
DTU

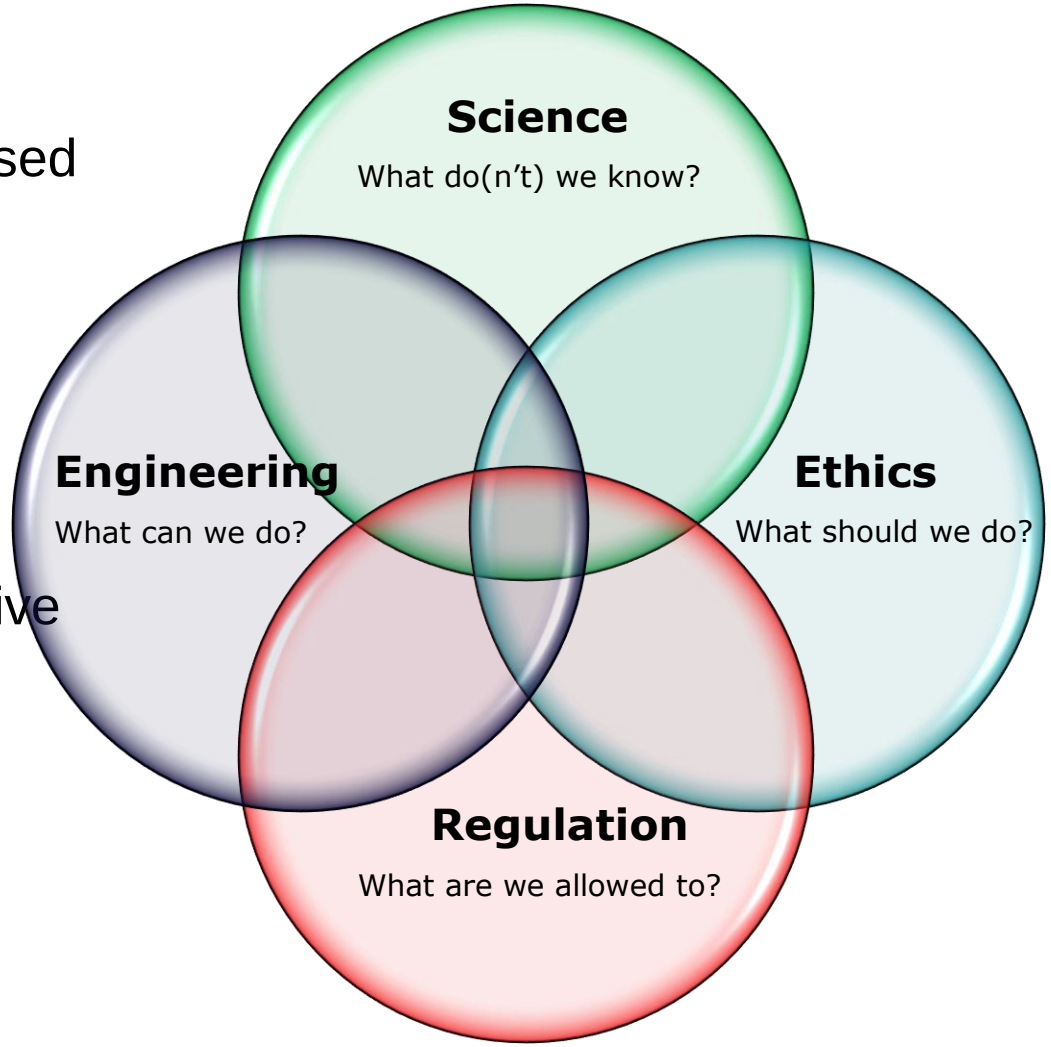
Steffen Foss Hansen, Dr. Techn., Ph.d.

Publishing, OA and Plan S

Background

- Focus on providing decision support based on engineering enabling regulation

- Based on an analysis of:
  - Scientific data
  - Engineering tools
  - Environmental principles and Legislative needs

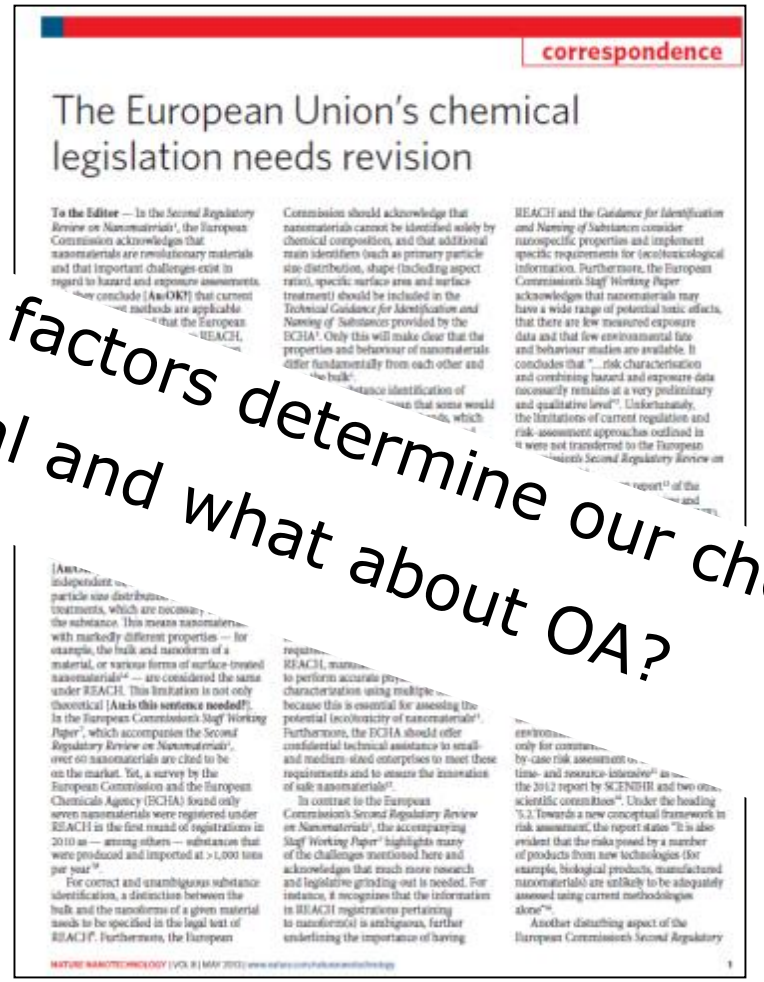


Nanomaterials, Plastics, etc.

– Applied engineering tools e.g.
  - Risk assessment
  - Life cycle assessment

– Regulation e.g.
  - EU chemical regulation (REACH)
  - EU Water Framework Directive (WFD)
  - EU Biocidal Product Regulation (BPR)

– Principles e.g.
  - The precautionary principle
  - The necessity principle


correspondence

The European Union's chemical legislation needs revision

To the Editor — In the *Second Regulatory Review on Nanomaterials*[1], the European Commission acknowledges that nanomaterials are revolutionary materials and that important challenges exist in regard to hazard and exposure assessments. ... conclude [**An OK?**] that current ... methods are applicable ... that the European ... REACH, ... Commission should acknowledge that nanomaterials cannot be identified solely by chemical composition, and that additional main identifiers (such as primary particle size distribution, shape (including aspect ratio), specific surface area and surface treatment) should be included in the *Technical Guidance for Identification and Naming of Substances* provided by the ECHA[2]. Only this will make clear that the properties and behaviour of nanomaterials differ fundamentally from each other and ... bulk[3]. ... identification of ... that some would ... which ... REACH and the *Guidance for Identification and Naming of Substances* consider nanospecific properties and implement specific requirements for (eco)toxicological information. Furthermore, the European Commission's Staff Working Paper acknowledges that nanomaterials may have a wide range of potential toxic effects, that there are few measured exposure data and that few environmental fate and behaviour studies are available. It concludes that "...risk characterisation and combining hazard and exposure data necessarily remains at a very preliminary and qualitative level"[1]. Unfortunately, the limitations of current regulation and risk-assessment approaches outlined in ... were not transferred to the European ... *Second Regulatory Review on* ... report[1] of the ... and ... [An ... independent ... particle size distribution ... treatments, which are necessary ... the substance. This means nanomaterials ... with markedly different properties — for example, the bulk and nanoform of a material, or various forms of surface-treated nanomaterials[4,5] — are considered the same under REACH. This limitation is not only theoretical [**An is this sentence needed?**]. In the European Commission's Staff Working Paper[1], which accompanies the *Second Regulatory Review on Nanomaterials*[1], over 60 nanomaterials are cited to be on the market. Yet, a survey by the European Commission and the European Chemicals Agency (ECHA) found only seven nanomaterials were registered under REACH in the first round of registrations in 2010 as — among others — substances that were produced and imported at >1,000 tons per year[6].

For correct and unambiguous substance identification, a distinction between the bulk and the nanoforms of a given material needs to be specified in the legal text of REACH[6]. Furthermore, the European ... require ... REACH, manu... to perform accurate pro... characterization using multiple ... because this is essential for assessing the potential (eco)toxicity of nanomaterials[7]. Furthermore, the ECHA should offer confidential technical assistance to small- and medium-sized enterprises to meet these requirements and to ensure the innovation of safe nanomaterials[8].

In contrast to the European Commission's *Second Regulatory Review on Nanomaterials*[1], the accompanying Staff Working Paper[1] highlights many of the challenges mentioned here and acknowledges that much more research and legislative grinding-out is needed. For instance, it recognizes that the information in REACH registrations pertaining to nanoform(s) is ambiguous, further underlining the importance of having ... environ... only for comme... by-case risk assessment ... time- and resource-intensive[9] as ... the 2012 report by SCENIHR and two ... scientific committees[10]. Under the heading '5.2 Towards a new conceptual framework in risk assessment', the report states "It is also evident that the risks posed by a number of products from new technologies (for example, biological products, manufactured nanomaterials) are unlikely to be adequately assessed using current methodologies alone"[10].

Another disturbing aspect of the European Commission's *Second Regulatory*

NATURE NANOTECHNOLOGY | VOL 8 | MAY 2013 | www.nature.com/naturenanotechnology 1

... Which factors determine our choices of journal and what about OA?

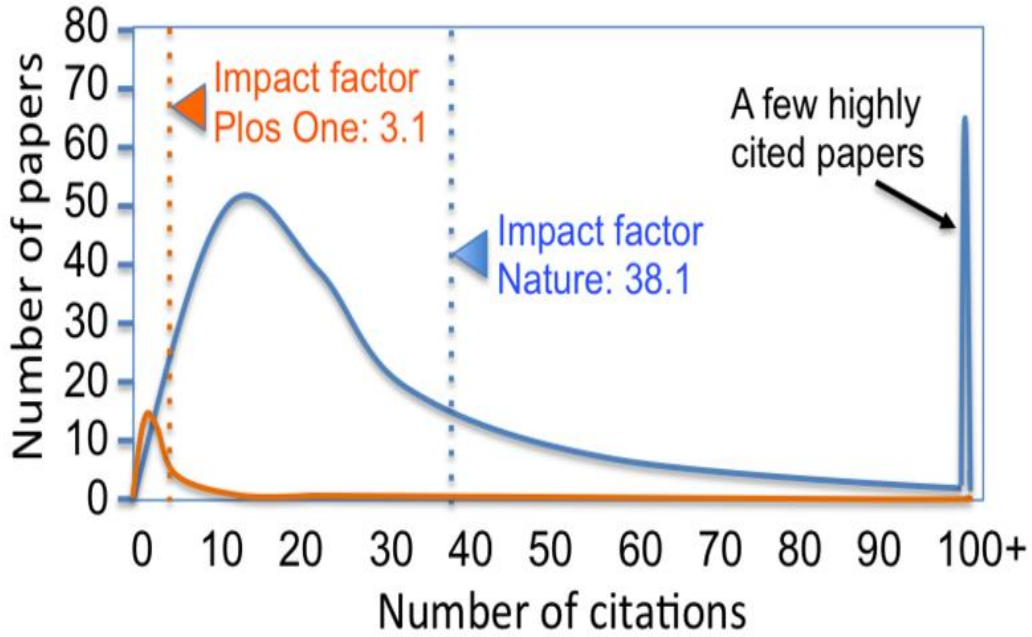
Hansen 2013. Nature Nanotechnology 8, 305–306.

1. Scope of the journal

- Does the article fit into the journal's scope?
- Is the journal open to articles that do not follow a classic structure, e.g. IMRAD?
- Is the journal open to articles that come with political recommendations?
- Has the journal published similar articles before?
- Do we cite articles from the journal in our work?

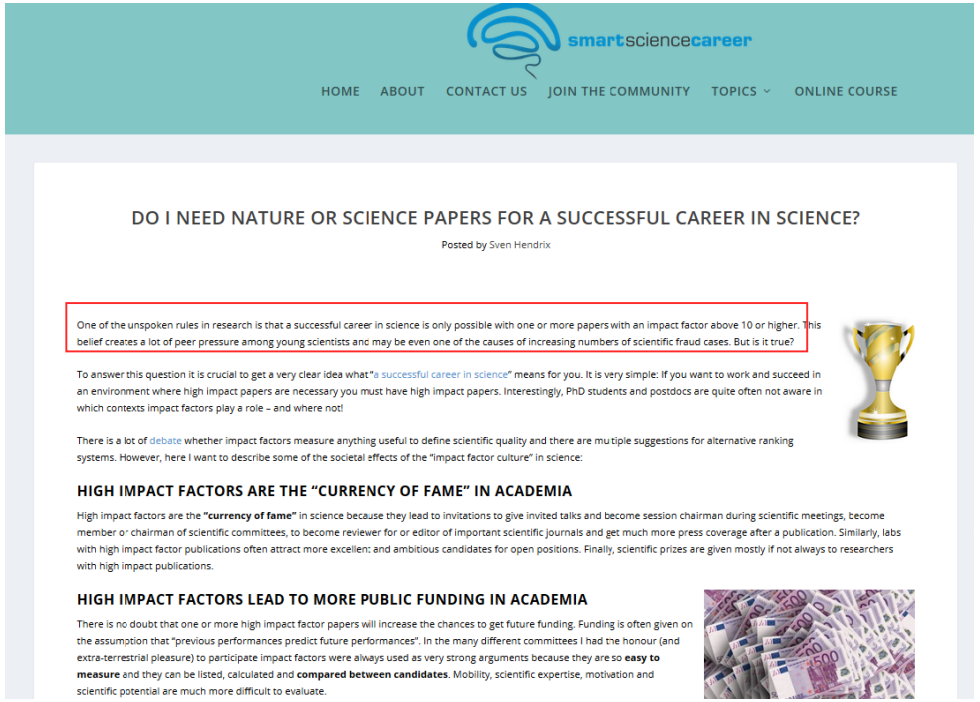
2. Impact factor of the journal

- Annual average number of citations per article
- Believed to be a good proxy for journal quality
- The higher the better
- High impact factor = “Currency of fame”



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

Nature + Science = Succesfuld akademisk karriere



smartsciencecareer

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DO I NEED NATURE OR SCIENCE PAPERS FOR A SUCCESSFUL CAREER IN SCIENCE?

Posted by Sven Hendrix

One of the unspoken rules in research is that a successful career in science is only possible with one or more papers with an impact factor above 10 or higher. This belief creates a lot of peer pressure among young scientists and may be even one of the causes of increasing numbers of scientific fraud cases. But is it true?

To answer this question it is crucial to get a very clear idea what "a successful career in science" means for you. It is very simple: If you want to work and succeed in an environment where high impact papers are necessary you must have high impact papers. Interestingly, PhD students and postdocs are quite often not aware in which contexts impact factors play a role – and where not!

There is a lot of debate whether impact factors measure anything useful to define scientific quality and there are multiple suggestions for alternative ranking systems. However, here I want to describe some of the societal effects of the "impact factor culture" in science:

HIGH IMPACT FACTORS ARE THE "CURRENCY OF FAME" IN ACADEMIA

High impact factors are the **"currency of fame"** in science because they lead to invitations to give invited talks and become session chairman during scientific meetings, become member or chairman of scientific committees, to become reviewer for or editor of important scientific journals and get much more press coverage after a publication. Similarly, labs with high impact factor publications often attract more excellent and ambitious candidates for open positions. Finally, scientific prizes are given mostly if not always to researchers with high impact publications.

HIGH IMPACT FACTORS LEAD TO MORE PUBLIC FUNDING IN ACADEMIA

There is no doubt that one or more high impact factor papers will increase the chances to get future funding. Funding is often given on the assumption that "previous performances predict future performances". In the many different committees I had the honour (and extra-terrestrial pleasure) to participate impact factors were always used as very strong arguments because they are so **easy to measure** and they can be listed, calculated and **compared between candidates**. Mobility, scientific expertise, motivation and scientific potential are much more difficult to evaluate.

https://smartsciencecareer.com/do-i-need-nature-papers/

- "One of the unspoken rules in research is that a successful career in science is only possible with **one or more papers with an impact factor above 10 or higher**"

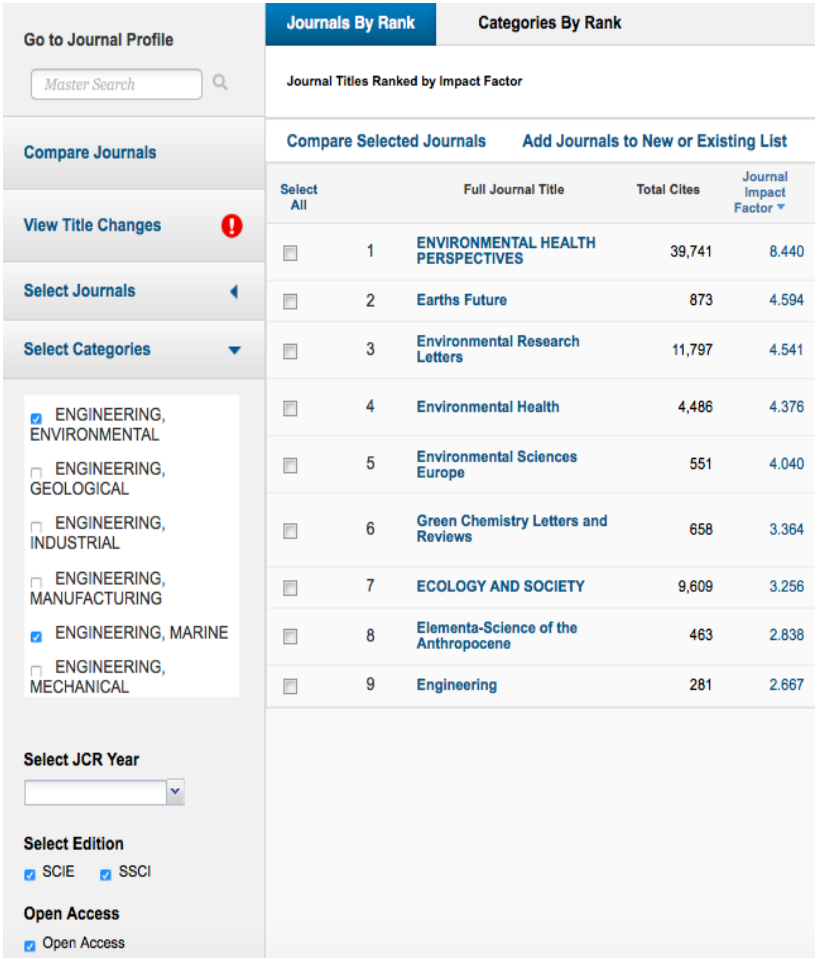
- Sven Hendrix
  - Neuroanatomy professor
  - Founder of smartsciencecareer

So how many > 10 impact factor OA journals are there?

InCites Journal Citation Reports

- In general
  - 239 out of 12298 with IF > 10
  - 18 out of 1289 OA journals with IF > 10

- My field of research
  - 4 out of 422 with IF > 10
  - 0 out of 27 OA journals with IF > 10

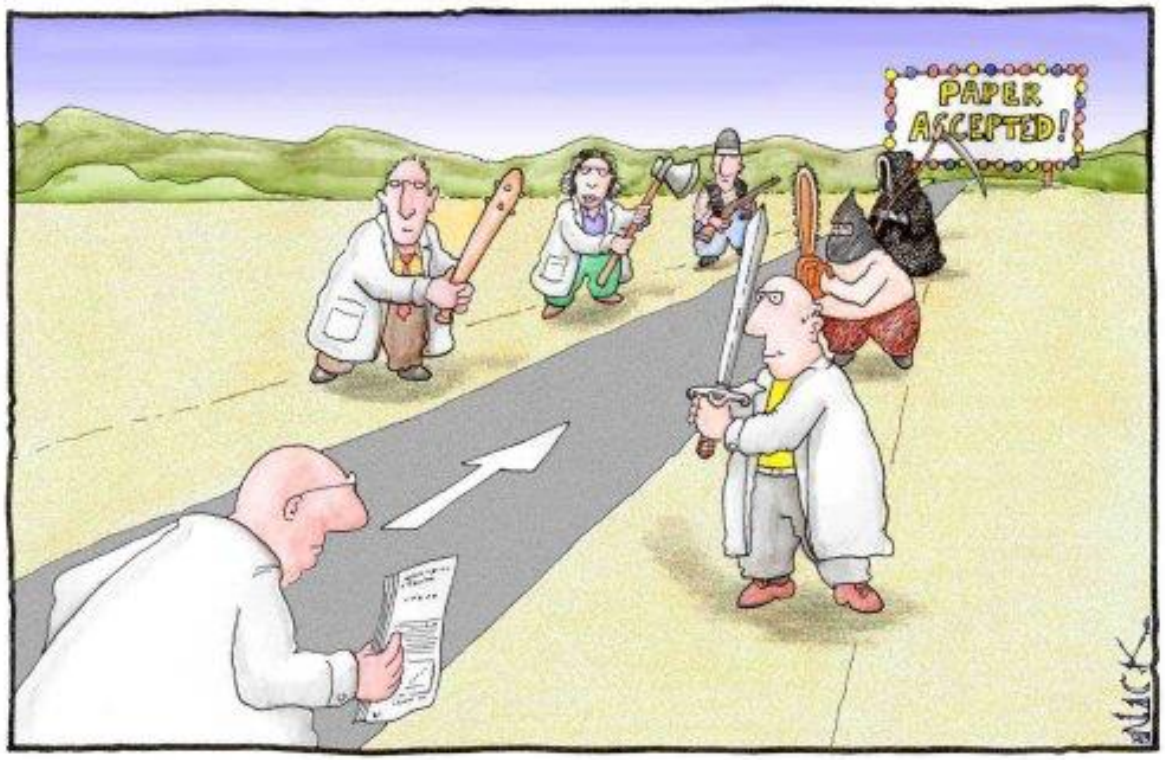


3. Journal recognized by peers?

4. …and it is read by the ”right people”

5. Quality of the reviews

- Are the reviewers and their reviews of high quality?
- How long have they had and how much time have they spent on it
- Constructive criticism or just denigration of our work?
- How much, for example, 3 sentences compared to 10 pages?



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

6. Editors og Associate Editors

- Is it someone you look up to?
- Would you like them to notice your research?
- The dialogue with the editor and associate editors Is there a reasonable approach to the reviewers' position and our subsequent revisions
- Do editors and associate editors provide constructive feedback?

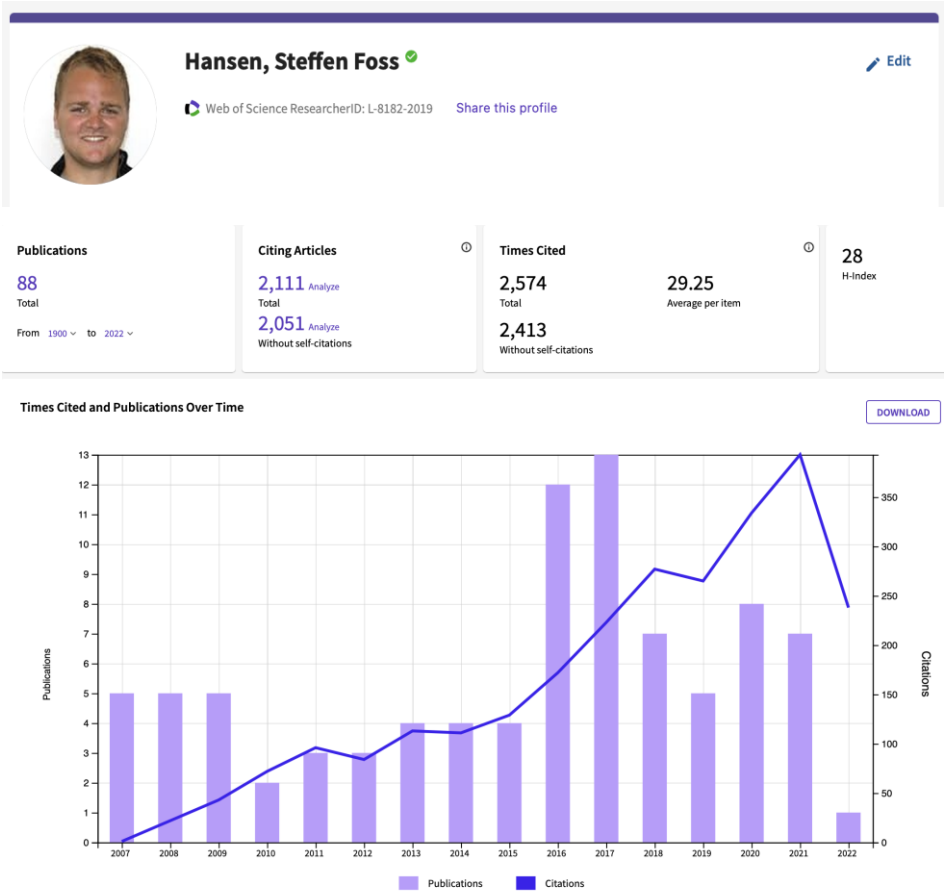
7. Journals' handling of articles

- Do "author guidelines" make sense?
- Easy to follow author guidelines?
- Easy to submit the article?
- Is the article "pre-screened" for formalities by the journal? Do you have to pay to have your article published?
- How long should you expect it to take before you get the reviews?
- How long should you expect the article to be published online?

8. What are we evaluated on?

- Number of publications
- Number of ISI publications
- Number of citations
- H index
- Number of first- (and possibly single-) authorships

- Invited presentations at international established conferences
- Patents
- Honors and awards



9. What is DTU evaluated on?

	Nordic Region**	Europe	World
Leiden Ranking Citation impact indicator (top 10% publications.) *All sciences*	1	41	110
Leiden Ranking Collaborative publications with Industry Indicator	4	7	15
Reuters Top 100 World's Most Innovative Universities	1	14	65
Academic Ranking of World Universities (ShanghaiRanking) Engineering/Technology	1	6	33
QS World University Rankings	6	43	116

* *as per 19 April 2018*
** *The Nordic region consists of Denmark, Sweden, Norway, Finland, and Iceland*

9. What is DTU evaluated on?

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Home>> ShanghaiRanking Academic Excellence Survey 2018

ShanghaiRanking Academic Excellence Survey 2018

Top Journal | Top Award | Top Conferences | Participants | Methodology

Academic Subject: Environmental Science & Engineering	Journal Name	ISSN	Percentage Voted
Environmental Science & Engineering	ENVIRONMENTAL SCIENCE & TECHNOLOGY	0013-936X	100%

Participants

By May 2018, we have surveyed more than 3500 professors from top 100 universities in the world. They are from different subject fields and many of them are the chairs and heads of the faculties or departments they are at.

Criteria

A journal is considered as a Top Journal if:

1. It has more than one vote in one subject. AND
2. It has 50% or more votes in one subject OR It is the top voted Journal in one subject.

ACADEMIC RANKING OF WORLD UNIVERSITIES SINCE 2003

Home About Rankings Survey Universities GRUP Initiative Conference

Home>> Global Ranking of Academic Subjects 2018>> Environmental Science & Engineering

ShanghaiRanking's Global Ranking of Academic Subjects 2018 - Environmental Science & Engineering 2018

Field: Engineering Subject: Environmental Science & Engineering Methodology

World Rank	Institution*	Country/Region	Total Score	Score on PUB
1	Stanford University		343.6	70.1
2	Swiss Federal Institute of Technology Zurich		335.1	83.9
3	Harvard University		334.8	73.1
4	University of California, Davis		309.4	77.8
5	Michigan State University		308.2	65.1
5	University of Wisconsin - Madison		308.2	66
7	University of California, Berkeley		283.0	92.5
8	Technical University of Denmark		278.9	66.5

My personal attitude toward Plan S

- OA has not been a parameter until now in the selection of a journal
- …But can easily be
- Seems reasonable with OA requirements
- Challenges regarding established evaluation criteria
- ... and perhaps there is currently a slight lack of OA journals with a high impact factor within all disciplines

Thank you for your attention!

sfha@env.dtu.dk