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Resource efficient use of polymers after end of life

Thermoplastic material is often a mixture of a polymer and additives. Less than ten different polymers represents > 95 % of the plastics used in society. Today often the design of plastic containing products is the main reason for difficulties in the material recycling process. The consequence is an extensive down cycling to products that very seldom can replace use of virgin plastics, or even worse is sent for landfilling or incineration.. Even with improved design, perhaps from guides in the Eco design Directive, some plastic products will be very difficult to material recycle due to different forms of contaminations. For these, gasification to produce raw material to the chemical industry or a gas that could replace virgin fossil alternatives, is a good alternative. No Separation, Identification and Sorting (SIS) processes are 100 % correct, why small amounts of contamination will always be possible to detect, especially with new analytical tools with very low detection limit values. In a more Circular Economy, "Everything can be found Everywhere". It is now very important to educate everyone that even if

something unwanted is found it does not mean that it is a problem. Bio availability is much more important than content of contaminations when requirements of recycled plastics are set. Large scale recycling plants are needed for a more circular economy. In the image below you see the new recycling plant in Halmstad, Sweden where metals and plastics are recycled. Examples of new types of material recycling processes at this site will be presented.



Biography

Christer Forsgren has completed his Master in Chemical Engineering at Chalmers Technical University and studied for PhD at Örebro University. Since year 2011, Forsgren is Adjunct Professor in Industrial Material Recycling at Chalmers. He is the Technical and Environmental Director of Stena Recycling International, a premier recycling company in northern parts of EU. He has published more than 25 papers in reputed journals and has been serving as an board member in many recycling related organizations. More than 25 years of experience from management positions.

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