

Introduction to literature research

Preparing for BEP projects

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Databases for finding literature

1. www.scopus.com
2. www.webofknowledge.com
3. scholar.google.com

1. and 2. are much alike. Personally, I use 1. and will show that later in this talk.

3. has less options, but is faster with adding the latest papers.

For 1. and 2. you need a VPN, when you are not at the university:

<https://www.tudelft.nl/en/student/ict/ict-facilities/virtual-private-network-vpn/>

Planning the search

Discuss well with your supervisor how wide or how limited the scope should be. Be aware that this is research (i.e., something new): so your supervisor might also not know the boundaries in advance.

Perhaps your supervisor has one or a few papers as a starting point.

Think of some good keywords to describe your topic.

Keywords

- Look at some first papers (e.g., reviews) to get an idea of the relevant keywords.
- Multiple field – both relevant to you – might use different terms.
Examples: particles, powder, solids, granular matter, ...
agglomerates, aggregates, clusters, ...
- Be aware of spelling differences, e.g. fluidised (UK) vs fluidized (US).
- For other tips (e.g., using wildcards * and ?), see:
<https://blog.scopus.com/posts/6-simple-search-tips-lessons-learned-from-the-scopus-webinar>

Using different search boxes

Title – Abs – Key (TAK)

Author

TAK + Affiliation

The image displays three sequential screenshots of the Scopus search interface, illustrating different search criteria:

- Top Screenshot:** Shows a search for "Document search" with the criteria "Documents" selected. The search query is "(fluidization or fluidized or fluidised) and ("atomic layer deposition" or ALD)". The search type is set to "Article title, Abstract, Keywords".
- Middle Screenshot:** Shows a search for "Document search" with the criteria "Authors" selected. The search query is "boukany, p.e.". The search type is set to "Article title, Abstract, Keywords".
- Bottom Screenshot:** Shows a search for "Document search" with the criteria "Documents" selected. The search query is "(fluidization or fluidized or fluidised) and ("atomic layer deposition" or ALD)". The search type is set to "Article title, Abstract, Keywords". Below the main search bar, there is an "AND" operator selected, and a second search box with the query "Delt" and the search type set to "Affiliation".

Selecting papers

- Most recent

Documents Secondary documents Patents View Mendeley Data (6)

Analyze search results Show all abstracts Sort on: Date (newest)

All Export Download View citation overview View cited by Add to List

	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 1	Lutetium coating of nanoparticles by atomic layer deposition	Moret, J.L.T.M., Griffiths, M.B.E., Frijns, J.E.B.M., (...), Denkova, A.G., Van Ommen, J.R.	2020	Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films 38(2),022414	0
	View abstract <input type="checkbox"/> TU Delft full text(opens in a new window) Related documents				
<input type="checkbox"/> 2	Atomic layer deposition on particulate materials	van Ommen, J.R., Goulas, A.	2019	Materials Today Chemistry 14,100183	0
	View abstract <input type="checkbox"/> TU Delft full text(opens in a new window) Related documents				
<input type="checkbox"/> 3	Atomic Layer Deposition on Dispersed Materials in Liquid Phase by Stoichiometrically Limited Injections	Le Monnier, B.P., Wells, F., Talebkeikhah, F., Luterbacher, J.S.	2019	Advanced Materials 31(52),1904276	0

- Most citations

Documents Secondary documents Patents View Mendeley Data (6)

Analyze search results Show all abstracts Sort on: Cited by (highest)

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	Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 1	Atomic layer deposition on particles using a fluidized bed reactor with in situ mass spectrometry	King, D.M., Spencer II, J.A., Liang, X., Hakim, L.F., Weimer, A.W.	2007	Surface and Coatings Technology 201(22-23 SPEC. ISS.), pp. 9163-9171	126
	View abstract <input type="checkbox"/> TU Delft full text(opens in a new window) Related documents				
<input type="checkbox"/> 2	Nanocoating individual cohesive boron nitride particles in a fluidized bed by ALD	Wank, J.R., George, S.M., Weimer, A.W.	2004	Powder Technology 142(1), pp. 59-69	93
	View abstract <input type="checkbox"/> TU Delft full text(opens in a new window) Related documents				

- Based on content!

Note: old literature might still be useful!

Downloading papers in batch

Documents Secondary documents Patents [View Mendeley Data \(1\)](#)

Analyze search results Show all abstracts Sort on: Date (newest)

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1	Lutetium coating of nanoparticles by atomic layer deposition	Moret, J.L.T.M., Griffiths, M.B.E., Frijns, J.E.B.M., (...), Denkova, A.G., Van Ommen, J.R.	2020	Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films 38(2),022414	0
	View abstract	TU Delft full text(opens in a new window)	Related documents		
2	Atomic layer deposition on particulate materials	van Ommen, J.R., Goulas, A.	2019	Materials Today Chemistry 14,100183	0
	View abstract	TU Delft full text(opens in a new window)	Related documents		
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	View abstract	TU Delft full text(opens in a new window)	Related documents		

From the current paper to other ones

• Citations (backward)

In paper:

size
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$\rho_N(X_i)$ = distribution of set X
 $\rho_N^s(X_i)$ = smoothed distribution of set X
 σ_p = standard deviation of p , Pa
 ψ_{pq} = function defined in Eq. 8

Literature Cited

Chong, Y. O., D. P. O'Dea, E. T. White, P. L. Lee, and L. S. Leung, "Control of Quality of Fluidization in a Tall Bed using the Variance of Pressure Fluctuations," *Powder Technol.*, **53**, 237 (1987).
 Daw, C. S., C. E. A. Finney, K. Nguyen, and J. S. Halow, "Symbol Statistics: a New Tool for Understanding Multiphase Flow Phenomena," *Proc. of ASME Heat Transfer Division - 1998*, **5**, R. A. Nelson, Jr., T. Chopin, S. T. Thynell, eds., ASME, New York, 221 (1998).

In Scopus:

References (21)

All Export Print E-mail Save to PDF Create bibliography

1 Chong, Y.O., O'Dea, D.P., White, E.T., Lee, P.L., Leung, L.S.
Control of the quality of fluidization in a tall bed using the variance of pressure fluctuations
 (1987) *Powder Technology*, 53 (3), pp. 237-246. Cited 22 times.
 doi: 10.1016/0032-5910(87)80097-9
[TU Delft full text\(opens in a new window\)](#) [View at Publisher](#)

2 Daw, C.S., Finney, C.E.A., Nguyen, K., Halow, J.S.
Symbol statistics: A new tool for understanding multiphase flow phenomena
 (1998) *American Society of Mechanical Engineers, Heat Transfer Division, (Publication) HTD*, 361-5, pp. 221-229. Cited 11 times.
[TU Delft full text\(opens in a new window\)](#)

• Cited by (forward)

Analyze search results

Show all abstracts Sort on: Cited by (highest)

All Export Download View citation overview View cited by Add to List

Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 1 Benchmark numerical simulations of segmented two-phase flows in microchannels using the Volume of Fluid method	Hoang, D.A., van Steijn, V., Portela, L.M., Kreutzer, M.T., Kleijn, C.R.	2013	Computers and Fluids 86, pp. 28-36	100



Analyze search results

Show all abstracts Sort on: Date (newest)

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Document title	Authors	Year	Source	Cited by
<input type="checkbox"/> 1 A volume-of-fluid method for interface-resolved simulations of phase-changing two-fluid flows	Scapin, N., Costa, P., Brandt, L.	2020	Journal of Computational Physics 407,109251	0
<input type="checkbox"/> 2 Numerical Insights on Controlled Droplet Formation in a Microfluidic Flow-Focusing Device	Sontti, S.G., Atta, A.	2020	Industrial and Engineering Chemistry Research 59(9), pp. 3702-3716	2
<input type="checkbox"/> 3 Physics of humping formation in laser powder bed fusion	Tang, C., Le, K.Q., Wong, C.H.	2020	International Journal of Heat and Mass Transfer 149,119172	0

When reading, make notes!

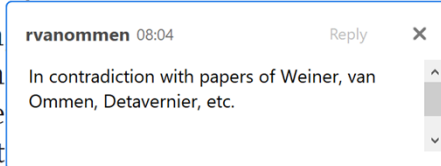
In the PDF

1 coating quality. n achieve coating the depositing acid.

mass transfer limitations. Setups typically include rotating reaction chambers or fluidized beds to disperse the particles, and will require extensive precursor recycling schemes at the industrial scale. The complexity of these installations has limited the application of this technique in

research and, up to now, prevented its industrial implementation despite exciting published results.^[9,10]

In this context, new strategies using liquid-phase injection are emerging. Notably, we have focused on subsequent liquid-phase injections of ALD



or in a separate file

transistors (MOSFET) and capacitor dielectrics in Dynamic Random Access Memories (DRAM) became important topics in ALD research around the year 2000 (Hwang, 2014).

#Mention something about ITRS here? → good reference???

“ALD started being applied to Dynamic Random Access Memories (DRAM) early in this century, while earlier DRAMs were mostly constructed by chemical vapor deposition. Nowadays, many other types of memory chips also employ ALD processes for various purposes. Another milestone in microelectronics in ALD history was the mass production of microprocessors which was initiated with the production of Penryn in 2007 by Intel, where the replacement gate process with high-k/metal gate stack was adopted. Since then ALD has evolved into a standard process in semiconductor industry.” [Hwang, book, 2014]

DRAM → page 89 Hwang

<http://www.itrs2.net/itrs-reports.html#>

Properly citing

To avoid plagiarism, you must give credit by citing properly.

Please have a look at:

<https://tulib.tudelft.nl/writing-publishing/how-to-cite/>

Copied figures also need citation!

A useful literature review

You should go beyond just summarizing papers:

- Show structure to your readers (e.g., use table to summarize info!)
- Do different authors have opposing views?
- How did the field develop over time?
- Did researchers change their view over time?

How to store

Use EndNote
(integration in Word)

References

1. Zhang, J.; Nosaka, Y., Mechanism of the OH Radical Generation in Photocatalysis with TiO₂ of Different Crystalline Types. *The Journal of Physical Chemistry C* **2014**, *118* (20), 10824-10832.
2. Linsebigler, A. L.; Lu, G.; Yates, J. T., Photocatalysis on TiO₂ Surfaces: Principles, Mechanisms, and Selected Results. *Chemical Reviews* **1995**, *95* (3), 735-758.
3. Mortazavian, S.; Saber, A.; James, D. E., Optimization of Photocatalytic Degradation of Acid Blue 113 and Acid Red 88 Textile Dyes in a UV-C/TiO₂ Suspension System: Application of Response Surface Methodology (RSM). *Catalysts* **2019**, *9* (4).
4. Ahmed, S.; Rasul, M. G.; Martens, W. N.; Brown, R.; Hashib, M. A., Advances in Heterogeneous Photocatalytic Degradation of Phenols and Dyes in Wastewater: A Review. *Water, Air, & Soil Pollution* **2010**, *215* (1-4), 3-29.

or use BibTeX
(integration in LaTeX)

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- Akhlaghi, H., Roohi, E., Stefanov, S., 2012. A new iterative wall heat flux specifying technique in DSMC for heating/cooling simulations of MEMS/NEMS. *International Journal of Thermal Sciences* 59, 111–125. URL: <http://dx.doi.org/10.1016/j.ijthermalsci.2012.04.002>, doi:10.1016/j.ijthermalsci.2012.04.002.
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See: <https://tulib.tudelft.nl/managing-your-information/reference-management/>

Not just literature research!

Please note that the literature research can't cover the whole project!

According to guidelines of the BSc programme, it should consist of:

- Extensive literature research
- Formulation of a hypothesis and research question
- Description of the approaches and methods to answer the research question
- Analysis of a data set(s) from supervisor, literature, public databases or results from computer simulations and/or modelling
- Discussion in which the findings are related to the research question and other literature
- Formulation of conclusions

Rounding off

The presentation and defence will be done “as normal”, but then online.

Questions?

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