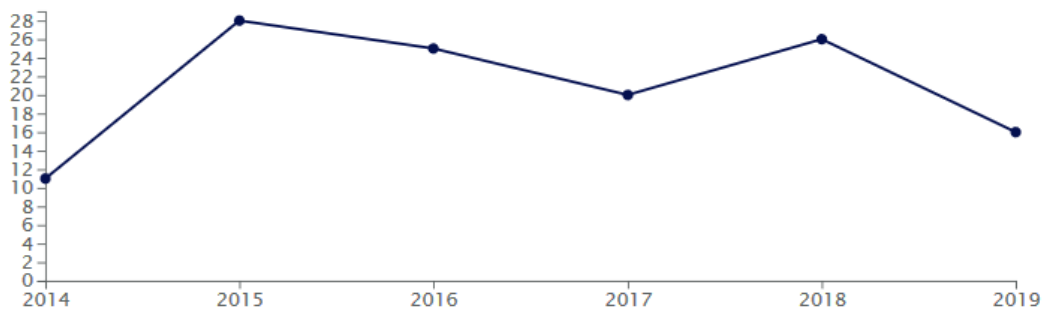
Number of co-publications by top research subjects
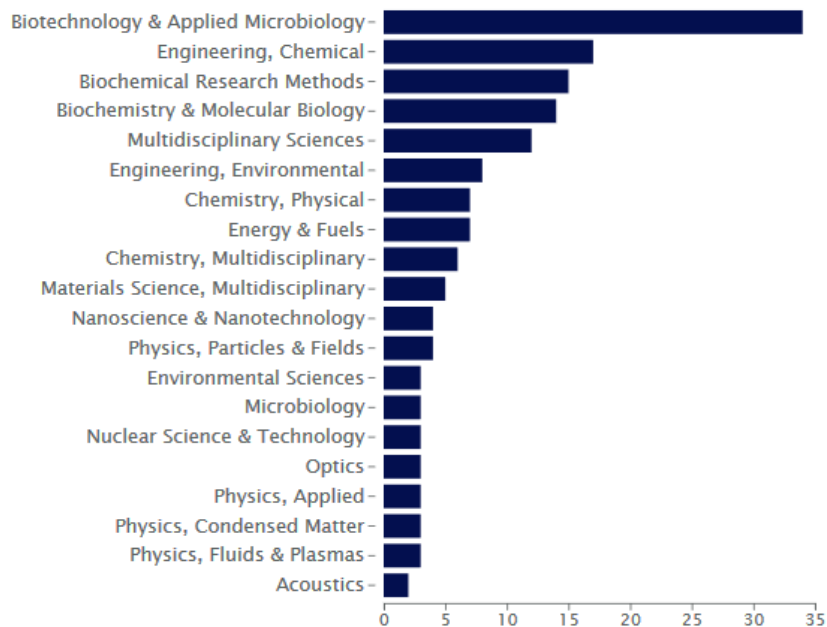
Let's reset the timespan to the full period 2007-2019 – and see how the overview changes:

1. Collaboration overview

In total: 152 co-publications in 62 subject categories during timespan

Number of co-publications per year

Note: In Web of Science, the data for a particular publication year is not complete until the middle of the following year

Number of co-publications by top research subjects

- Has the strategic partnership affected the collaboration output?

2. Compare key output and impact indicators

Compare DTU and the chosen partner in the chosen timespan:
- How many publications and citations?
- How are they doing wrt. citation impact – simple and normalized?
- How are they doing wrt. excellence – proportion of publications in top 10% and top 1% most cited?
- How much are they collaborating – internationally and with industry?

2. Compare key output and impact indicators

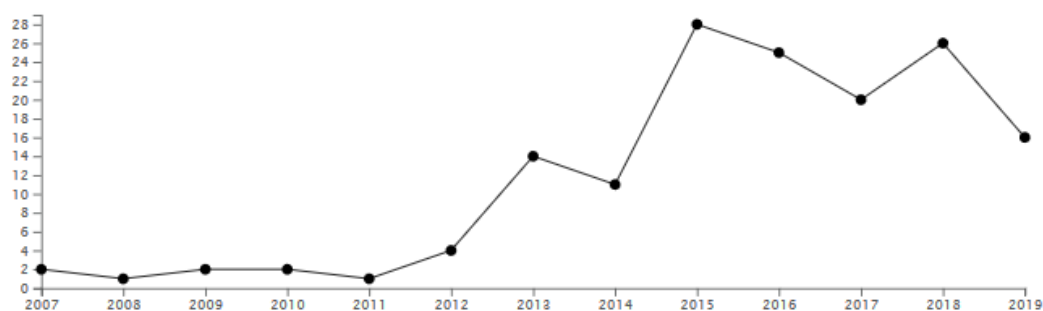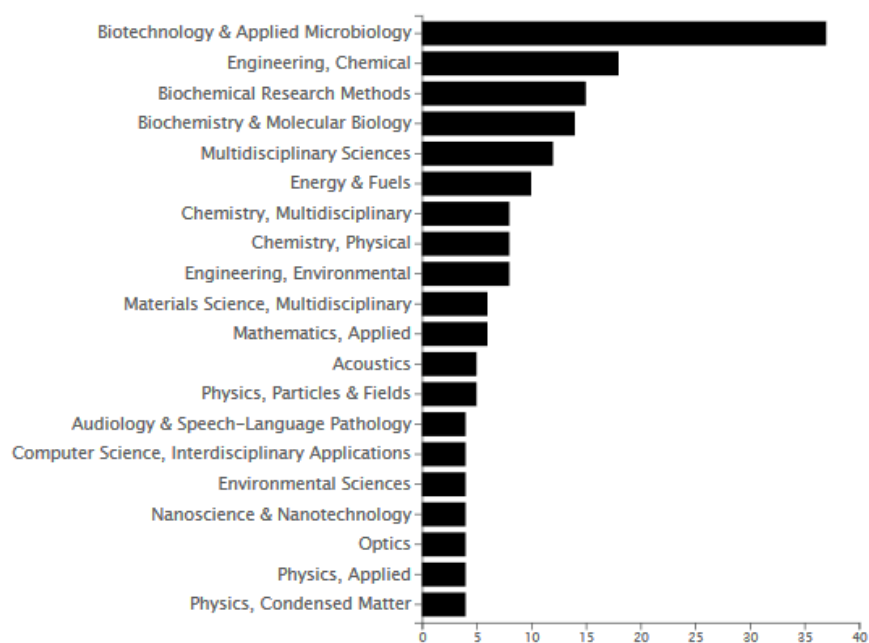| Indicator	Partner	DTU
Number of publications	39 716	41 165
Number of citations	564 042	804 466
Simple citation impact (citations / publication)	14.2	19.5
Normalised citation impact (global average 1.0) ❶	1.14	1.59
% of publications in top 10% most cited ❶	12.2%	17.8%
% of publications in top 1% most cited ❶	1.4%	2.6%
% of publications with industry collaboration	6.1%	7.0%
% of publications with international collaboration	24.9%	56.5%

3. Compare annual publication and co-publication output

Year by year:
- How many publications from the two universities and how many co-publications?

3. Compare the annual publication and co-publication output

Year	Partner pubs	DTU pubs	Co-pubs
2007	2 438	2 318	2
2008	2 544	2 237	1
2009	2 729	2 452	2
2010	2 960	2 637	2
2011	3 003	2 992	1
2012	3 107	3 057	4
2013	3 317	3 401	14
2014	3 497	3 705	11
2015	3 714	4 021	28
2016	3 845	4 205	25
2017	3 712	4 454	20
2018	3 625	4 153	26
2019	1 225	1 533	16

4. Compare partner's top subjects with DTU and co-publications

Top subjects of the partner, of DTU and of the resulting co-publications:
- Sort by partner to see the partner's top 20 subjects.
- And how they rank on the DTU side?
- Are we collaborating in the partner's top 20 subjects, or outside?

4. Compare partner's top subjects with DTU and co-publications

Partner's top 20 subjects	Partner		DTU		Co-pubs
	Pubs	Rank	Pubs	Rank	
Engineering, Electrical & Electronic	8 951	1	4 734	1	3
Materials Science, Multidisciplinary	5 856	2	3 366	3	6
Physics, Applied	4 778	3	3 419	2	4
Chemistry, Multidisciplinary	3 799	4	1 500	11	8
Nanoscience & Nanotechnology	3 315	5	1 600	10	4
Chemistry, Physical	3 256	6	2 301	6	8
Telecommunications	2 856	7	1 059	17	0
Optics	2 412	8	3 365	4	4
Computer Science, Information Systems	1 819	9	473	52	1
Physics, Condensed Matter	1 726	10	1 196	16	4
Computer Science, Artificial Intelligence	1 694	11	572	39	0
Computer Science, Theory & Methods	1 610	12	949	21	1
Engineering, Mechanical	1 467	13	1 484	12	1
Energy & Fuels	1 457	14	3 193	5	10
Biotechnology & Applied Microbiology	1 191	15	1 757	8	37
Biochemistry & Molecular Biology	1 125	16	1 230	15	14
Engineering, Chemical	1 040	17	1 698	9	18
Instruments & Instrumentation	1 022	18	660	32	2
Automation & Control Systems	1 016	19	446	55	2
Computer Science, Hardware & Architecture	958	20	338	65	0

5. Compare top collaboration subjects with partner and DTU subjects

Looking at the top 20 subjects of the co-publications:
- How do they match the top 20 of the partner?
- How do they match the top 20 of DTU?
- You may follow links to review the co-publications of each subject category

5. Compare top collaboration subjects with partner and DTU subjects

Collaboration top 20 subjects	Co-pubs	Partner rank	DTU rank
Biotechnology & Applied Microbiology	37	15	8
Engineering, Chemical	18	17	9
Biochemical Research Methods	15	33	23
Biochemistry & Molecular Biology	14	16	15
Multidisciplinary Sciences	12	90	106
Energy & Fuels	10	14	5
Chemistry, Multidisciplinary	8	4	11
Chemistry, Physical	8	6	6
Engineering, Environmental	8	59	14
Materials Science, Multidisciplinary	6	2	3
Mathematics, Applied	6	42	46
Acoustics	5	56	43
Physics, Particles & Fields	5	64	121
Audiology & Speech-Language Pathology	4	134	80
Computer Science, Interdisciplinary Applications	4	24	27
Environmental Sciences	4	49	7
Nanoscience & Nanotechnology	4	5	10
Optics	4	8	4
Physics, Applied			
Physics, Condensed Mat			

Co-publications by category Biochemistry & Molecular Biology – DTU and Korea Advanced Institute of Science & Technology (KAIST)

14 total co-publications

The antiSMASH database version 2: a comprehensive resource on secondary metabolite biosynthetic gene clusters 2019-01-08

FULL TEXT VIA DOI: 10.1093/nar/gky1060 WEB OF SCIENCE: WOS:000462587400087
REFERENCES: 18 CITATIONS: 5

Systematic discovery of uncharacterized transcription factors in Escherichia coli K-12 MG1655 2018-11-16

FULL TEXT VIA DOI: 10.1093/nar/gky752 WEB OF SCIENCE: WOS:000456709700018
REFERENCES: 79 CITATIONS: 3

Systems assessment of transcriptional regulation on central carbon metabolism by Cra and CRP 2018-04-06

FULL TEXT VIA DOI: 10.1093/nar/gky069 WEB OF SCIENCE: WOS:000429009500020
REFERENCES: 61 CITATIONS: 7

The power of synthetic biology for bioproduction, remediation and pollution control: The UN's Sustainable Development Goals will inevitably require the application of molecular biology and biotechnology on a global scale 2018-04-01

6. Collaboration by DTU department

Listing all the DTU departments involved in the collaboration:
- How many co-publications for each department?
- Expand to see the departments involved on the partner side.
- Follow link to see a list of a particular department's co-publications:
  - Title of publications, involved researchers on DTU side as well as partner side.
  - Link to all details about a single publication and its citations.

6. Collaboration by DTU department

DTU department	Co-pubs	Partner departments
DTU Biosustain	63	Expand to show details
DTU Environment	18	Expand to show details
DTU Physics	16	Expand to show details
DTU Chemical E		
DTU Compute		
DTU Electrical E		
DTU Nanotech		
DTU Space		
DTU departmen		
DTU Bioenginee		
DTU Chemistry		
DTU Mechanica		
DTU Systems Biology	3	Expand to show details
DTU Energy	2	Expand to show details
DTU Food	2	Expand to show details

DTU Physics	16	Collapse to hide details
	8	Dept Nucl & Quantum Engn
	3	Dept Chem
	3	Dept Chem & Biomol Engn
	2	Ctr Time Resolved Diffract
	1	Dept Nucl Quantum Engn
	1	Grad Sch Energy Environm Water & Sustainabil EEWS

Collaboration by department – DTU and Korea Advanced Institute of Science & Technology (KAIST)

3 co-publications for DTU Physics and Dept Chem, [Korea Advanced Institute of Science & Technology (KAIST)]

Atomistic characterization of the active-site solvation dynamics of a model photocatalyst 2016-11-28

Full Text via DOI: 10.1038/ncomms13678 Web of Science: WOS:000388643800001

References: 39 Citations: 20

DTU Physics	Dept Chem
Kjaer, Kasper S. Nielsen, Martin M. van Driel, Tim B. Christensen, Morten Harlang, Tobias Haldrup, Kristoffer	Kim, Kyung Hwan Ihee, Hyotcherl Kim, Jong Goo

Filming the Birth of Molecules and Accompanying

Full Text via DOI: 10.1021/ja312513w Web of Sc

References: 53 Citations: 33

DTU Physics	Dept Chem
Moller, Klaus B. Petersen, Jakob	Lee, Jae Hyuk Ihee, Hyotcherl Kim, Jeongho

Atomistic characterization of the active-site solvation dynamics of a model photocatalyst

van Driel, TB (van Driel, Tim B.)[2, 1]   Kim, JG (Kim, Jong Goo)[9, 8]   Haldrup, K (Haldrup, Kristoffer)[1]
Kim, KH (Kim, Kyung Hwan)[9, 12, 8]   Ihee, H (Ihee, Hyotcherl)[9, 8]   Kim, J (Kim, Jeongho)[10]
Lemke, H (Lemke, Henrik)[13, 2]   Sun, Z (Sun, Zheng)[3]   Sundstrom, V (Sundstrom, Villy)[4]
Zhang, WK (Zhang, Wenkai)[14, 3]   Zhu, DL (Zhu, Diling)[2]   Kjaer, KS (Kjaer, Kasper S.)[4, 1, 3]
Moller, KB (Moller, Klaus B.)[5]   Nielsen, MM (Nielsen, Martin M.)[1]   Gaffney, KJ (Gaffney, Kelly J.)[3]
Hartsock, RW (Hartsock, Robert W.)[3]   Dohn, AO (Dohn, Asmus O.)[11, 5]   Harlang, T (Harlang, Tobias)[4, 1]
Chollet, M (Chollet, Matthieu)[2]   Christensen, M (Christensen, Morten)[1]   Gawelda, W (Gawelda, Wojciech)[7, 6]
Henriksen, NE (Henriksen, Niels E.)[5]

Abstract
The interactions between the reactive excited state of molecular photocatalysts and surrounding solvent dictate reaction mechanisms and pathways, but are not readily accessible to conventional optical spectroscopic techniques. Here we report an investigation of the structural and solvation dynamics following excitation of a model photocatalytic molecular system [Ir-2(dimen)(4)](2+), where dimen is para-

7. Collaboration by DTU researcher (top 20)

Listing the 20 most active DTU researchers in this collaboration in this timespan:

- How many co-publications for each researcher?
- Expand to see the researchers involved on the partner side.
- Follow link to all the co-publications of a particular researcher.

7. Collaboration by DTU researcher (top 20)

DTU researcher	Co-pubs	Partner researcher
Lee, Sang Yup	34	Expand to show details
Weber, Tilmann	17	Expand to show details
Kildegaard, Helene Faustrup	15	Expand to show details
Kim, Hyun Uk	15	Expand to show details
Lee, Gyun Min	15	Expand to show details
Hwang, Yu-Hoon	14	Expand to show details
Gani, Rafiqul	11	Expand to show details
Andersen, Henrik Rasmus	10	Expand to show details
Palsson, Bernhard O.	10	Expand to show details
Blin, Kai	9	Expand to show details
Jacobsen, A. S.		
Leipold, Frank		
Naulin, Volker		
Nielsen, Anders Henry		
Rasmussen, Jens Juul		
Salewski, Mirko		
Thrysoe, Alexander S.		
Kol, Stefan		
Christensen, Ole Bossing		
Hansen, Henning Gram		

Palsson, Bernhard O.	10	Collapse to hide details
	6	Cho, Byung-Kwan
	3	Lee, Sang Yup
	2	Cho, Suhyung
	1	Cho, Yoo-Bok
	1	Hwang, Kyu-Sang
	1	Hwang, Soonkyu
	1	Kim, Hyun Uk
	1	Kim, Sun Chang
	1	Lee, Gyun Min
	1	Lee, Namil
	1	Lee, Yongjae
	1	Park, Jin Hyoung

8. Collaboration by funder (top 20)

Listing the 20 most used funders in this collaboration in this timespan. NB:
- Not all publications provide funding details.
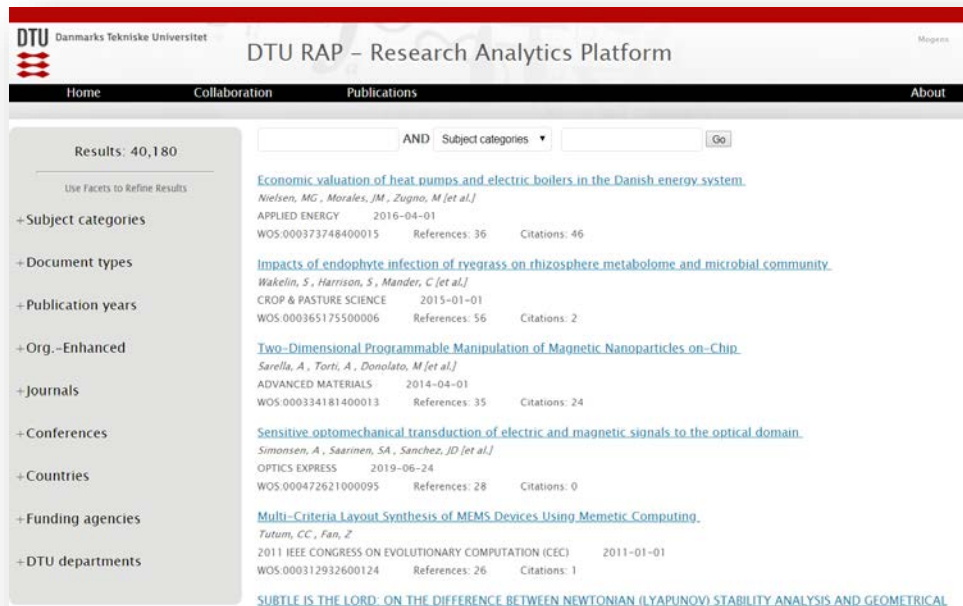- Funder names are not (yet) normalized, but Clarivate is working to achieve this soon.

8. Collaboration by funder (top 20)

Funder	Co-pubs
NNF Center for Biosustainability	28
Novo Nordisk Fonden	28
NOVO Nordisk Foundation	14
Ministry of Education, Science and Technology	9
EURATOM research and training programme	7
Ministry of Science, ICT and Future Planning (MSIP) through the National Research Foundation (NRF) of Korea	6
Basic Science Research Program through the National Research Foundation of Korea (NRF) – Ministry of Education	3
Biotechnology and Biological Sciences Research Council	3
Spanish MINECO	3
Technology Development Program to Solve Climate Changes on Systems Metabolic Engineering for Biorefineries from the Ministry of Science, ICT and Future Planning (MSIP) through the National Research Foundation (NRF) of Korea	3
Bio-Synergy Research Project of the Ministry of Science, ICT and Future Planning through the National Research Foundation	2
C1 Gas Refinery Program through the National Research Foundation of Korea (NRF) – Ministry of Science, ICT & Future Planning	2
EPSRC	2
EURATOM research and training programme 2014–2018	2
GRL	2
Global Frontier Program	2
IWT	2
Inha University Research Grant	2
Intelligent Synthetic Biology Center of Global Frontier Project – MEST, Republic of Korea	2
NIGMS NIH HHS	2

Download Excel

In the upper right corner of the collaboration report it is possible to click "Download Excel" to download the collaboration report for further analysis, formatting, print, etc.

3. Quick look at the Publication Search module

This module is in beta, but perhaps still useful to consult for departments etc.

The module opens with the result of a search for all DTU publications from 2007-today – and offers a variety of ways to zoom-in and refine this search. Especially the option to zoom-in on a single DTU department - exploiting the local efforts to map the many variants of DTU department names (>2500) to 30 current names

Below DTU department is set to "DTU Aqua" using the facet to the left. The facet "Publication years" is opened to see the year-by-year number of publications from DTU Aqua.

You may choose a single year – for example "2014":

This – for example – enables DTU Aqua to study how the subject categories of their publications have evolved year by year since 2007. Or another aspect of their publications by using another facet.

4. Next steps

The next modules will address the need for **output and impact statistics** for performance monitoring, annual reporting, evaluation of departments, etc. Statistics will be based on the publication data of DTU researchers – and aggregated at the levels: Sections → Departments → University.

The key to realizing this is

- ✓ Widespread adoption of ORCID (the global researcher ID)
- ✓ Updated researcher profiles with publication lists in ORCID
- ✓ Synchronization of local data from DTU Orbit to the global ORCID
- ✓ Synchronization of ORCID data to Web of Science

Thus, we may now retrieve practically all the Web of Science-publications of a researcher - simply by searching WoS for the researcher's ORCID.
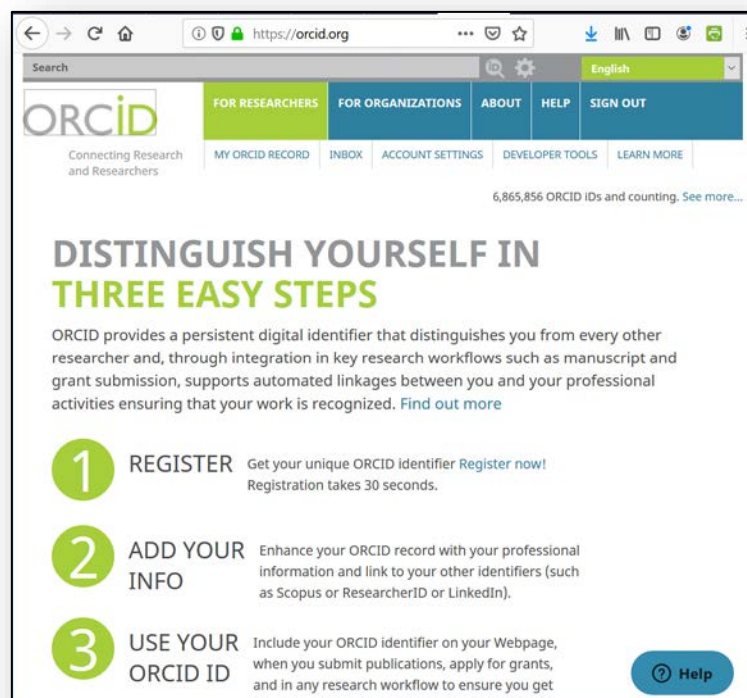
This reflects many years' of effort at DTU:

- DTU Library has organized and supported the DTU ORCID-rollout to all researchers since 2014.
- DTU Library facilitates that all DTU publications are registered locally in DTU Orbit – and that they may be synchronized to the researcher's global ORCID profiles.
- For the past couple of years, updated ORCID profiles have been mandatory for all researchers in connection with the research assessment of their department.

→ We may now rely on ORCID-searches to generate DTU publication lists of researchers

→ Should a researcher miss a publication in the list, she may easily add it to her ORCID profile, and - in turn - Web of Science and the DTU Research Analytics Platform will be automatically updated.

→ A mockup of the new modules will be ready for presentation in Q4-2019.