

EUROMAT 2019 / Bio-based materials

SYMPOSIUM: I5

Title: Bio-based plastics: From feedstock to functional materials.		
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Abstract		
<p>With the EU poised to implement a greenhouse gas reduction target of 80% from the 1990 level by 2050, it is becoming more urgent to source materials and fuels from renewable resources to reduce environmental impact. Bio-based plastics have been used in medical field for years and were also considered for automotive parts in the days of Henry Ford. With the climate change, resource depletion and volatile oil price now on the minds of manufacturers and consumers alike, there is a renewed interest in bio-based plastics.</p> <p>Bio-based plastics are made in whole or partially from renewable biological resources such as starch, cellulose, oils, lignin, proteins and polysaccharides. Many bacterial species are known to naturally accumulate polyhydroxyalkanoates (PHAs) from diverse carbon sources. Sugar cane, for example, has been used to produce bio-ethanol, which can then be used to manufacture polyethylene (PE). Starch has been processed to produce lactic acid and subsequently polylactic acid (PLA). Bio-based plastics are used in a variety of applications to replace conventional plastics derived from petroleum. Recent technology breakthroughs have made substantial improvements to the properties of bio-based plastics enabling their expansion into the mainstream market.</p> <p>This symposium covers biodegradable bioplastics (e.g., PHA and PLA), non-biodegradable bioplastics (e.g., bio-polyethylene terephthalate, bio-PE, bio-polycarbonate and bio-polyamide) and their blends. We aim to engage academic</p>		

and industrial researchers of all career stages, bringing together science and engineering expertise and creating a close-knit community.

We will seek scientific contribution from people working on all aspects of bio-based plastics, from feedstock through to material processing. Specific topics include, but are certainly not limited to, (a) sustainable and economical feedstock for bio-based plastics production, (b) identifying native or engineering microbial platforms for bio-based plastics production, (c) upstream and downstream processing in bio-based plastics production, (d) life-cycle analysis, (e) modification and processing of bio-based plastics, and (f) plastics biodegradation.