

**ECOFRAM**  
28-29<sup>th</sup> March 2018

The second International Conference on **ECO-friendly**  
**Flame Retardant Additives and Materials**

# ECOFRAM 2018



**March 28– 29<sup>th</sup>, 2018**  
**Metz, France**



**UNIVERSITÉ  
DE LORRAINE**



**PÔLE M4**  
Matière, Matériaux,  
Métallurgie, Mécanique



CentraleSupélec



<b>Day 1: Wednesday, March 28, 2018</b>		
8:30 - 9:00	Registration and Reception	
9:00 - 9:15	Opening ceremony	
<b><i>Environmental aspects, fire toxicity and smoke</i></b>		
9:15 - 9:50	Keynote: <b>Anna Stec (University of Central Lancashire)</b> Fire effluent toxicity: yields and effects from common materials under different fire conditions	<b>1</b>
9:50 - 10:10	<b>Rodolphe Sonnier</b> (IMT Mines Ales): New Insights into the Investigation of Smoke Production Using a Cone Calorimeter	<b>2</b>
10:10 - 10:30	<b>Toussaint Barboni</b> (Université de Corse): Smoke analysis from forest fuel and effects of toxicity on the organism of the personnel involved	<b>3</b>
10:30 - 11:00	Break/Poster session	
11:00 - 11:20	<b>Carine Chivas-Joly</b> (Laboratoire nationale d'essai): Incineration of selected nanofillers used as additives for EVA-matrix nanocomposites	<b>4</b>
11:20 - 11:40	<b>Ine De Vilder</b> (Centexbel): FLAREX: Mitigation of environmental impact caused by flame retardant textile finishing chemicals	<b>5</b>
<b><i>Regulation, standardization and fire testing</i></b>		
11:40 - 12:00	<b>Hans-W. Marx</b> (Linseis Messgeräte GmbH): Thermal conductivity: measurement techniques	<b>6</b>
12:00 - 12:20	<b>Hakan Kanli</b> (Etimine S.A.): Borates - How compliant they are with respect to European Chemicals Policy	<b>7</b>
12:20 - 14:00	Lunch	
<b><i>New and Sustainable flame retardant additives &amp; Bio-based FR additives and polymers</i></b>		
14:00 - 14:35	Keynote: <b>Manfred Döring- (Fraunhofer Institute)</b> Green synthesis of bio-based flame retardants	<b>8</b>
14:35 - 14:55	<b>Valeriia Karaseva</b> (IMT Mines Ales): New biosourced flame retardant agents based on gallic and ellagic acids for epoxy resins	<b>9</b>
14:55 - 15:15	<b>Fouad Laoutid</b> (MateriaNova): Tannic acid & Phytic acid as building blocks for development of new renewable Flame Retardant agent for Poly(lactic acid)	<b>10</b>
15:15 - 15:35	<b>Benjamin Chollet</b> (IMT Mines Ales) : Lignin's size and functionalization effects on thermal properties and fire behavior of PLA	<b>11</b>
15:35 - 16:00	Break/Poster session	

16:00 - 16:20	<b>Séverine Bellayer</b> (UMET-Université de Lille): Fire Retardant sol-gel coatings for flexible polyurethane foams	<b>12</b>
<b>Day 1: Wednesday, March 28, 2018</b>		
16:20 - 16:40	<b>Laia Haurie</b> (Universitat Politècnica de Catalunya): Radiation grafting of flame retardant resin into wood samples	<b>13</b>
16:40 - 17:00	<b>Andy Goodwin</b> (First Graphene Ltd.): Graphene composites toward development of new generation fire-retardant coatings	<b>14</b>
17:00 - 17:20	<b>Osman Emre Özkan</b> (Kastamonu University): Leaching and thermal properties of fire retardants treated wood	<b>15</b>
19:30	Gala Dinner	

<b>Day 2: Thursday, March 29, 2018</b>		
<i>Life cycle analysis of flame retardant products (ageing, recycling)</i>		
9:00 - 9:35	Keynote: <b>Jean Luc Gardette- (Institut de Chimie de Clermont Ferrand)</b> Mutual influence of weathering and flame retardancy of polymers	<b>16</b>
9:35 - 9:55	<b>Rémy Mangin</b> (Université de Lorraine): Impact of ageing on the fire behaviour of flame-retarded PMMA/PLA blend	<b>17</b>
9:55 - 10:15	<b>Marc Vanhoomissen</b> (Veramtex): Fire and ageing resistant biocomposite for transportation industry	<b>18</b>
10:15 - 10:35	<b>Jonathan Crozier- Chris Thornton</b> (CEFIC-PINFA): Flame retardants in the BioEconomy and the Circular Economy	<b>19</b>
10:35 - 11:00	Break	
<i>Industrial applications and markets for Eco-FR products</i>		
11:00 - 11:20	<b>Bansi L. Kaul</b> (MCA Technologies GmbH): Fire retardancy beyond gas-phase and condense-phase principles	<b>20</b>
11:20 - 11:40	<b>José-Marie Lopez Cuesta</b> (IMT Mines Ales): Flame-retarded PLA core-skin compositions through FDM additive manufacturing	<b>21</b>
11:40 - 12:00	<b>Alexis Chopin</b> (Eurostar Engineering Plastics): Industrial radiation crosslinkable polyamide compounds to comply with stringent flammability requirements and more	<b>22</b>
12:00 -12:20	<b>Fredrik Westin</b> (Deflammo AB): Apyrum in soft vinyl	<b>23</b>
12:20 - 13:50	Lunch	

**Day 2: Thursday, March 29, 2018**

*Fire retardancy of fibers, textiles and composites*

13:50 - 14:25	Keynote: <b>Giulio Malucelli- (Politecnico di Torino)</b> Biomacromolecules as effective “green” flame retardants for textile substrates	<b>24</b>
14:25 - 14:45	<b>Sebastian Rabe</b> (BAM-Bundesanstalt für Materialforschung): Rummaging through industrial waste: Natural fibers in flame retarded thermoplastic starch biocomposites	<b>25</b>
14:45- 15:05	<b>Stéphane Giraud</b> (ENSAIT-GEMTEX): Impact of lignin/zinc phosphinate introduced by melt spinning on the fire retardant properties of bio-source textile structure	<b>26</b>
15:05 - 15:25	<b>Roland El Hage</b> (Lebanese University): A flame retarded chitosan binder for insulating miscanthus/recycled textile fibres reinforced biocomposites	<b>27</b>
15:25 - 15:45	<b>Maud Jimenez</b> (UMET - Université de Lille): Eco-efficient flame retardant selfstratifying coatings for plastics	<b>28</b>
15:45 - 16:05	<b>Raymond Hajj</b> (IMT Mines Ales): Phosphorus grafting on flax fabrics to improve their flame retardancy: a comparison between chemical modification and e-beam radiation	<b>29</b>
16:05	Closing Ceremony	