



Krakow, 24<sup>th</sup> of February 2021

**SYLINDA Synchrotron Light Industry Applications  
(grant agreement No. 952148)**

**Deliverable Number D3.5:**

***The list of publications in the relevant research fields in the reference period***

SYLINDA aims to boost the research and development capabilities of SOLARIS, the Polish Synchrotron facility. The boosting is based on the experience brought by the Partners: ALBA Synchrotron (Spain), Hochschule Niederrhein University of Applied Sciences (Germany), Rheinische Friedrich-Wilhelms-Universität Bonn (Germany).

SOLARIS is a new synchrotron facility, which operates since 2018. SOLABS is a SOLARIS XAS-beamline, which broad capabilities in measuring low Z-elements and high-resolution spectroscopy that will be reinforced in the framework of the SYLINDA project. SOLABS is under construction now, its commissioning will start in spring 2021. SOLABS team is also very new, it has been formed in 2020.

**Therefore, SOLARIS doesn't have publications in the relevant fields of research in the reference period of three years before the signature of the Grant Agreement.**

**It should be also emphasized that till the moment there are no joint publications of the Consortium Partners and SOLARIS.**

However, individually more experienced SYLINDA partners (ALBA Synchrotron (Spain), Hochschule Niederrhein University of Applied Sciences (Germany), Rheinische Friedrich-Wilhelms-Universität Bonn (Germany)) have publications in the relevant fields of research and have experience in cooperation with industry, where measurements and researches with low Z-elements and high resolution spectroscopy have been performed but due to confidentiality reasons, those results are not published. For example, at CLAEISS measurements at the Sulfur and Chlorine K-edge were performed but information on them can't be announced.

Therefore, the twinning of SOLARIS with such experienced partners will give a boost to SOLARIS involvement in industrial projects and also will be beneficial to each partner of the consortium, as a good platform for future cooperation.

The list of publications published by experienced partners individually is attached as *Annex 1*.



**Annex 1 to Deliverable Number D3.5**

List of publications **published by experienced partners individually** in the relevant fields of research

*Please note: the following list is only to demonstrate the Partners' potential to support SOLARIS in developing competences in the research fields indicated in the Project. This list cannot be taken as the SOLARIS knowledge base level for progress assessment.*

- **ALBA Synchrotron (Spain)**

1. F. Serrano-Sánchez, J.C. Conesa, J.E. Rodrigues, **C. Marini**, J.L. Martínez, J.A. Alonso, *Divalent chromium in the octahedral positions of the novel hybrid perovskites  $CH_3NH_3Pb_{1-x}Cr_x(Br,Cl)_3$  ( $x = 0.25, 0.5$ ): Induction of narrow bands inside the bandgap*, Journal of Alloys and Compounds 821 (2020) 153414. <https://doi.org/10.1016/j.jallcom.2019.153414>
2. D. Muñoz, L. Marcano, R. Martín-Rodríguez, **L. Simonelli**, A. Serrano, A. García-Prieto, M. L. Fdez-Gubieda, A. Muela, *Magnetosomes could be protective shields against metal stress in magnetotactic bacteria*, Scientific Reports 10 (2020) 11430. <https://doi.org/10.1038/s41598-020-68183-z>
3. W. Hua, B. Schwarz, R. Azmi, M. Müller, M. Susana Dewi Darma, M. Knapp, A. Senyshyn, M. Heere, A. Missyul, **L. Simonelli**, J. R. Binder, S. Indris, H. Ehrenberg, *Lithium-ion (de)intercalation mechanism in core-shell layered  $Li(Ni,Co,Mn)O_2$  cathode materials*, Nano Energy 78 (2020) 105231. <https://doi.org/10.1016/j.nanoen.2020.105231>
4. M. Y. Hacisalihoglu, **L. Simonelli**, **C. Marini**, A. Provino, A. Martinelli, P. Manfrinetti, M. Putti, N. L. Saini, *Mn substitution effect on the local structure of  $La(Fe_{1-x}Mn_x)AsO$  studied by temperature dependent x-ray absorption measurements*, Journal of Physics: Condensed Matter 33 (2020) 095803. DOI: 10.1088/1361-648X/abfdb3
5. W. Hua, M. Chen, B. Schwarz, M. Knapp, M. Bruns, J. Barthel, X. Yang, F. Sigel, R. Azmi, A. Senyshyn, A. Missiul, **L. Simonelli**, M. Etter, S. Wang, X. Mu, A. Fiedler, J. R. Binder, X. Guo, S. Chou, B. Zhong, S. Indris, H. Ehrenberg, *Lithium/Oxygen Incorporation and Microstructural Evolution during Synthesis of Li-Rich Layered  $Li[Li_{0.2}Ni_{0.2}Mn_{0.6}]O_2$  Oxides*, Advanced Energy Materials 9 (2019) 1803094. DOI: 10.1002/aenm.201803094
6. H.-E. Nieminen, V. Miikkulainen, D. Settapani, **L. Simonelli**, P. Hönicke, C. Zech, Y. Kayser, B. Beckhoff, A.-P. Honkanen, M. J. Heikkilä, K. Mizohata, K. Meinander, O.M.E. Ylivaara, S. Huotari, and M. Ritala, *Intercalation of Lithium Ions from Gaseous Precursors into  $\beta$ - $MnO_2$  Thin Films Deposited by Atomic Layer Deposition*, The Journal of Physical Chemistry C 123 (2019) 15802-15814. DOI: 10.1021/acs.jpcc.9b03039
7. **C. Marini**, R. Boada, J. Prieto Burgos, N. Ramanan, I. García Domínguez, J. Zhao, T.T. Xiao, **L. Simonelli**. *Low-cost vacuum compatible liquid cell for hard X-ray absorption spectroscopy*, Nuclear





Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 908 (2018) 333-337. DOI: 10.1016/j.nima.2018.08.036

8. **L. Simonelli**, A. Sorrentino, **C. Marini**, N. Ramanan, D. Heinis, W. Olszewski, A. Mullaliu, A. Birrozzi, N. Laszczynski, M. Giorgetti, S. Passerini, D. Tonti, *Role of Manganese in Lithium- and Manganese-Rich Layered Oxides Cathodes*, *The Journal of Physical Chemistry Letters* 10 (2019) 3359–3368. DOI: 10.1021/acs.jpcclett.9b01174

- **Rheinische Friedrich-Wilhelms-Universität Bonn (Germany)**

1. W. Limphirat, N. Wiriya, S. Tonlublao, S. Chaichoy, P. Pruekthaisong, S. Duandmanee, P. Kamonpha, D. Kaewsuwan, N. Meethong, R.P. Poo-arporn, P. Songsiriritthigul, **J. Hormes**, Y. Poo-arporn, *The current status of time-resolved XAS beamline at SLRI and application on in situ experiments*, *Radiation Physics and Chemistry* 171 (2020) 108750. <https://doi.org/10.1016/j.radphyschem.2020.108750>
2. **J. Hormes**, L. Bovenkamp-Langlois, W. Klysubun, O. Kizilkaya, *Calcium X-ray absorption near edge structure (XANES) spectra: A thermometer for the firing temperature of ceramics?*, *Microchemical Journal* 154 (2020) 104571. <https://doi.org/10.1016/j.microc.2019.104571>
3. **J. Hormes**, G.-L. Bovenkamp-Langlois, W. Klysubun, S. Gai, N. Börste, M. Kleine, *Baumaterialien des Paderborner Doms: Untersuchungen mittels synchrotron-strahlungsbasierter Techniken*, in: *Die Paderborner Kathedrale als Kirchen-, Kunst- und Lebensraum*, eds. N. Börste, S. Kopp, J. Misserre, Bonifatius Verlag Paderborn (2020) 134 – 141.

List of **joint publications published by Bonn University (Germany) and Hochschule Niederrhein University of Applied Sciences** in the relevant fields of research in the reference period of three years prior to the signature of the grant agreement

1. K. Chitpirom, A. Akaracharanya, S. Tanawupawat, N. Leeptpatpiboon, K. Kim KyoungWoong, **J. Hormes**, **A. Prange**, *Characterization of arsenic speciation using XANES spectroscopy in *Comamonas terrae*, an arsenite-oxidizing bacterium isolated from agricultural soil in Thailand*, *Journal of Food, Agriculture & Environment* 15 (2017) 44-47.
2. U. Zanzen, L. Bovenkamp-Langlois, W. Klysubun, **J. Hormes**, **A. Prange**, *The interaction of copper ions with *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and *Escherichia coli*: an X-ray absorption near-edge structure (XANES) spectroscopy study*, *Archives of Microbiology* 200 (2018) 401– 412. <https://doi.org/10.1007/s00203-017-1454-2>
3. **A. Prange**, M. Sari, S. von Ameln, C. Hajdu, R. Hambitzer, S. Ellinger, **J. Hormes**, *Characterization of selenium speciation in selenium-enriched button mushrooms (*Agaricus bisporus*) and selenized yeasts (dietary supplement) using X-ray absorption near-edge structure (XANES) spectroscopy*, *Journal of Trace Elements in Medicine and Biology* 51 (2019) 164-168. <https://doi.org/10.1016/j.jtemb.2018.10.018>

