

Stakeholder Report July 16, 2018

LAPSE:2018.0147v1

Introduction and News

LAPSE: The living archive for process systems engineering, was released July 1, 2018 to the general public, and presented at the 13th International Symposium on Process Systems Engineering (PSE 2018) a few days later. This is the first annual stakeholder report, which will briefly describe the goals for LAPSE over the next year.

LAPSE is now live! See http://PSEcommunity.org/LAPSE

Funders

Five organizations have pledged support for LAPSE (or are in the process of formalizing the relationship). This indicates a strong level of interest from the PSE community, and satisfied our initial fundraising goals. We will continue to look for more partners as the site grows and usability continues.



🕥 SINTEF

New Journal Partner

LAPSE has partnered with the journal *Processes*. Soon, **all future articles published in Processes** (an open-access journal) **will be indexed automatically in LAPSE**. We are currently working together on the technical details (such as the specific website code) in order to make this happen. This partnership is a major boost for LAPSE that will significantly increase our usage rates reputation.



New Volunteers

Two community volunteers have joined our efforts. Calin Tsay (PhD student at University of Texas at Austin) and Pablo Rolandi (Director of Process Development at Amgen) have stepped forward to offer their services as the first LAPSE curators. Their main responsibilities will be to verify new records, suggest new keywords, journals, categorizations, and new items. Thanks to you both!

LAPSE		Type search text:	all fields	SEARCH
	for Process Systems Engineering	Logout My Dashboar	d Submit New About Contact I	Js Help
APSE:2018	3.0142		Download	
	proach to the identification of high-potential for cost-efficient membrane-based post-combustion ure	Published Article	Files [Download 1v1.pdf] (2.2 MB) License	Jun 22, 2018 Full Details
Simon Rouss	analy, Rahul Anantharaman, Karl Lindqvist, Brede Hagen	LAPSE:2018.0142	CC BY 4.0	[details]
June 22, 2018		Meta		
Developing "good" membrane modules and materials is a key step towards reducing the cost of membrane-based CO2 capture. While this is traditionally being done through incremental development of existing and new materials, this paper presents a new approach to identify membrane materials with a disruptive potential to reduce the cost of CO2 capture for six potential industrial and power generation cases. For each case, this approach first identifies the membrane properties targets required to reach cost-competitiveness and several cost-reduction levels compared to MEA-based CO2 capture, through the evaluation of a wide range of possible membrane properties. These properties targets are then compared to membrane module properties which can be theoretically achieved using 401 polymeric membrane materials, in order to highlight 73 high-potential materials which could be used by membrane development experts to select materials worth pushing towards further development once practical considerations have been taken into account. Beyond the identification of individual materials, the ranges of membrane properties targets also show the strong potential of membrane-based capture ratios lower than 90% would significantly improve the competitiveness of membrane-based capture and lead to potentially significant cost reduction. Finally, it is important to note that the approach discussed here is applicable to other separation technologies and applications beyond CO2 capture, and could help reduce both the cost and time required to develop cost-effective technologies.		Record Statistics Record Views Version History [v1] (Original Submission) Verified by curator on This Version Number Citations LAPSE:2018.0142 LAPSE:2018.0142v1 URL Here http://psecommunity.org/LAPS	52 Jun 22, 2018 Jun 22, 2018 v1 Most Recent This Version 5E:2018.0142	
Record ID	LAPSE:2018.0142	Original Submitter		
	Attainable Region, Carbon Dioxide Capture, gas separation membranes, post-comb	wistion property		

Features

LAPSE Living Archive for Process Systems Engineering	Type search text: Logout My Dashboard Submit New /	all fields Very SEARCH About Contact Us Help				
Editing: Temp						
1 Basic Info 2 Citation 3 Authors 4 Keywords 5 Licensing 6 Embargo		& Submit				
You may embargo this submission if you wish. An embargoed submission is placed into the database and receives a reference identifier that can be cited, but the embargoed submission will not be visible to the general public until the embargo date.						
Warning! According to our records, the journal Canadian Journal of Chemical Engineering will not allow post-prints to be deposited into open access repositories until an embargo period of 366 days has passed after the publication date unless this article has open-access rights (usually for which the author or funder has paid or otherwise negotiated). We last checked this policy on 2018-06-04 . Based on the given publication date, this means the post-print must be embargoed until 2019-06-27 or later.						
Embargo This Submission? Embargo Date (YYYY-MM-DD)						
2019 - 06 - 27		٥				

LAPSE automatically advises the user if it detects that a pre-print, post-print, or article published in a journal has an embargo requirement set by the publisher. LAPSE will suggest an embargo date for the submission. Embargoing is a convenient feature not available in other repositories. Elsevier has provided a database for this purpose so far.

Unique Features

LAPSE functions like other repositories is that users can submit pre-prints, post-prints, published articles (where copyright allows), presentation slides, simulation files, models, source code, conference materials, classroom lectures, and education materials. Each submission receives a unique LAPSE ID (see next page) which works as a permalink within a version control system. This is standard fare for repositories, but where LAPSE stands out is some key unique features:

- **Record Maps:** Users can connect their submissions to other submissions in LAPSE (either theirs or by others), anything in arXiv, or anything with a DOI. This creates a visual tree structure that easily shows conceptually how one record relates to another in the greater scheme of things.
- **Embargo Systems**: Users can set embargos on submissions so they can appear at a later date. This is very convenient for journals with embargo periods on pre-prints or post-prints (and there are many).
- Licensing and Legal Text Database: For submissions that correspond to a journal in our database, LAPSE will recommend a specific license (typically a Creative Commons variant or GPL) and specific legal text that should accompany certain types of submissions, as required by the publisher. This will appear on a custom header page on the PDF of the primary file for the submission. Embargo periods are recommended in the same way.

Upcoming Features

LAPSE is **developed and maintained by volunteers** and so feature rollouts will be made over time. A regularly updated list of upcoming features and bugs can be found here:

http://psecommunity.org/forums/topic/sticky-bugsand-features

Some of the bigger features that **we plan on releasing** over the next year include:

- **Special conference support**: Users have pre-filled forms when submitting conference slides or papers for partner conferences.
- **Improved search**: Using semantic search algorithms that handle things like misspellings, "sounds like", synonyms, and so forth.
- Link to Handle.net tags: Currently users can link their LAPSE records to anything with a DOI or arXiv tag. Adding Handle.net tags to this will allow linking with software commonly use for thesis or other record deposits in institutional repositories, especially for universities.
- **Usability improvements**: As we get feedback from more users, we will make improvements to the look and feel of the website, as well as the user experience.
- **HTTPS support**: For added security, LAPSE (and all of PSEcommunity.org) will move to the HTTPS protocol. Although LAPSE does not store any sensitive user information, this is still good practice.

About LAPSE IDs

LAPSE IDs are **resolvable** at PSEcommunity.org, meaning they will redirect the user to the appropriate page given the ID, or else the user will be notified if a LAPSE ID cannot be found. In some cases, IDs exist but the record is blocked from viewing to the visitor because the record has been embargoed or retracted for some reason.

Most Recent Version of a Record

Each record is assigned a general LAPSE ID, like this:

LAPSE:YYYY.XXXX

Where YYYY is the year of submission and XXXX is the record number for that year. This LAPSE ID resolves to the most recent version of a record. In most cases, **this is the form of the LAPSE ID that you should give to others**, since the user will always be directed to the most recent version. The permalink or URL to the most recent version of this record is:

http://psecommunity.org/LAPSE:YYYY.XXXX

Each LAPSE record shows a suggested citation. When citing a LAPSE record, the suggested citation is of the form:

Adams TA II, Hoseinzade L, Madabhushi PB, Okeke JJ. Comparison of CO2 Capture Approaches for Fossil-Based Power Generation: Review and Meta-Study. (2018). LAPSE:2018.0134

Particular Version of a Record

For a particular version of the record, use this:

LAPSE:YYYY.XXXXvZ

Where $\ensuremath{\mathbb{Z}}$ is the version number. The corresponding permalink or URL is:

http://psecommunity.org/LAPSE:YYYY.XXXXvZ

This will resolve to version Z of this record specifically. The page for the main version of a record (LAPSE:YYYY.XXXX) will lists the versions available and the LAPSE IDs for each one. A warning message will be displayed to viewers who are looking at out-of-date versions of the record.

Most Recent Version of a Particular File

You can refer to the most recent version of a particular file by the following designation:

LAPSE:YYYY.XXXX-F

Where $\ensuremath{\mathbb{F}}$ is the file number, with the corresponding permalink / URL:

http://psecommunity.org/LAPSE:YYYY.XXXX-F

This always resolves to the most recent version of file F (or more accurately, a page containing a link to the file and corresponding meta data) even if that file only is found in previous versions of a record and not in the most up-to-date version.

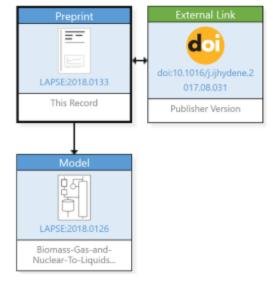
Particular Version of a Particular File

Similarly, you can refer to a particular version Z of a particular file ${\sf F}.$

LAPSE:YYYY.XXXX-FvZ

With the corresponding permalink / URL as expected:

http://psecommunity.org/LAPSE:YYYY.XXXX-FvZ

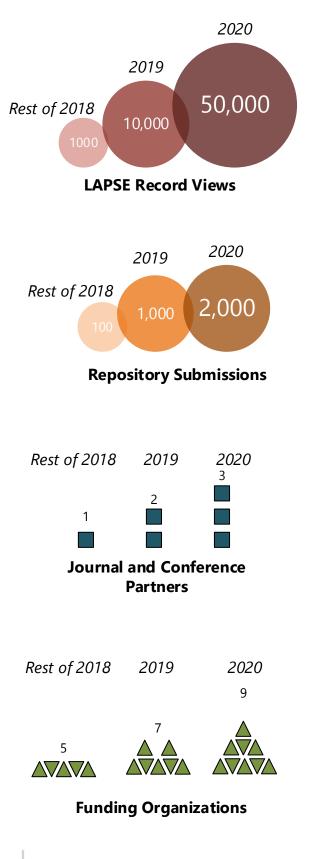


A record map example. This is for a pre-print of an article, but conceptually it is linked to the publisher's version of the article as a "sibling" work, and, another LAPSE record which is a derivative work (a model). In this case, the user is trying to show that the model was derived conceptually from the material presented in the paper.



Metrics for Success and Goals for Growth

Our goals for the next three years are as follows:



Strategy for growth:

- Users make references to LAPSE records in presentations, of own work, in research citations.
- Google Scholar indexing drives additional traffic
- Conferences print LAPSE records of presentations for attendees to download
- Professors post course material and refer to students for download
- Links between records drive users to view additional records.

Strategy for growth:

- Journal and conference partnerships encourage submissions or automatically submit.
- Society communications (listservs, mailling lists, websites, social networks).
- Outreach and use by funding partners

Strategy for growth:

- Network with conference organizers and journal editors
- Provide special value such as convenient forms for attendees to use, bulk-upload features.
- Use standard PubMed format for easy uploads.

Strategy for growth:

- Outreach to additional universities and societies
- Keep costs low
- Maintain value
- Set high goals
- Provide custom functionality to funders or specific feature requests
- At 9 funders I may be able to implement DOI support.

Thank You!

Thank you for your support for LAPSE! Since our volunteers are providing their time, this allows your donations to support key infrastructure requirements such as:

- High throughput web servers
- Storage space
- Anti-virus software
- Geo-colocation
- DDOS attack management
- Redundancy
- Domain name and hosting

Contact Us

For general inquiries about LAPSE, or for how you can **become a supporting member or a volunteer**, contact:

info@psecommunity.org

To report abuse, spam, copyright violations, or other legal issues, contact:

abuse@psecommunity.org

For website useability, contact:

help@psecommunity.org

To contribute to the online discussion about LAPSE, check out our discussion forums at:

http://psecommunity.org/forums/forum/lapse



Prof. **Thomas A. Adams II**, P.Eng. LAPSE Creator and Director Associate Professor, Chemical Engineering, McMaster University Chair, Systems & Control Division, Canadian Society for Chemical Engineering tadams@mcmaster.ca

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