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Preparing for future recycling of "green" alternatives- Recycling of polyamides

Jonas Enebro
SP Technical Research Institute of Sweden, Sweden

Introduction of "green" plastics to the market has created a number of issues that need to be investigated. The sustainability benefits of using renewable feedstock may not be sufficient if the material cannot be recycled. Today, plastic recycling is often limited to a few large plastic streams which are cost effective to recycle. However, due to the steadily increasing demand for sustainable material consumption, it is likely to expect that recycling of other plastic materials, which are not extensively recycled today (e.g. bio based plastics, polyamides, polymer blends), will be required in the near future. Both petro- and bio-based plastics will coexist on the market for a long time to come. Thus, the increased use of bio based plastics may have significant implications for the recycled plastics industry in the near future due to concerns regarding costs for separation, increased contamination, yield loss and impact on recycled materials quality. As a part of the project "Sustainable recycling of "green" plastics" a study were conducted, highlighting possible recyclability issues when introducing bio based alternatives to conventional petro-based plastics on the market. This study was conducted using a bio based polyamide (PA1010) as replacement for a fossil based alternative (PA12). The study simulates different recycling scenarios where these two polyamides might be mixed and highlights problems that might arise related to identification and material quality.

Biography

Jonas Enebro completed his PhD in 2008 at the Royal Institute of Technology (KTH) in Stockholm, Sweden. For the past six years he has been working as a research scientist in the Polymer and Fibre section at SP Technical Research Institute of Sweden with the main research focus on renewable polymeric materials, material development and nanocomposites. He is currently supervising two PhD students in the field of nanotechnology and is also WP-leader in a Swedish research project titled "Sustainable recycling of "green" plastics".

Jonas.Enebro@sp.se

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