

Scientific Article Exercise

*Or: What is the difference between
scientific article and webpage?*

CHEM-E0105 2022-2023 ALC Scientific Article Exercise

Riikka Puurunen

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Updated 26.9.2022



Kick-off lecture, outline

- Intended learning outcomes of the SAE module
- Planned time allocation & schedule
- Feedback & development 2022-2023
- **SAE instructions and MyCourses items**
- More on schedule, deadlines, points, and passing the module

Feedback collected in: <http://presemo.aalto.fi/sae>

SAE, Intended learning outcomes: Students...

- understand what differentiates scientific articles from other publications such as web pages,
- are able to recognize typical parts of scientific articles that report original research (IMRaD) and find the conclusion of an article,
- know how to formulate citation, in a given format (we practice the format of Aalto CHEM instructions),
- are able to describe how the impact of a scientific journal and of an individual article is (attempted to be) assessed,
- have practiced formulating his/her own view (/comment/opinion) on a scientific article,
- be able to use a similarity detection software,
- have made peer evaluation.

SAE, Intended learning outcomes: Students...

- understand what differentiates scientific articles from other publications such as web pages, *The whole SAE*
- are able to recognize typical parts of scientific articles that report original research (IMRaD) and find the conclusion of an article, *Video 1, your SAE*
- know how to formulate citation, in a given format (we practice the format of Aalto CHEM instructions), *Video 3, your SAE*
- are able to describe how the impact of a scientific journal and of an individual article is (attempted to be) assessed, *Video 5, your SAE*
- have practiced formulating his/her own view (/comment/opinion) on a scientific article,
- be able to use a similarity detection software, *Your SAE & MyCo activities*
- have made peer evaluation.

SAE
connected to

Intended Learning Outcomes

After the course the student can

- adopt the code of conduct of the academic community
- set personal goals for effective learning and skills development
- communicate and collaborate in a multicultural and multidisciplinary learning environment
- identify opportunities for academic entrepreneurship and career development
- work safely in laboratory and conduct the principles of scientific research and communication

We are the
university!



Aalto University
School of Chemical
Engineering

KR 2022

4

Planned time allocation and points

* Total 22 h, 0.8 ECTS

* Grading pass/fail: to pass, 60 pt (of max 100 pt) needed*

Activity	Hours	Points
Initial contacts session and six brief videos	3	
Find an article, register it and return a by-publisher-formatted pdf of it (MyCo Items 1.x)	3	10
Read the article and make your SAE report following the provided template	8	
Return the SAE report to workshop and provide your input to the collective documents (MyCo Items 2.x, except 2.1 Part 2)	2	58
Fetch and return a Turnitin report on your SAE report (MyCo Items 2.2 and 3.1)	1	12 (4 + 8)
Make peer evaluation for three other SAE reports (MyCo Item 3.2, in practice done in Workshop of Item 2.1)*	4*	20*
Wrap-up contact session	1	
	22	100

*Obligatory item.



Feedback & development

Please give feedback again and help develop the module

- SAE has received lots of positive feedback
- ... but also critical feedback
 - “Aalto BSc’s already know it all”
 - Bachelor thesis seminar contains great contents on scientific writing!
 - While some obvious overlap exists, we go way beyond.
 - MyCo not well organizer, too many items, ...
- Development items in 2022-2023
 - Timing a bit improved (no DL on evaluation week ...)
 - MyCourses items implementation improved (e.g. new numbering logics)
 - Instructions further improved

Continuous response file



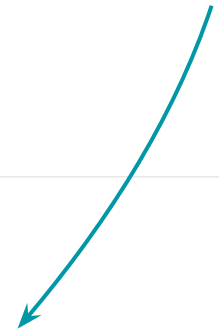
PAGE

SAE: Lists, templates, guidelines, links, ... [page]

Collection of materials needed in SAE.

Note: Student feedback responded to continuously in: [Evolving feedback file](#) (Google Slides)

[If you notice a missing item or ill-working link, please contact Riikka Puurunen (email works fine & quick)]





CHEM-E0105 - Academic Learning
Community, Lecture, 1.9.2022-
28.4.2023

Grades

Sections

» Course description

» Materials

CHEM-E0105 - Academic Learning Community, Lecture, 1.9.2022-28.4.2023

SAE: Getting started

SAE: Getting started



FILE

Scientific Article Exercise (SAE): Introduction and instructions [file]

PDF document



PAGE

Six short video lectures related to scientific articles, SAE module [page]



PAGE

SAE: Lists, templates, guidelines, links, ... [page]

Collection of materials needed in SAE.

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SAE: Getting started



FILE

Scientific Article Exercise (SAE): Introduction and instructions [file]

PDF document

- [Read the instructions](#)
- [Follow the instructions](#)
- If the instructions are not clear, ask the teacher (well on time, *several days before* DL)

CHEM-E0105 2022-2023

Scientific Article Exercise (SAE): Introduction and instructions

Riikka Puurunen (Prof.), 24.9.2022

[Introduction](#)

[Planned time allocation and points](#)

[MyCourses items, instructions](#)

[First deadline \(DL 1\)](#)

[1.1 Find a unique article and register it for your unique code \[OU wiki\]](#)

[1.2 Return a by-publisher-formatted pdf of your article \[Assignment\]](#)

[Second deadline \(DL 2\)](#)

[2.1 Return your SAE report for peer evaluation \[Workshop\]](#)

[Part 1 - Return your SAE report](#)

[2.1 Return your SAE report for peer evaluation \[Workshop\]](#)

[Part 2 - Make peer evaluation \(note: done under DL 3!\)](#)

[2.2 Return your SAE report for similarity check \[Turnitin\]](#)

[2.3 Reference formatting: Enter your bibliographic entry into the collective summary \[URL\]](#)

[2.4.1 Co-creation, article statistics: add your row in the collective summary table \[URL\]](#)

[2.4.2 Co-creation, figures: add your pick in the collection \[URL\]](#)

[2.4.3 Co-creation, tables: add your pick in the collection \[URL\]](#)

[Third deadline \(DL 3\)](#)

[3.1 Return your Turnitin report pdf \[Assignment\]](#)

[3.2 Peer evaluation in Item 2.1, Part 2](#)

SAE: Getting started



Six short video lectures related to scientific articles, SAE module [page]

<p>Typical construction of an article (IMRAD)</p> <p>Abstract "Why?" "the article is a review" "formally list your data" "state the results"</p> <p>Introduction "why?" "setting the scene" in the work usually includes bits of literature (citations) goal of the work & link to the next section "scope (quality of the work, list of paragraphs)"</p> <p>Materials and Methods "how?" "sufficient details that the work can be reproduced by others" "preparation of the work"</p> <p>Results "what results were gained?" (include diagrams, equations) "tables, figures, schemes" "usually no figures/schemes (tables)"</p> <p>Conclusion/Discussion "how do results compare with literature?" "what do the results mean and why are they important?" "implications of the work and highlighting the novelty and significance"</p> <p>References</p> <p><small>One example: PCCP reactions for authors, accessed 30.3.2020. https://www.rsc.org/authors/article/2019/01/01/91001a Copyright © 2009 Pearson Education, Inc. All rights reserved.</small></p> <p>A?</p>	<p>Core of the modern scientific process: Peer review https://en.wikipedia.org/wiki/Peer_review</p> <ol style="list-style-type: none">Journal editor(s) judge whether the topic of a manuscript is in principle suitable for the scope of the journal. (if not → "desk rejection")Manuscript is sent out to other scientists from the field (peers) for evaluation<ul style="list-style-type: none">Peer reviewers give a recommendation of publishing/not publishing the manuscriptOften, list of simple questions is presented, and the formal feedback given to authorsAlways checked, authors back-up claims with evidenceEditor decides: accept, major revision, minor revision, rejectIf major/minor revision, authors may make improvements and resubmit<ul style="list-style-type: none">The editor/peers review the work againThere may be many rounds of peer review and revisionsFinal decision by the editor: accept/ reject <p>A?</p>	<p>What is in the bibliographic entry of a journal citation? (Following Aalto CHEM guidelines) https://en.wikipedia.org/wiki/Peer_review</p> <p>Langmuir, I., The adsorption of gases on plane surfaces of glass, mica and platinum, <i>J. Amer. Chem. Soc.</i> 40 (1918) 1361–1402.</p> <p>Cromers, V., Puurunen, R.L. and Dendooven, J., Conformality in atomic layer deposition: Current status overview of analysis and modeling, <i>Appl. Phys. Rev.</i> 6 (2019) 011301.</p> <p>A?</p> <p>Authors, Title, Abbreviated journal name, volume (year) page-to-page (or article number)</p>
<p>Recommended: reference management system</p> <ul style="list-style-type: none">"Writing is rewriting" → the order in which you cite, will change in revisionsHaving to reorder references manually for each revision<ul style="list-style-type: none">Needs great careFew (if) a waste of timeReference management software can help. BUT......NOTE: your own organization can make a big difference <p>A?</p>	<p>International: Journal Impact Factor (JIF, IF) https://en.wikipedia.org/wiki/Impact_factor, accessed 29.9.2020.</p> <p>"The impact factor (IF) or journal impact factor (JIF) of an academic journal is a scientometric index that reflects the yearly average number of citations that articles published in the last two years in a given journal received. It is frequently used as a proxy for the relative importance of a journal within its field; journals with higher impact factors are often deemed to be more important than those with lower ones."</p> <p>A?</p> $IF_y = \frac{\text{Citations}_y}{\text{Publications}_{y-1} + \text{Publications}_y}$	<p>Fabrication, falsification, plagiarism (FFP) https://en.wikipedia.org/wiki/Scientific_misconduct, accessed 29.9.2020.</p> <p>FFP: three types of scientific misconduct, internationally recognized:</p> <ul style="list-style-type: none">"Fabrication is making up results and recording or reporting them. ...""Falsification is manipulating research materials, equipment, or processes or changing or omitting data or results such that the research is not accurately represented in the research record.""Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit. ..." <p>A?</p>

Screen captures from 2021-2022, contents slightly updated

Six short video lectures related to scientific articles, SAE module [page]

Note, RLP 24.9.2022: all slidesets and videos have now been updated for 2022-2023.

1 How does one construct a scientific article? The IMRAD structure

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=20944b63-02ad-47cc-b298-af1a00d1b5e7>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

2 How does one publish a scientific article? Peer review, and more

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=d11ba22e-31cb-4171-b6bd-af1a00d807ca>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

3 What's in a citation? (And what's not?)

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=ea25dc47-3c99-4f2b-9b82-af1a00de84b8>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

4 How to create reference lists effectively?

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=1ff529b3-c9a7-4197-a15e-af1a00e3bdf8>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

5 "Impact is everything" — How is impact of journals and articles evaluated?

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=32ced7eb-c4ad-4974-b2ea-af1a00e6f8c7>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

6 Quickest way to get (in)famous as a scientist? On scientific misconduct

- Video in Panopto: <https://aalto.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=5ed45a6d-d5dd-418b-b06e-af1a00ecaea0>
- Link to Slides in pdf
- Link to Evolving Google Slides slideset (anyone at Aalto University can view; aalto.fi address must be activated for GDrive use)

Last modified: Saturday, 24 September 2022, 5:35 PM



SAE kick-off, Puurunen 26.9.2022

SAE: Getting started



PAGE

SAE: Lists, templates, guidelines, links, ... [page]

Collection of materials needed in SAE.

Note: Student feedback responded to continuously in: [Evolving feedback file](#) (Google Slides)

[If you notice a missing item or ill-working link, please contact Riikka Puurunen (email works fine & quick)]

Dashboard / My own courses / chem-e0105 - ... / Sections / scientific ar... / sae: lists, t...

SAE: Lists, templates, guidelines, links, ... [page]

Guidelines, lists, templates

- [ALC-*SAE*-scientific-journals](#)
- [2022-2023 *SAE*-report_template](#)
- Aalto CHEM guidelines for written reports, 2012, updated 2018, [here](#). (Version with some critical comments by RLP [here](#).)
- [peer evaluation guidelines](#) [as in 2021-2022; small updates may still come in 2022-2023]

Co-creation file links

- [2022-2023 *ALC-*SAE*-reference-formatting-summary*](#)
- [2022-2023 *ALC-*SAE*-article-statistics*](#)
- [2022-2023 *ALC-*SAE*-figure-summary*](#)
- [2022-2023 *ALC-*SAE*-table-summary*](#)

Scientific search engines

- <https://www.webofknowledge.com/>
- <https://www.scopus.com/>

Lecture slides and video links

- Kick-off lecture: (1) slides as pdf and (2) video record in Panopto. [to come]
- Wrap-up lecture: (1) slides as pdf and (2) video record in Panopto. [to come]

Feedback collection

- 2022-2023 [Evolving feedback file](#) (Google Slides)
- Pdf with marks and points by RLP: [to come]

Last modified: Saturday, 24 September 2022, 11:13 AM



	evaluation week																																																			
	SAE Week 1							SAE Week 2							SAE Week 3							SAE Week 4							SAE Week 5							SAE Week 6																
	Week 39, starting 26.9.							Week 40, starting 3.10.							41, Week starting 10.10.							Week 42, starting 17.10.							Week 43, starting 24.10.							Week 44, starting 31.10.																
	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S			
Kick-off lecture, Mon Sep 26	x																																																			
Six short videos																																																				
Tasks for DL 1, Mon Oct 3														x																																						
Tasks for DL 2, Wed Oct 12																																																				
Tasks for DL 3, Tue Oct 25																																																				
Wrap-up lecture, Mon Oct 31																																																				


DL 1
 Mon Oct 3
 (~Find article)

First deadline (DL 1), Mon Oct 3



How do I find an article, to work on?

- Either search on a topic or author you are interested in (use a scientific search engine)
- Or browse the list of journals provided and select one

 PAGE
SAE: Lists, templates, guidelines, links, ... [page]

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Guidelines, lists, templates

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- [peer evaluation guidelines](#) [as in 2021-2022; small updates may still come in 2022-2023]

Scientific search engines

- <https://www.webofknowledge.com/>
- <https://www.scopus.com/>

Update after lecture: students advised to go to Web of Science through <https://login.libproxy.aalto.fi/menu>

MyCo items for students to complete

Refer to the "[SAE introduction and instructions](#)" file for guidelines related to each item

MyCourses items, instructions

First deadline (DL 1)

1.1 Find a unique article and register it for your unique code [OU wiki]

Each student will find a [scientific article reporting original research](#) (also called "primary research") for her/himself to work on. Review articles (and other article types that do not report original research) are outside of the scope of the SAE.² The article must have been [published in its final form](#), with all article details available (volume, page numbers, etc.). Advance articles (in press, early view, etc.) are not suitable for the SAE.

It is recommended to find an article that one finds interesting, as that makes this exercise more interesting and motivating. However, don't look for an article too long: in the end, any article reporting original research that is somehow at least remotely related to your field of study, is ok. Browse the content lists of scientific journals in your field of interest, or use a scientific search engine to find an article that interests you.

Where can you find a list of journals relevant to your field of study? All Aalto CHEM MSc majors have suggested a few interesting journals related to their major and collected them in an evolving list; you can access it [here](#) (it is a Google Sheets document) and via MyCourses. All journals included in the list should be such that when logged in the Aalto network, you can access the full articles (without cost) -- if not, please let the teachers of the ALC course know. You are free to pick an article from any journal in the list, irrespective of your MSc major. Also, you can choose an article from a scientific journal that is not in the list, as long as it is somehow related to the topics of the MSc programme in chemical, biochemical and materials engineering.³ If you find a scientific article from a journal that is not in the list, please double-check that the journal is included in the Finnish "JUFO" list <https://www.tsv.fi/julkaisufoorumi/haku.php?lang=en> ("title" means the journal name)⁴ and it has a JUFO Level of 1, 2 or 3 (category 0 not accepted for the SAE, currently).

Which scientific search engines can one use? Scientific search engines that you can use to find an interesting article are for example following.

² Review articles and other article types not reporting original research are not included, for example because their structure differs from the typical IMRaD structure of scientific articles reporting original research.

³ Don't pick an article from e.g. a medical journal.

⁴ If the journal is not in the JUFO list, it may be one of the so-called "predatory journals," which do not fulfill the criteria for scientific publications. We wish to avoid such in this Scientific Article Exercise. Another reason for not being included in the JUFO list can be that the journal is new and it did not get a JUFO classification yet.

...

Guidelines, lists, templates

- ALC-SAE-scientific-journals
- 2022-2023 SAE-report_template
- Aalto CHEM guidelines for written reports, 2012, updated 2018, [here](#). (Version with some critical comments by RLP [here](#).)
- [peer evaluation guidelines](#) [as in 2021-2022; small updates may still come in 2022-2023]

Some recommended scientific journals, Scientific Article Exercise (SAE) module (collection Prof. Puurunen & Aalto CHEM majors) Master's Programme in Chemical, Biochemical and Materials Engineering https://into.aalto.fi/display/encbme		
Major	Journal title	Link to journal website
Biomass Refining https://into.aalto.fi/display/encbme/Bi	ACS Sustainable Chemistry & Engineering	https://pubs.acs.org/journal/ascecg
	BioResources	http://www.bioresourcjournal.com/
	Bioresource Technology	https://www.journals.elsevier.com/bioresource-technology
	Cellulose	https://link.springer.com/journal/10570/volumes-and-issues
	Carbohydrate Polymers	https://www.sciencedirect.com/journal/carbohydrate-polymers
	ChemSusChem	https://chemistry-europe.onlinelibrary.wiley.com/doi/10.1002/cssc
	Green Chemistry	https://www.rsc.org/journals-books-databases/about-journals/green-chemistry/
	Holzforschung	https://www.degruyter.com/view/journals/hfsg/hfsg-overview.xml
	Industrial Crops and Products	https://www.sciencedirect.com/journal/industrial-crops-and-products
	Industrial & Engineering Chemistry Research	https://pubs.acs.org/doi/10.1021/acs.iecr
Journal of Wood Chemistry and Technology	https://www.tandfonline.com/doi/toc/10.1080/00429020.2020.1811111	
Biotechnology https://into.aalto.fi/display/encbme/Bi	ACS Sustainable Chemistry & Engineering	https://pubs.acs.org/journal/ascecg
	ACS Synthetic Biology	https://pubs.acs.org/journal/asbcd9
	Applied Biochemistry and Biotechnology	https://www.springer.com/journal/12010
	Bioresource Technology	https://www.journals.elsevier.com/bioresource-technology
	Biotechnology and Bioengineering	https://onlinelibrary.wiley.com/journal/10970290
	Enzyme and Microbial Technology	https://www.journals.elsevier.com/enzyme-and-microbial-technology
	Green Chemistry	https://www.rsc.org/journals-books-databases/about-journals/green-chemistry/
	Nature Biotechnology	https://www.nature.com/nbt/
Metabolic Engineering	https://www.journals.elsevier.com/metabolic-engineering	
Chemical and Process Engineering https://into.aalto.fi/display/encbme/Cr	ACS Catalysis	https://pubs.acs.org/journal/accacs
	AIChE Journal	https://aiche.onlinelibrary.wiley.com/journal/15475905
	Catalysis Science and Technology	https://pubs.rsc.org/en/journals/journalissues/cy#recentArticles&adv
	ChemCatChem	https://chemistry-europe.onlinelibrary.wiley.com/journal/18673699
	Chemical Engineering Science	https://www.journals.elsevier.com/chemical-engineering-science
	Chemical Engineering Journal	https://www.journals.elsevier.com/chemical-engineering-journal
Cryst. Growth and Design	https://pubs.acs.org/journal/cgdtdt	



How to search in Web of Science? Example: topic

<https://www.webofscience.com/wos/woscc/basic-search>

The screenshot shows the Web of Science search interface. At the top, there are two tabs: "DOCUMENTS" (selected) and "RESEARCHERS". Below the tabs, the search scope is set to "Web of Science Core Collection" and "Editions: All". Underneath, there are two sub-tabs: "DOCUMENTS" (selected) and "CITED REFERENCES". The search bar contains the text "carbon dioxide" AND conversion AND hydrogen. To the left of the search bar is a dropdown menu set to "All Fields". Below the search bar are two buttons: "+ Add row" and "+ Add date range". To the right of these buttons is the text "Advanced Search". At the bottom right of the search bar area are two buttons: "x Clear" and "Search".

6,389 results from Web of Science Core Collection for:

Q "carbon dioxide" AND conversion AND hydrogen (All Fields)

Quick Filters

<input type="checkbox"/>	🔥 Highly Cited Papers	268
<input type="checkbox"/>	🔥 Hot Papers	12
<input type="checkbox"/>	📄 Review Article	710
<input type="checkbox"/>	🕒 Early Access	77
<input type="checkbox"/>	🔒 Open Access	1,469
<input type="checkbox"/>	📄 Enriched Cited References	560

Update after lecture: students advised to go to Web of Science through <https://login.libproxy.aalto.fi/menu>

In extra slides, example for: author (Puurunen RL)

Four criteria that the scientific article needs to fulfill


1. Reports original research (primary research)
 - Review articles are not suitable for SAE
2. Has been published in its final form, with all article details available (volume, page numbers or article number, etc.)
 - Advance articles (in press, early view, etc.) are not suitable for SAE
3. Is related to the topics of the MSc programme in chemical, biochemical and materials engineering
 - Articles from medical journals are not suitable for SAE
4. The scientific journal should be included in the Finnish "JUFO" list and have a JUFO Level of 1, 2 or 3
 - Journals in category 0 not accepted for the SAE
 - If you pick a journal from the provided list, this requirement is automatically fulfilled

JUFO: <https://www.tsv.fi/julkaisufoorumi/haku.php?lang=en>

MyCo items for students to complete

Refer to the "SAE introduction and instructions" file for guidelines related to each item

First deadline (DL 1), Mon Oct 3

 OU WIKI
1.1 Find a unique article and register it for your unique code (A001, A002, ...) [OU Wiki] DL Oct 3
Last edit: 21 September 22, 05:17

Please register your unique article on your own pre-created row, with your own unique code (A001, A002, ...).

- When editing, please do not add special characters such as square brackets [] in the text, as these will mix up the formatting.
- It should not take more than 5 min to make your edits and save (likely less than 1 min). There are about 160 students in the course and everyone must be able to edit; no one should lock the page for editing for long. (If the page remains locked for editing by someone for longer than 10 min, students can email teachers, who can unlock the page - any edits made by the student who locked the page will likely be lost)

You can upload a pdf copy of your article for other students to see. Please start the filename with your unique code: A001_...

View **Edit** History

Save changes Preview Cancel

*Note: All selected articles should report original research (review articles etc. not suitable for SAE). By writing "yes" student confirms that the article is appropriate.

First name (student)	Surname (student)	Unique code	Author, year (of your unique article)	Article reports original (primary) research*	Clickable hyperlink to the article
Mona	Modelstudent	A000	Yim et al., 2020	yes	https://doi.org/10.1039/D0CP03358H
		A001			
		A002			
		A003			
		A004			
		A005			
		A006			
		A007			
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		A029			
		A030			
		A031			
		A032			
		A033			
		A034			
		A035			

← Example

Please edit only your row



MyCo items for students to complete

Refer to the "SAE introduction and instructions" file for guidelines related to each item

First deadline (DL 1), Mon Oct 3



ASSIGNMENT

1.2 Return a by-publisher-formatted pdf of your article [Assignment] DL Oct 3

Somewhere, a place to find the pdf

The screenshot shows the ACS Publications website interface. At the top, there are navigation tabs for 'ACS Publications', 'HOME', 'ABOUT', 'CONTACT', and 'HELP'. Below this is a search bar and a 'My Activity' section. The main content area displays the article title 'Impact of Ions on Film Conformality and Crystallinity during Plasma-Assisted Atomic Layer Deposition of TiO₂' by Karsten Arts, Harvey Thepass, Marcel A. Verheijen, Riikka L. Puurunen, Wilhelmus M. M. Kessels, and Harm C. M. Kooops. The article is published in 'Chem. Mater.' on 2021, 33, 5002-5009. A 'PDF (3 MB)' button is highlighted with a blue arrow. Below the article information, there is an 'Abstract' section and an 'Introduction' section. The abstract text is partially visible, starting with 'This work demonstrates that ions have a strong impact on the growth per cycle (GPC) and material properties during plasma-assisted atomic layer deposition (ALD) of TiO₂ (titanium dioxide) over under mild plasma conditions with low energy (<20 eV) ions. Using vertical trench nanostructures and microscopic cavity structures that locally block the flux of ions, it is observed that the impact of (low-energy) ions is an important factor for the TiO₂ film conformality. Specifically, it is demonstrated that the GPC in terms of film thickness can increase by 20 to >200% under the influence of ions, which is correlated with an increase in film crystallinity and an associated strong reduction in the wet etch rate (in 0.01 buffered HF). The magnitude of the influence of ions is observed to depend on multiple parameters such as the deposition temperature, plasma exposure time, and ion energy, which may all be used to minimize or exploit this effect. For example, a relatively moderate influence of ions is observed at 200 °C when using short plasma steps and a grounded substrate, providing a low ion-energy dose of ~1 eV nm⁻² cycle⁻¹, while a high effect is obtained when using extended plasma exposures or substrate biasing (~100 eV nm⁻² cycle⁻¹). This work on TiO₂ shows that detailed insight into the role of ions during plasma ALD is essential for precisely controlling the film conformality, material properties, and process reproducibility.'

The image shows the first page of the article as it would appear in a PDF. At the top left is the 'cm CHEMISTRY OF MATERIALS' logo. Below it is the URL 'pubs.acs.org/cm' and the word 'Article'. The title 'Impact of Ions on Film Conformality and Crystallinity during Plasma-Assisted Atomic Layer Deposition of TiO₂' is prominently displayed, followed by the authors' names: 'Karsten Arts, Harvey Thepass, Marcel A. Verheijen, Riikka L. Puurunen, Wilhelmus M. M. Kessels, and Harm C. M. Kooops'. There are buttons for 'Cite This Chem. Mater. 2021, 33, 5002-5009' and 'Read Online'. Below the title is a navigation bar with 'ACCESS | Metrics & More | Article Recommendations | Supporting Information'. The abstract text is followed by a diagram showing 'ion flux' and 'impact on growth TiO₂'. The 'INTRODUCTION' section begins with 'Titanium oxide is a widely studied material and as a thin film has many applications, such as in photocatalysis, photonics, photovoltaics, and nanoelectronics, where in the latter, TiO₂ primarily functions as high-dielectric. Especially in the field of nanoelectronics, the miniaturization of device structures has strongly increased the demand for atomic-scale processing techniques such as (plasma-assisted) atomic layer deposition (ALD), which can typically provide atomic-level thickness control'. The page number '5002' is at the bottom right, along with the ACS Publications logo and the date 'Received: March 3, 2021'.

Example of the first page of the by-publisher-formatted pdf of <https://doi.org/10.1021/acs.chemmater.1c00781>



SAE kick-off, Puurunen 26.9.2022

	evaluation week																																																	
	SAE Week 1							SAE Week 2							SAE Week 3							SAE Week 4							SAE Week 5							SAE Week 6														
	Week 39, starting 26.9.							Week 40, starting 3.10.							41, Week starting 10.10.							Week 42, starting 17.10.							Week 43, starting 24.10.							Week 44, starting 31.10.														
	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S								
Kick-off lecture, Mon Sep 26	x																																																	
Six short videos																																																		
Tasks for DL 1, Mon Oct 3																																																		
Tasks for DL 2, Wed Oct 12																																																		
Tasks for DL 3, Tue Oct 25																																																		
Wrap-up lecture, Mon Oct 31																																																		

DL 2
 Wed Oct 12
 (~Analyse article)

Second deadline (DL 2), Wed Oct 12



Identification via
student's unique code
(don't write your name)



WORKSHOP

2.1 Return your SAE report for peer evaluation [Workshop] DL Oct 12

Prepare your SAE report using the template provided, and return it as a pdf file. Name your report so that the filename starts with your unique code and contains "SAE-report" in the name. You may add optional text, as you like. Example: A001_SAE-report_...<add-text-here-if-you-like>....pdf.

Submissions open from Thursday, 6 October 2022.

Note: Peer evaluation will later use this same Workshop item. (MyCo, Item 3.2). The planned opening date of peer evaluation is latest Oct 19.

Dashboard / My own courses / chem-e0105 - ... / Sections / scientific ar... / sae: lists, t...

SAE: Lists, templates, guidelines, links, ... [page]

Guidelines, lists, templates

- ALC-SAE-scientific-journals
- 2022-2023 SAE-report_template
- Aalto CHEM guidelines for written reports, 2012, updated 2018, here. (Version with some critical comments by RLP here.)
- peer evaluation guidelines

Scientific Article Exercise, CHEM-E0105 ALC 2022-2023

template by Prof. Riikka Puurunen, initiated 20.9.2022
(delete the grey instructions from the final document)

[title] Your Code, Author, year

[Example title] A01, Gutierrez et al., 2017

Part 1: Technical summary

Bibliographic entry for a reference list, numeric style:

Write the reference here as instructed in the Aalto CHEM guidelines for written reports, available via MyCourses. Pay careful attention to details: where is a comma, a point, a capital letter, italics, bold font, etc. Journal title is entered in an abbreviated form.¹

Model:

Author1, A.B., Author2, B.C. and Author3, D.E., Article title (letters NOT capitalized), *Journal name in abbreviated form* volume (year) firstpage-lastpage. <feel free to add a DOI-hyperlink>

Example:

Gutierrez, A., Turpeinen, E.-M., Viljava, T.-R. and Krause, O., Hydrodeoxygenation of model compounds on sulfided CoMo/γ-Al₂O₃ and NiMo/γ-Al₂O₃ catalysts; Role of sulfur-containing groups in reaction networks, *Catal. Today* 285 (2017) 125-134.
<https://doi.org/10.1016/j.cattod.2017.02.003>

Author affiliations

List the affiliations (=where the work was made) of maximum three persons: the first author and two other authors

Article-related dates

Article-related dates, as reported in the article itself, e.g.: first received, received in updated form, first published, and optionally other dates mentioned

Publisher

Name of the publisher [example: Elsevier]

Copyright line

¹ Where to find generally used journal abbreviations?

- CASSI: <https://cassi.cas.org/search.asp>
- Clarivate Analytics Journal Citation Reports: <http://apps.weboft.com/owa/edge.com/> or direct link: https://pc.clarivate.com/JCR_and/or/Page-Action.action?init=Yes&SrcApp=JCR2_S&SID=H2_csig&K2OvDB&KFw@9&Laz&S37SS=18c26c2b7272Pass?u=JTPTalUJID&K2Ov3Dc3D8cz2&R2GomfUSaPS1Wj&NCo3c3Dc-n&NulRpa27Pm&6hdg2Fmrx3Dx3D-H9H&RN4eh45Yl_vkrX3ox3Dx3D





WORKSHOP

2.1 Return your SAE report for peer evaluation [Workshop] DL Oct 12

Prepare your SAE report using the template provided, and return it as a pdf file. Name your report so that the filename starts with your unique code and contains "SAE-report" in the name. You may add optional text, as you like. Example: A001_SAE-report_...<add-text-here-if-you-like>....pdf.

Submissions open from Thursday, 6 October 2022.

Note: Peer evaluation will later use this same Workshop item. (MyCo, Item 3.2). The planned opening date of peer evaluation is latest Oct 19.

Dashboard / My own courses / chem-e0105 - ... / Sections / scientific ar... / sae: lists, t...

SAE: Lists, templates, guidelines, links, ... [page]

Guidelines, lists, templates

- [ALC-*SAE*-scientific-journals](#)
- [2022-2023 SAE-report_template](#)
- [Aalto CHEM guidelines for written reports, 2012, updated 2018, here.](#) (Version with some critical comments by RLP here.)
- [peer evaluation guidelines](#)

CHEM-E0105 ALC, SAE module			
Document updated by Riikka Puurunen 24.9.2022.			
Aspect no. in peer evaluation	Description	Points	
1	Bibliographic entry correctly formatted according to Aalto CHEM guidelines	8	P SI
2	Author affiliations correctly found	2	Fi
3	Article-related dates correctly found	2	Fi
4	Publisher correctly found	2	Fi
5	Copyright line of the article correctly given	2	Fi
6	Potential Creative Commons (or another open access license) correctly found	2	Fi
7	Numbers found: number of pages, figures, tables, cited references	2	Fi m
8	Number of times cited found (Web of Science), with date indicated	2	Fi th
9	Latest journal impact factor correctly found	2	Fi st in hr fr
10	Current JUFO class correctly found	2	Fi st in hr fr
11	Info copy-pasted in the collective summary spreadsheet/table, as requested (MyCo Item 4.2.1)	2	Fi
12	Abstract of the article correctly copied	2	Fi
13	Example figure provided, including figure caption (also in MyCo Item 2.4.2)	2	Fi
14	Example table provided, including table caption (also in MyCo Item 2.4.3)	2	Fi
15	Main goal found	2	Fi
16	Methods (briefly) described	2	Fi
17	Main result or conclusion stated	2	Fi
18	Funding source info found (or the absence of it)	2	Fi
19	Student's own free-form comments	8	Fi m fr ju if
total		50	



TURNITIN ASSIGNMENT 2

2.2 Return your SAE report for similarity check [Turnitin] DL Oct 12

Submissions open from Thursday, 6 October 2022.

Note: After (i) returning your SAE report for similarity check in this item, you need to (ii) fetch a *similarity report* from here and (iii) return it in Item 3.1 (do not return a *receipt*).

Identical report is submitted as in Item 2.1
(the purpose is different)



URL

2.3 Reference formatting: Enter your bibliographic entry into the collective summary [URL] DL Oct 12

What is in the bibliographic entry of a journal citation? (Following Aalto CHEM guidelines)

Langmuir, I., The adsorption of gases on plane surfaces of glass, mica and platinum, *J. Amer. Chem. Soc.* 40 (1918) 1361-1402.

Cremeris, V., Puurunen, R.L. and Dendooven, J., Conformality in atomic layer deposition: Current status overview of analysis and modeling, *Appl. Phys. Rev.* 6 (2019) 021302.

Authors, Title, Abbreviated journal name, volume (year)
page-to-page (or article number)

A?

- Teacher evaluates the entries, hand-corrected document will be later available through MyCourses
- Students also evaluate the entries, in peer evaluation
- Points 8-6-4-2-0, subtract 2 points for each type of mistake, no matter how small (but only once for the same kind of mistake)

→ Who thinks they will get full points...?

→ And: how would teacher and student evaluations compare...?

CHEM-E0105 ALC 2022-2023, Scientific article exercise reference formatting collective summary (G Docs)

Initiated by Riikka Puurunen, 20.9.2022

How will this file be used?

Instruction for students:

1. Find your article code (A001, A002, etc) and fill in the title the missing part "Article identifier" = Author (et al.), year [example: Gutierrez et al., 2017] (style: Heading 2)
2. Hit "enter" after the title, to create a new row in the file (style: normal text), and
3. Copy-paste your correctly formatted scientific article citation in the new row (you should have paid careful attention to how the citation is formatted).
4. **Please be careful to edit only your dedicated part of the document. Do not edit the instructions or other people's entries.**
5. **Do not include your name in the document, as this document is visible for anyone with the link. You will be identified by the code (A001, A002, ...)**
6. You can update your entry until the the SAE DL 2. Please make sure that you have identical reference formatting in your Scientific article exercise document and here.

Teacher's example

A000 Gutierrez et al., 2017

Gutierrez, A., Turpeinen, E.-M., Viljava, T.-R. and Krause, O., Hydrodeoxygenation of model compounds on sulfided CoMo₂/Al₂O₃ and NiMo₂/Al₂O₃ catalysts; Role of sulfur-containing groups in reaction networks, *Catal. Today* 285 (2017) 125-134.
<https://doi.org/10.1016/j.cattod.2017.02.003>

By-student-formatted references, SAE 2022-2023

A001

A002

A003

A004

A005



URL

2.4.1 Co-creation, article statistics: add your row in the collective summary table [URL] DL Oct 12



URL

2.4.2 Co-creation, figures: add your pick in the collection [URL] DL Oct 12



URL

2.4.3 Co-creation, tables: add your pick in the collection [URL] DL Oct 12

- Contents already created in your SAE report → copy them here
- Items 2.4.x included in peer evaluation
- Contents will be used in wrap-up lecture
- Observe the deadline: once the open editing stops, contents cannot be added

CHEM-ED105 ALC 2022-2023 Scientific article exercise, article statistics overview table

* Share links: please copy-paste here your tabular information, in the place of your article code

** Please be careful not to edit another person's row (use "undo" if you accidentally changed other person's info)

* sharing, as of ___ - not started

Code	Article identifier Author list & year	Abbreviated journal name	No. of pages	No. of cited references	No. of tables	No. of cited references (Web of Science)	Times cited (Web of Science)	Journal Impact Factor	JUFO level	Copyright year	Creative Commons licence?	Digital Object Identifier (DOI) (no)
A000	Gonzalez Escobedo et al., 2019	Top. Catal.	14	7	1	49	4	2.91	5	The Author(s) 2019	CC-BY 4.0	10.1007/s11244-019-01161-6
A001												
A002												
A003												
A004												
A005												
A006												
A007												
A008												
A009												
A010												
A011												
A012												
A013												

A000, Gonzalez et al., 2019 [teacher's example]

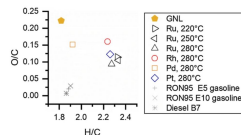


Figure 2: van Kevlen diagram. Molar H/C and O/C of the organic-liquid product mixtures obtained with ZrO_2 -supported catalysts compared to the reactant (GNL) and to standard fuels [gg]. In the case of 280 °C reactions, the reported products were obtained at 30–40% GNL conversion. The values exclude unconverted GNL and water. Reaction temperature is legend. Note that the Ru catalyst contained chloride species

Gonzalez et al., Topics Catal. 62 (2019) 724–737. <https://doi.org/10.1007/s11244-019-01161-6>
 © The Author(s) 2019. Creative Commons Attribution 4.0 International License

A000 El Kharbachi et al., 2020

Table 1
 Properties of selected electrocatalytic reactions of paraffins reported in literature.

Year	Composites and/or catalysts (at 25 °C)	Operating temperature (°C)	Operating voltage/V	Operating stability (hours)	Comments	Ref.
1999	$Mg(OH)_2/Pt/C$ in the DMFCs (O ₂)	60	ca. 1.60	1.5		[10]
2000	$Mg(OH)_2/Pt/C$ in the DMFCs (O ₂)	20	0.6–0.75	1–1.3	low potential, high selectivity, low overpotential, stability of the electrocatalytic reaction, low mass loading	[11]
2001	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.6–0.8	0.8–1.1	high stability and low overpotential	[12]
2003	$Mg(OH)_2$ in DMFCs (O ₂)	60	ca. 0.70	2.4–3.2	high stability, low overpotential	[13]
2007	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.80	2.2	high stability, low overpotential	[14]
2008	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.60–0.75	1.0	high stability, low overpotential, low mass loading	[15]
2010	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.60–0.75	1.0	high stability, low overpotential, low mass loading	[16]
2011	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.60–0.75	1.0	high stability, low overpotential, low mass loading	[17]
2012	$Mg(OH)_2$ in DMFCs (O ₂)	60	0.60–0.75	1.0	high stability, low overpotential, low mass loading	[18]

* 1.0: low overpotential
 * 1.0: low overpotential
 * 1.0: low overpotential
 * 1.0: low overpotential

El Kharbachi A., Zverovtsova O., Latroche M., Cuevas F., Yertys V., Fischer M., Explains, advances and challenges benefiting beyond Li-ion battery technologies, J. Alloys Compd. 817 (2020) art. 153361.
<https://doi.org/10.1016/j.jallcom.2019.153361>

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Creative Commons license: CC BY-NC-ND 4.0

Note: example is from a reviewer article.



	evaluation week																																																			
	SAE Week 1							SAE Week 2							SAE Week 3							SAE Week 4							SAE Week 5							SAE Week 6																
	Week 39, starting 26.9.							Week 40, starting 3.10.							41, Week starting 10.10.							Week 42, starting 17.10.							Week 43, starting 24.10.							Week 44, starting 31.10.																
	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S										
Kick-off lecture, Mon Sep 26	x																																																			
Six short videos																																																				
Tasks for DL 1, Mon Oct 3																																																				
Tasks for DL 2, Wed Oct 12																																																				
Tasks for DL 3, Tue Oct 25																																																				
Wrap-up lecture, Mon Oct 31																																																				

DL 3
 Tue Oct 25
 (~Peer evaluation)

Third deadline (DL 3), Tue Oct 25





ASSIGNMENT

3.1 Return your Turnitin report pdf [Assignment] DL Oct 25

Submissions open from Thursday, 6 October 2022.
(Related to Item 2.2.)

Note: Do not return a *receipt* from Turnitin, but the *similarity report*.

Example from SAE 2021-2022
how a page in Turnitin
similarity report looks like
(lots of matches, as should)

Scientific Article Example, CHEM-20105 ALC 2021-2022

Copyright line:

© 2020 American Chemical Society

Is the article published with a Creative Commons licence, or another open access license?

No

Optional: Link to instructions for authors in the journal's webpage:

For Molecular Pharmaceutics, Author Guidelines of ASC Publications applies:
https://publish.acs.org/publish/author_guidelines?coden=mpohbp

Article and journal in numbers:

Code	Author (et al.), year	Abbreviated journal name	No. of pages	No. of figures	No. of tables	No. of cited references	Times cited (Web of Science) *	Impact Factor [†]	JUFO class [‡]
A84	Gallego et al., 2020	Mol. Pharmaceutics	11	6	0	54	1	4.938	2

* Web of Science (WoS, <https://apps.webofknowledge.com/>). Date of citation info: 2021

† What source did you use for the journal impact factor? (Resurchify, <https://www.resurchify.com/impact/details/130126>).

‡ JUFO class, from <https://www.tsv.fi/julkaisufoorumihaku.php?lang=en>

Code	Author (et al.), year	Copyright line	Creative Commons licence?	Digital Object Identifier (DOI link)
A84	Gallego et al., 2020	© 2020 American Chemical Society	No	https://doi.org/10.1021/acs.molpharmaceut.9b01213

Part 2: Article contents in nutshell

Copy-pasted abstract of the article:

Gene therapy employing nanocarriers represents a promising strategy to treat central nervous system (CNS) diseases, where brain microvasculature is frequently compromised. Vascular endothelial growth factor (VEGF) is a key angiogenic molecule; however, its in vivo administration to the CNS by nonviral gene therapy has not been conducted. Hence, we prepared and physicochemically characterized four cationic niosome formulations (1–4), which were combined with pVEGF-GFP to explore their

3.2 Peer evaluation in Workshop, Item 2.1, DL Oct 25

Mark as done



WORKSHOP

2.1 Return your SAE report for peer evaluation [Workshop] DL Oct 12

Prepare your SAE report using the template provided, and return it as a pdf file. Name your report so that the filename starts with your unique code and contains "SAE-report" in the name. You may add optional text, as you like. Example: A001_SAE-report_...<add-text-here-if-you-like>....pdf.

Submissions open from Thursday, 6 October 2022.

Note: Peer evaluation will later use this same Workshop item. (MyCo, Item 3.2). The planned opening date of peer evaluation is latest Oct 19.

Dashboard / My own courses / chem-e0105 - ... / Sections / scientific ar... / sae: lists, t...

SAE: Lists, templates, guidelines, links, ... [page]

Guidelines, lists, templates

- ALC-SAE-scientific-journals
- 2022-2023 SAE-report_template
- Aalto CHEM guidelines for written reports, 2012, updated 2018, here. (Version with some critical comments by RLP here.)
- peer evaluation guidelines

Doing peer evaluation is obligatory;
one can get max 20 points for it.

Aspect no. in peer evaluation	Description	Points	
1	Bibliographic entry correctly formatted according to Aalto CHEM guidelines	8	P
2	Author affiliations correctly found	2	FI
3	Article-related dates correctly found	2	FI
4	Publisher correctly found	2	FI
5	Copyright line of the article correctly given	2	FI
6	Potential Creative Commons (or another open access license) correctly found	2	FI
7	Numbers found: number of pages, figures, tables, cited references	2	Fi m
8	Number of times cited found (Web of Science), with date indicated	2	Fi th
9	Latest journal impact factor correctly found	2	Fi st in hr fn
10	Current JUFO class correctly found	2	Fi st in hr fn
11	Info copy-pasted in the collective summary spreadsheet/table, as requested (MyCo Item 4.2.1)	2	FI
12	Abstract of the article correctly copied	2	FI
13	Example figure provided, including figure caption (also in MyCo Item 2.4.2)	2	FI
14	Example table provided, including table caption (also in MyCo Item 2.4.3)	2	FI
15	Main goal found	2	FI
16	Methods (briefly) described	2	FI
17	Main result or conclusion stated	2	FI
18	Funding source info found (or the absence of it)	2	FI
19	Student's own free-form comments	8	Fi m fn ju if
	total	50	



**On schedule, deadlines,
points, passing the module**



On schedule & deadlines

	evaluation week																																																															
	SAE Week 1						SAE Week 2						SAE Week 3						SAE Week 4						SAE Week 5						SAE Week 6																																	
	Week 39, starting 26.9.						Week 40, starting 3.10.						41, Week starting 10.10.						Week 42, starting 17.10.						Week 43, starting 24.10.						Week 44, starting 31.10.																																	
	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S															
Kick-off lecture, Mon Sep 26	x																																																															
Six short videos																																																																
Tasks for DL 1, Mon Oct 3																																																																
Tasks for DL 2, Wed Oct 12																																																																
Tasks for DL 3, Tue Oct 25																																																																
Wrap-up lecture, Mon Oct 31																																																																
student effort, added (h)	2							4							10																								5													1												
student effort, cumulative (h)	2							6							16																								21													22												



- **Submitting the SAE report in Item 2.1 [Workshop] is critical**
(teacher intends is to send one email reminder to those who did not submit by DL 2)
- After the Workshop (Item 2.1) progresses to peer evaluation stage, it is no longer possible to submit the SAE report (& participate in peer evaluation & pass the module)

On points & passing the module

- 60 pt needed to pass *
- Not difficult, but requires active doing

* peer evaluation is obligatory part

- Full points for correct submission by the DL
- Late submissions (when allowed) give less points
- Grading is pass/fail, so points don't really matter (when 60 pt or more)

- As for peer evaluation in Item 3.2: if the points by peers are low, teacher can re-evaluate SAE report, if student's passing endangered (teacher evaluation overrides peer evaluations)
- If necessary, 2nd opportunity to do SAE module may be organized (May?)

If MyCo items don't work,
please email me at

firstname.lastname@aalto.fi

(firstname: Riikka, lastname: Puurunen)

*Good luck with your
scientific article exercise!
Hopefully it is fun &
educational!*

*Your Aalto
Thesis*

References

[1]... [50]... [100]...

Additional material

How to search in Web of Science? Example: topic

<https://www.webofscience.com/wos/woscc/basic-search>

The screenshot shows the Web of Science search interface. At the top, there are two tabs: "DOCUMENTS" (selected) and "RESEARCHERS". Below the tabs, it says "Search in: Web of Science Core Collection" and "Editions: All". Underneath, there are two sub-tabs: "DOCUMENTS" (selected) and "CITED REFERENCES". A search bar contains the text "carbon dioxide" AND conversion AND hydrogen. To the left of the search bar is a dropdown menu set to "All Fields". Below the search bar are buttons for "+ Add row", "+ Add date range", and "Advanced Search". At the bottom right of the search area are "Clear" and "Search" buttons.

6,389 results from Web of Science Core Collection for:

Q "carbon dioxide" AND conversion AND hydrogen (All Fields)

Quick Filters

<input type="checkbox"/>	🔥 Highly Cited Papers	268
<input type="checkbox"/>	🔥 Hot Papers	12
<input type="checkbox"/>	📄 Review Article	710
<input type="checkbox"/>	🕒 Early Access	77
<input type="checkbox"/>	🔒 Open Access	1,469
<input type="checkbox"/>	📄 Enriched Cited References	560

Update after lecture: students advised to go to Web of Science through <https://login.libproxy.aalto.fi/menu>

How to search in Web of Science? Example: person

<https://www.webofscience.com/wos/woscc/basic-search>

Search in: **Web of Science Core Collection** ▾ Editions: **All** ▾

DOCUMENTS **CITED REFERENCES**

Author ▾ Example: O'Brian C* OR OBrian C*
Puurunen RL **AZ** ×





+ Add row **+ Add date range** **Advanced Search**

× Clear **Search**

79 results from Web of Science Core Collection for:

Q Puurunen RL (Author)

Quick Filters

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Title: [Heterologous expression of cobalamin dependent methanol CoM methyltransferases from environmental archaea](#)

Author(s): Gul, Amna

Date: 2022-08-23

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Title: [Materials-based inconsistencies in a life cycle assessment database on digital services](#)

Author(s): Vincenot, Amandine

Date: 2022-08-23

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Title: [Synthesis of metal chalcogenides GaSx by a atomic layer deposition/molecular layer deposition route](#)

Author(s): lung, Tom

Date: 2022-08-23

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Title: [Optimization of material selection according to sustainable building certifications](#)

Author(s): Jusselein, Agathé Cécile Raphaëlle

Date: 2022-08-23

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Title: [Preparation of cobalt particles in aqueous medium and dispersion stabilization](#)

Author(s): Lipasti, Saana

Date: 2022-08-23

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