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Employment

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Electrical Engineering and Power Electronics
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Brussels, Belgium
31 Oct 2024 → 31 Oct 2025

postdoctoral researcher

MOBI - Electromobility Research Centre
Vrije Universiteit Brussel
Brussels, Belgium
31 Oct 2024 → 31 Oct 2025

MOBI - Electromobility Research Centre

Vrije Universiteit Brussel
Brussels, Belgium
1 Jan 2023 → present

Research outputs

Healing the battery and the planet: An environmental perspective on self-healing batteries for smartphones

Lavigne Philippot, M., Güney, E., Dammala, L. N. V. P. K., Dermenci, K. B., Yuca, N., Van Mierlo, J., Berecibar, M. & Messagie, M., 15 Jan 2025, In: Journal of Cleaner Production. 489, 10 p., 144645.

Dataset with updated ozone depletion characterization factors for life cycle impact assessment

Van Den Oever, A., Puricelli, S., Costa, D., Thonemann, N., Lavigne Philippot, M. & Messagie, M., Dec 2024, In: Data in Brief. 57, 5 p., 111103.

Powering the circular future: Climate change and economic perspectives on second-life batteries in the Belgian context

Huber, D., Van Den Oever, A., Lavigne Philippot, M., Costa, D., Coosemans, T. & Messagie, M., Dec 2024, In: Journal of Industrial Ecology. 28, 6, p. 1940-1951 12 p.

Revisiting the challenges of ozone depletion in life cycle assessment

Van Den Oever, A., Puricelli, S., Costa, D., Thonemann, N., Lavigne Philippot, M. & Messagie, M., Jun 2024, In: Cleaner Environmental Systems. 13, June 2024, 15 p., 100196.

Integrating LCA And MFA through Linear Programming: Assessing Pathways for Energy Storage Within The European Union

Ferrari, L., Messagie, M., Lavigne Philippot, M., Mathieu, F. & Bobba, S., 9 May 2024.

Life Cycle Assessment of Electric Traction Machine Considering Novel Recycling Processes for Permanent Magnet Circularity

D'Amore, L., Jusselme, J., Lavigne Philippot, M., Messagie, M. & Bauer, T., 9 May 2024.

Life cycle assessment of future energy system flexibility – a methodological framework applied to Belgium

Huber, D., Lavigne Philippot, M., Felice, A., Putratama, M. A., Coosemans, T. & Messagie, M., 9 May 2024, (Unpublished) p. 1-2. 2 p.

ECOSCORE for Vehicles Procurement in Belgium: an Update in the Methodology to Integrate Life Cycle Assessment Approach

D'Amore, L., Lavigne Philippot, M., Messagie, M. & Denys, T., 7 May 2024.

Disaggregating prospective macroeconomic scenarios to quantify xEV battery raw materials needs

Ferrari, L., Lavigne Philippot, M. & Messagie, M., 23 Feb 2024. 1 p.

Life cycle sustainability assessment of batteries for electric vehicles

Lavigne Philippot, M., 2024, 166 p.

Environmental consequences of vehicle-to-grid for a future energy system: A case study of Eastern Denmark

Huber, D., Lavigne Philippot, M. & Messagie, M., 8 Sep 2023, (Unpublished) p. 1-1. 1 p.

Ecoscore: developing an LCA score to help policy decision-making and consumer decision on passenger cars in Belgium

D'Amore, L., Mesquita Bordalo Da Costa, D., Lavigne Philippot, M., Messagie, M. & Denys, T., 6 Sep 2023.

Eco-Efficiency as a Decision Support Tool to Compare Renewable Energy Systems

Huber, D., Martinez Alonso, A., Lavigne Philippot, M. & Messagie, M., 1 Jun 2023, In: Energies. 16, 11, p. 1-25 25 p., 4478.

Prospective Life Cycle Assessment of a smart battery cell

Mesquita Bordalo Da Costa, D., Lavigne Philippot, M., Berecibar, M. & Messagie, M., 4 May 2023, (Unpublished).

Weighted eco-efficiency for energy systems: What can we learn from different stakeholder groups?

Huber, D., Lavigne Philippot, M. & Messagie, M., 4 May 2023, (Unpublished) p. 1-2. 2 p.

Life cycle assessment of a lithium-ion battery with a silicon anode for electric vehicles

Philippot, M. L., Costa, D., Cardellini, G., Sutter, L. D., Smekens, J., Mierlo, J. V. & Messagie, M., Apr 2023, In: Journal of Energy Storage. 60, 12 p., 106635.

Levelized cost of storage of second-life battery applications in Flanders, Belgium

Huber, D., Lavigne Philippot, M., Mesquita Bordalo Da Costa, D., Smekens, J. & Messagie, M., 19 Sep 2022, p. 1-6. 6 p.

Environmental feasibility of second-life battery applications in Belgium

Philippot, M., Huber, D., Costa, D., Smekens, J., Mierlo, J. V. & Messagie, M., 16 Sep 2022, (Unpublished) p. 1-6.

Environmental impact of the second life of an automotive battery: Reuse and repurpose based on ageing tests

Philippot, M., Mesquita Bordalo Da Costa, D., Hosen, M. S., Senécat, A., Brouwers, E., Nanini-Maury, E., Van Mierlo, J. & Messagie, M., 15 Sep 2022, In: Journal of Cleaner Production. 366, 11 p., 132872.

Life cycle assessment of battery electric vehicles: Implications of future electricity mix and different battery end-of-life management

Koroma, M. S., Mesquita Bordalo Da Costa, D., Messagie, M., Philippot, M., Hosen, M. S., Coosemans, T. & Cardellini, G., 20 Jul 2022, In: Science of the Total Environment. 831, 26 p., 154859.

The PEFCR on batteries: applicable to a self-healing smartphone battery?

Philippot, M., Costa, D., Mierlo, J. V. & Messagie, M., 15 May 2022.

Environmental Impacts of Battery Electric Vehicles: Implications of the Cascaded Battery Life Cycle and Yearly Charging Electricity

Koroma, M. S., Mesquita Bordalo Da Costa, D., Messagie, M., Cardellini, G., Hosen, M. S. & Philippot, M., 3 May 2021, (Unpublished) p. 1. 1 p.

Batteries Europe ETIP WG2: Raw Materials and Recycling Roadmap

Kauranen, P., Kojo, I. V., Salmi, O., Vassart, A., Lundström, M., Sayfritz, S., Wiesner, E., Trapp, V., Forte, F., Faucheux, V., Zygmunt, M., Tomboy, W., Bazin, J-L., Hilario, F., Päivi, K., Pereira, B., Pettit, C., Van der Eijk, C., Roschger, P., Berruti, C. & 7 others, Gonzalez Ramon, N., Miguez, J. M., Philippot, M., Capiglia, C., Hakanen, E., Ibañez, A. & Le Petit, Y., 24 Feb 2021, European Commission. 73 p.

Water footprint of the manufacturing of a traction lithium ion battery pack

Philippot, M., Ayerbe, E., Hoedemaekers, E., Van Mierlo, J. & Messagie, M., 19 May 2019, (Unpublished).

Eco-Efficiency of a Lithium-Ion Battery for Electric Vehicles : Influence of Manufacturing Country and Commodity Prices on GHG Emissions and Costs

Philippot, M., Alvarez, G., Ayerbe, E., Van Mierlo, J. & Messagie, M., 19 Feb 2019, In: Batteries. 5, 1, 17 p., 23.

LIFE CYCLE ASSESSMENT OF SILICON ALLOY BASED LITHIUM-ION BATTERY FOR ELECTRIC VEHICLES

Philippot, M., Smekens, J., Van Mierlo, J. & Messagie, M., 2019, *Urban Transport XXIV*. Riejos, . N. F. A. O. (ed.). WIT Press, p. 129-139 11 p. (WIT Transactions on the Built Environment; vol. 182).

Activities

Life cycle assessment of future energy system flexibility – a methodological framework applied to Belgium

Dominik Huber (Speaker), Maeva Lavigne Philippot (Contributor), Alex Felice (Contributor), Muhammad Andy Putratama (Contributor), Thierry Coosemans (Contributor) & Maarten Messagie (Contributor)
5 May 2024 → 9 May 2024

Environmental consequences of vehicle-to-grid for a future energy system: A case study of Eastern Denmark

Dominik Huber (Speaker), Maeva Lavigne Philippot (Contributor) & Maarten Messagie (Contributor)
6 Sep 2023 → 8 Sep 2023

Weighted eco-efficiency for energy systems: What can we learn from different stakeholder groups?

Dominik Huber (Speaker), Maeva Lavigne Philippot (Contributor) & Maarten Messagie (Contributor)
30 Apr 2023 → 4 May 2023

Environmental feasibility of second-life battery applications in Belgium

Dominik Huber (Speaker), Maeva Lavigne Philippot (Contributor), Daniele Mesquita Bordalo Da Costa (Contributor), Jelle Smekens (Contributor), Joeri Van Mierlo (Contributor) & Maarten Messagie (Contributor)
16 Sep 2022 → 19 Sep 2022

Levelized cost of storage of second-life battery applications in Flanders, Belgium

Dominik Huber (Speaker), Maeva Lavigne Philippot (Contributor), Daniele Mesquita Bordalo Da Costa (Contributor), Jelle Smekens (Contributor) & Maarten Messagie (Contributor)
16 Sep 2022 → 19 Sep 2022

The second life of an electric vehicle battery designed for dismantling in a stationary storage system

Maeva Philippot (Speaker), Md Sazzad Hosen (Contributor), Thierry Coosemans (Contributor) & Maarten Messagie (Contributor)
6 May 2021

And what about second life? at Mobi Seminar 2020 - The future mobility & logistics is like a foreign country: We will do things differently

Maeva Philippot (Speaker)
24 Nov 2020

Water footprint of the manufacturing of a traction lithium ion battery pack

Maeva Philippot (Speaker), Elixabete Ayerbe (Contributor), Erik Hoedemaekers (Contributor), Joeri Van Mierlo (Contributor) & Maarten Messagie (Contributor)
19 May 2019

24th International Conference on Urban Transport and the Environment

Maeva Philippot (Speaker)
20 Sep 2018

Projects

EUAR86: AM4BAT : Gen. 4b Solid State Li-ion battery by additive manufacturing

Hosen, M. S., Lavigne Philippot, M., Yadav, P. & Berecibar, M.
1/07/22 → 30/06/26

EU545: HiFi-ELEMENTS : High Fidelity Electric Modelling and Testing

Hegazy, O., Van Mierlo, J., Messagie, M., Chakraborty, S., Lavigne Philippot, M. & Peng, W.
1/10/17 → 31/12/20

EUAR40: H2020 - BAT4EVER - Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries

Van Mierlo, J., Berecibar, M., Messagie, M., Dermenci, K. B., Lavigne Philippot, M. & Boursot, I.
1/09/20 → 29/02/24

EUAR141: PHOENIX : Building more reliable and performant batteries by embedding sensors and self-healing functionalities to detect degradation and repair damage via advanced Battery Management System

Berecibar, M., Messagie, M., Dermenci, K. B., Lavigne Philippot, M., de Hoog, J. & Boursot, I.
1/05/23 → 30/04/27

Datasets

Eco-efficiency as a decision support tool to compare renewable energy systems - supporting material

Huber, D. (Creator), Martinez Alonso, A. (Creator), Lavigne Philippot, M. (Creator) & Messagie, M. (Creator), Zenodo, 18 May 2023
DOI: 10.5281/zenodo.7947791, <https://doi.org/10.5281/zenodo.7947791>

Healing the battery and the planet: an environmental perspective on self-healing batteries for smartphones

Lavigne Philippot, M. (Creator), Güney, E. (Creator), Dammala, L. N. V. P. K. (Creator), Dermenci, K. B. (Creator), Yuca, N. (Creator), Van Mierlo, J. (Creator), Berecibar, M. (Creator) & Messagie, M. (Creator), Zenodo, 11 Jul 2024
DOI: 10.5281/zenodo.12724732

Life Cycle Impact Assessment method for ozone depletion based on WMO 2022

Van Den Oever, A. (Creator), Puricelli, S. (Creator), Costa, D. (Creator), Thonemann, N. (Creator), Lavigne Philippot, M. (Creator) & Messagie, M. (Creator), Zenodo, 12 Nov 2024
DOI: 10.5281/zenodo.12818532

Powering the Circular Future: Climate Change and Economic Perspectives on Second-Life Batteries in the Belgian Context - Supporting Information S2 and S3

Huber, D. (Creator), Van Den Oever, A. (Data Collector), Lavigne Philippot, M. (Data Collector), Costa, D. (Data Collector), Coosemans, T. (Supervisor) & Messagie, M. (Supervisor), Zenodo, 3 Jul 2024
DOI: <https://doi.org/10.5281/zenodo.13785670>

User-defined scenarios to update future electricity mixes of Belgium using PLCA

Huber, D. (Creator), Van Den Oever, A. (Data Collector), Lavigne Philippot, M. (Data Collector), Costa, D. (Data Collector), Coosemans, T. (Supervisor) & Messagie, M. (Supervisor), Zenodo, 26 Mar 2024
DOI: <https://doi.org/10.5281/zenodo.10878143>