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How to make "green" plastics "greener"?

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The driving forces behind the last two decades of research and development of bioplastics and biocomposites are tightening legislation and regulations, increasing consumer demands, significant price increases of fossil based materials, unwanted dependence on fossil resources and unstable oil prices. However, the introduction of life cycle assessments (LCA) and systems analysis throughout the production, use and Cradle to Cradle® design concept makes it necessary to ultimately guarantee their sustainability as suitable alternatives to traditional plastics and composites. In order to maximize the effective use of "green" plastics, it is important to prepare for their recycling through a suitable labelling and recycling system and initiatives to increase public awareness and education. Another important issue is to develop technologically viable, effective, efficient and economical recovery systems and end markets for post-consumer bio-based materials without jeopardizing the existing conventional recycling systems. Using biopolymers in the production of durable goods or structural applications requires an in-depth study of their indoor and outdoor ageing and durability properties, for which it is still difficult to find relevant data. Many companies are reluctant to develop durable goods using biopolymers due to fears that such products could have a limited service life. Maintaining high engineering properties throughout the reprocessing and palletisation process of biopolymers and natural fibres requires development of processing technology as well as development of additives that can significantly improve the performance and durability of these materials.

Biography

Ignacy Jakubowicz has completed his PhD in Physical Chemistry in 1985 and afterwards he joined SP. In 2005 he became Associate Professor in Polymer Technology at Chalmers University of Technology. He is currently the R&D Manager at SP Polymer & Fibre section. He has published 25 papers in reputed journals and 45 contributions at international scientific conferences. He is serving as a reviewer for scientific journals. His scientific work comprises lifetime technology and recycling along with development of new polymeric materials with enhanced properties and reduced environmental impact. He is also involved in development of test methods and international standardization.

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