

11th Society And Materials International Conference SAM 11

15-16 May 2017, Trondheim



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Day 1 – 15 May

8.30 Welcome coffee and registration

9.00 Welcome address - Leiv Kolbeinsen, NTNU

Session 1: Circular Economy - Chair: Bertrand Laratte

9.20 Keynote Lecture - Daniel Müller, NTNU - Circular Economy: Why? How? When?

10.00 *In support of the circular economy: an exercise in stakeholder mapping*, S. Bajaj, FICCI, India

10.20 *The glass recycling industry: a concrete example of circular economy*, M. Vermette, Eco Entreprises Québec, Canada

10.40 Coffee break & Poster session

11.10 *Recycling potential of secondary phosphorus resources as assessed by integrating substance flow analysis and plant-availability*, H. A. Hamilton, NTNU, Norway

11.30 *Shredding End-of-Life Vehicles to evaluate material recycling rates*, G. Fick, IRT M2P, France

11.50 *To transport waste or transport recycling plant: insights from life-cycle analysis*, G. Grimaud, MTB Recycling - Arts & Métiers ParisTech, France

12.10 Lunch

Session 2: New Developments in LCA Methodology

Chair: Anne-Laure Hettinger

13.40 Keynote Lecture - Fionn MacKillop, Heriot-Watt University - Society, materiality and resilience/sustainability: global inquiries from the fields of industrial waste management, urban climate science and housing studies

14.20 *Improving the modelling of avoided products in waste-management-oriented LCA*, L. Rigamonti, Politecnico di Milano, Italy

14.40 *Allocations and End of Life Management in LCA: How to decide?*, M. Pelote, IRT M2P, France

15.00 *Respecting material and energy balance in attributional LCA: reducing the influence of allocation*, G. Majeau-Bettez, CIRAI, Polytechnique Montréal, Canada

15.20 *Assessing resource depletion impacts of lithium-ion batteries - What about the price?*, J. F. Peters, Helmholtz-Institute Ulm, Germany

15.40 Coffee break & Poster session

16.10 *Combining LCA and prospective techno-economic models to assess the environmental and economic sustainability of emerging materials and energy pathways*, A. Levasseur, CIRAI, Polytechnique Montréal, Canada

16.30 *Life Cycle Assessment of DurabRoads Materials*, D. Deepankar, BSRIA Ltd, United Kingdom

Session 3A: Social and Economics - Chair: Valentina Colla

- 16.50 *Integrated LCA & LCC analysis to stimulate high quality recycling of construction & demolition waste*, A. Di Maria, KU Leuven, Belgium
- 17.10 *What are we missing? Value chain greenhouse gas emissions accounting in the metals and minerals industry*, S. Greene, MIT, USA
- 17.30 *The impact of electric vehicles on lithium recycling - a critical analysis of material demand for a more sustainable mobility*, S. Ziemann, Karlsruhe Institute of Technology, Germany
- 17.50 Jean-Sébastien THOMAS Award ceremony, Anne-Laure Hettinger, ArcelorMittal**

18.20 End of sessions day 1

19.30 City guided tour - Meeting in front of the Nidaros Cathedral, in Trondheim

20.30 Gala dinner - BANKSALEN - Kongens gate 4, 7010 Trondheim

Day 2 – 16 May

Session 3B: Social and Economics - Chair: Valentina Colla

- 8.30 Welcome coffee**
- 9.00 Keynote Lecture - Andrea Declich, LSC - Society and materials. An interpretation of the subject also in the light of gender**
- 9.40 *Taller, fatter, older and hungrier: a study of world population, human mass and caloric intake over the past 40 years*, F. Vásquez, NTNU, Norway
- 10.00 *Turning sustainability into a catalyst for innovation*, A.-L. Hettinger, ArcelorMittal, France
- 10.20 *Introduction of symbiotic Human-Robot-Cooperation in the steel sector: an example of social innovation*, V. Colla, Scuola Superiore Sant'Anna, TeCIP Institute, ICT-COISP Center, Italy
- 10.40 *Local green economy indicators - case: rural villages in Lapland*, K. Timonen, Natural Resources Institute Finland (Luke), Finland

11.00 Coffee break & Poster session

Session 4A: MFA and Methodology beyond LCA

Chair: Ichiro Daigo

- 11.30 Keynote Lecture - Laurent Levacher, EDF - The smart factory of the future, revisited in 2017**
- 12.10 *Early attempts at developing an MFA for steel*, J.-P. Birat, IF Steelman, France

- 12.30 *Possibility of sustainable recycling of steel despite impurity contamination*, I. Daigo, University of Tokyo, Japan

12.50 Lunch

Session 4B: MFA and Methodology beyond LCA

Chair: Ichiro Daigo

- 14.20 *Mapping the spatial-temporal dynamics of global cement, steel, and aluminum in-use stocks*, G. Liu, University of Southern Denmark, Denmark
- 14.40 *Reconsideration of prioritization of automotive materials recycling in terms of total material requirement*, E. Yamasue, Ritsumeikan University, Japan

Session 5: Sustainability and Eco-design of Processes, Products and Services - Chair: Annie Levasseur

15.00 Keynote Lecture - Leiv Kolbeinsen, NTNU - The Importance of Silicon to Society

- 15.40 *Steel and biodiversity: a promising alliance*, K. Peters, ESTEP, Belgium
- 16.00 *Building ecodesign & the role of steel in modern construction*, R. Turconi, ArcelorMittal, France
- 16.20 Coffee break & Poster session**
- 16.50 *Environmental assessment of innovations for car light-weighting*, J. Garcia, Groupe PSA, France
- 17.10 *Environmental assessment of PSS, feedback on 2 years of experimentation*, R. Allais, PACTE CNRS UMR 5194, France

17.30 SAM 10 Conclusions - Jean-Pierre Birat, IF Steelman



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Posters

Environmental performance of Li-ion batteries for direct marketing of wind power, M. Baumann, Karlsruhe Institute of Technology - Universidade Nova de Lisboa, Germany & Portugal

Education of students and citizens for new materials, A. Delebarre, Mines ParisTech - PSL Research University - Centre Thermodynamique des Procédés, France

Development of a Life Cycle Cost model for vanadium RedOx flow batteries, J. Fulton, Institute for Technology Assessment and Systems Analysis (ITAS), Germany

Use of bio-based binder in the building sector, S. Gerbinet, University of Liège, Belgium

Life Cycle Assessment of aluminium recycling: case of electric cables, G. Grimaud, MTB Recycling - Arts & Métiers ParisTech, France

Ecodesign of a "vapour and air barrier membrane - insulator" system, following a cradle to cradle approach - ATISOLC2C, S. Gros Lambert, University of Liège, Belgium

Life Cycle Assessment (LCA) of solar thermal tower power plants, E. Knüpffer, LBP Universität Stuttgart, Germany

LCA in space - Current status and future development, N. Ko, University of Stuttgart, Germany

Life Cycle Assessment of freight transport in Belgium, A. L. Merchan and S. Gros Lambert, University of Liège, Belgium

Global distribution of material stocks: iron, copper, and nickel, K. Nakajima, National Institute for Environmental Studies, Japan

Data Envelopment analysis for steel products considering mining activities in terms of total material requirement, A. Oyaizu, Ritsumeikan University, Japan

Indicators for local green economy-criteria and selection, A. Reinikainen, Natural Resources Institute Finland (Luke), Finland

Environmental and Economic Sustainability Assessment of LED light bulb recycling in France, R. S. M. Mizanur, UTT, France

Organizing Committee

T. C. Eikevik, L. Kolbeinsen, M. Lenes, D. Müller (**NTNU**)

A. Declich (**LSC**)

F. Feudo (**K&I**)

G. Fick, M. Pelote, S. Remy (**IRT-M2P**)

M. Chiappini (**ArcelorMittal**)

JP. Birat (**IF Steelman**)

Venue

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