

# 12<sup>th</sup> Society And Materials International Conference

## SAM 12

22 & 23 May 2018

Metz, FRANCE



### Sponsors:



CHANGING EVERY DAY



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### Day 1 – 22 May

8.30 Welcome coffee and registration

9.00 Welcome address – ENIM, France, Jean-Pierre BIRAT, IF Steelman, France

#### Session 1: Sustainability in practice, eco-design and new business models

9.20 Keynote Lecture: *Energy and materials in the low carbon transition: scarcity or abundance ?*, Patrick CRIQUI, CNRS, France

10.00 *Assessing the Efficiency of the Off-gas Network Management in Integrated Steelworks*, V. COLLA, Scuola Superiore Sant'Anna, Italy

10.20 *SMEs and Eco-Design: How to Deploy Massively*, S. MAYER, Pôle éco-conception, France

10.40 Coffee break & Poster session

11.10 *Integration of Sustainability in Research and Innovation: Perspectives from ArcelorMittal's Experience*, A.-L. HETTINGER, ArcelorMittal R&D, France

11.30 *Life Cycle Assessment of a Carsharing Product-Service System*, O. GUYON, PSA, France

11.50 *Sustainable Business Models & Life Cycle Assessment: Leasing of Steel Sheet Piles*, R. TURCONI, ArcelorMittal R&D, France

12.10 Lunch

#### Session 2: Social sciences and materials

13.40 Keynote Lecture: *Opportunities and limits of the Circular Economy - A metallurgical perspective*, Markus REUTER, University of Freiberg, Germany

14.20 *How Product Social Impact Assessment (PSIA) differs from Product Social Value Assessment (PSVA) and why they complement each other*, M. CARATY & J.P. CHANTEAU, ArcelorMittal R&D / Université Grenoble Alpes, France

14.40 *A New Innovation Paradigm: Combining Technological and Social Innovation*, A. SCHROEDER, TU Dortmund, Germany

15.00 *Approaching the "Human Factors" in Formation of Industrial Symbiosis*, H. FYHN, NTNU, Norway

15.20 *Social Cycle of Materials and Collective Actors: Some Ideas for Analysis*, A. DECLICH, Knowledge & Innovation, Italy

15.40 Coffee break & Poster session

16.10 *LCA-based Calculation of the Added Value of Products: Case Study of a Concentrated Solar Power Plant*, N. KO, University of Stuttgart, Germany

16.30 *Societal Life Cycle Impact Assessment Framework for Potential Job Creation and Case Study on the French Carbon Fiber Aeronautical Recycling Sector*, A. THEVENOT, Université de Bordeaux, France





### Session 3: LCA, MFA and new methodologies

- 16.50 *End of Life of Wind Energy Systems: a Regional Case Study*, N. TAZI, CREIDD, France
- 17.10 *Impact of Heavy Metals on Human Toxicity Using LCA: a Case Study for Walloon Corn*, S. GERBINET, University of Liège, Belgium
- 17.30 *Emergy Analysis of Biogas Production Using a Life Cycle Inventory Approach*, A. MARVUGLIA, LIST, Luxemburg
- 17.50 *End of Life Scenarios for Construction Materials: a Case Study from a Luxembourgish Eco-Village*, A. BOLOWICH, LIST, Luxemburg

### 18.10 End of sessions day 1

### 19.15 City guided tour - Meeting in front of train station

### 20.30 J.S. Thomas Award & Gala dinner – La Voile Blanche – Centre Pompidou

## Day 2 – 23 May

### Session 3: LCA, MFA and new methodologies

#### 8.30 Welcome coffee and registration

#### 9.00 Keynote Lecture: *EIT Raw Materials and Circular Economy*, Ignacio CALLEJA, EIT-Raw Materials, Germany

9.40 *Phosphorus and nitrogen management in Austria as an example for the benefits of coupled resource analysis*, J. TANZER, TU Wien, Austria

10.00 *Comparative Assessment of Conventional and Alternative Leather Tanning Processes from a Life Cycle Perspective*, Z.U. CHOWDHURY, KUET, Bangladesh

10.20 *(Im-)Material Flow Analysis for System Innovation*, J. GOBERT, ENPC/INSA Strasbourg, France

#### 10.40 Coffee break & Poster session

### Session 4: Circular economy, beyond the hype

#### 11.10 Keynote Lecture: *The environment, from the standpoints of philosophy and social sciences*, Jean-Pierre BIRAT, IF Steelman, France

11.50 *A dynamic vs an attributional LCA to stimulate circular economy in the construction sector: new construction materials from industrial waste*, K. VAN ACKER, KU Leuven, Belgium

12.10 *VALDEM Project: From LCA of Demolition Waste to Circular Economy of Buildings*, S. GROSLAMBERT, University of Liège, Belgium

#### 12.30 Lunch

14.00 *Decoupling Evaluation Using Total Material Requirement and Life-Cycle CO<sub>2</sub> Emissions*, E. YAMASUE, Ritsumeikan University, Japan

14.20 *An Estimation of the Amount of Dissipated Alloy Elements in Special Steel from Automobile recycling Processes*, Z. ZHANG, Tohoku University, Japan

14.40 *Closing the Loop on Platinum from Catalytic Converters: Contributions from Material Flow Analysis*, M. SAIDANI, Centrale Supélec, France

### Session 5: E-mobility, electrification of energy and energy storage

#### 15.00 Keynote Lecture: *Which innovation for a sustainable future*, Luc CHEFNEUX, Royal Academy of Belgium, Belgium

15.40 *Stationary Battery Systems: Recyclability and the Life Cycle Impact on the Depletion of Mineral Resources*, J. PETERS, KIT, Germany

16.00 *Use Phase Simulation for the Environmental Evaluation of Electrified Vehicle's Traction Batteries*, J. GARCIA, PSA, France

#### 16.20 Coffee break & Poster session

16.50 *Smart, Sustainable & Resilient – How Electric Vehicles Affect the Infrastructures and Resources demand of Cities*, S. ZIEMANN, KIT, Germany

17.10 *Investigating Energy Storage Systems Use Phase*, H. ELZEIN, CIRAI, Canada

17.30 *Using Dynamic Energy and Material Flow Analysis for Assessing the Potential of Circular Approaches to Reduce Resource Criticality*, A. REGETT, FFE e.V., Germany

17.50 *Batteries for Stationary Grid Application – Potential Resource Demand Until 2050*, M. WEIL, KIT, Germany

### 18.10 SAM 10 Conclusions - Jean-Pierre BIRAT, IF Steelman



## Posters

*Development of impact categories for the application of LCA in Space - Space Debris*, N. KO, University of Stuttgart, Germany

*Environmental impact assessment of freight transport in three Belgian scenarios in the year 2030*, S. GROSLAMBERT, University of Liège, Belgium

*Development of Multi-Value Circulation Based on Re-Manufacturing*, K. NAKAJIMA, NIES, Japan

*Industrial Symbiosis performances assessment in integrated Iron and Steel plants using the System Dynamics approach*, R. NORBERT, ArcelorMittal, France

*One Year of Varied Use of Clothing: Sustainability through Renting?*, F. PIONTEK, Ulm University, Germany

*Ukraine's Commitments Under Association Agreement: Challenges and Opportunities for Steel Industry*, V. SHATOKHA, National Metallurgical Academy of Ukraine, Ukraine

*Comparison of Material Flow Analysis Between Canada and France: the Impact of Mining on an Economic System*, A. THEVENOT, University of Bordeaux, France

*Environmental Evaluation of Waste Management Options of Secondary Batteries in Developing Countries*, M. WEIL, KIT, Germany

*Life Cycle Thinking as a future guidance for recycling technologies and raw materials*, R. GRAF & F. GEHRING, Fraunhofer Institute for Building Physics, Germany

*In-use wood-based materials stock in Indonesia: a dynamic material flow analysis*, R. ARYAPRATAMA, University of Freiburg, Germany

*Education of Students and Citizens for New Materials*, A. DELEBARRE, Mines ParisTech, France



### Venue

ENIM – Ecole Nationale d'Ingénieurs de Metz

1 Route d'Ars Laquenexy,  
57078 Metz, France

<http://enim.univ-lorraine.fr>



### Organizing Committee

L. Kolbeinsen, D. Müller (NTNU)

G. Fick, S. Poinot (IRT-M2P)

M. Chiappini (ArcelorMittal)

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### Registration

To register, please fill in the form available [online](#). Deadline: **6 May 2018**.

There is no registration fee!