Title: Unlocking Circularity through Dissolution Technology

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Abstract:

In 2024, ReSolved Technologies made its debut at the Nova Institute Advanced Recycling Conference. ReSolved Technologies was founded in 2020 to develop a solvent-based recycling technology suitable for complex plastic waste streams for which no proper recycling solution exists today to support closed-loop recycling enabling true circularity.

Solvent-based recycling, known as a dissolution and purification physical recycling method, is a complementary recycling technique that is complementary to the existing mechanical and chemical recycling routes. To our opinion, it is extensional to current mechanical recycling and can realize the necessary quality jump that makes recovered plastics suitable for closed-loop recycling while being able to compete with virgin plastics both technically as well as economically.

In this presentation we will shortly elaborate on the positioning of dissolution technology amongst the other recycling technique and explain why it is the method of choice for certain plastics. We will demonstrate the quality jump which is possible through the ReSolved technology process and how it supports closed-loop recycling (recycling for the same application type from which the materials originate).

ReSolved Technologies is completing the construction of a new pilot plant in 2025 which becomes operational in Q4 of this year. Additionally we will share the status and the potential of this pilot plant including the roadmap to demonstration scale (TRL 7-8) and the first full commercial plant.

From last years ARC it became apparent that dissolution technology is one of the future recycling techniques to which the industry is requesting capacity for the near future. ReSolved Technologies will be one of the leaders in this field to contribute to this demand, where the primary focus is on engineering plastics.