

Recycling cascade for plastics waste

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Plastic recycling is generally associated with closed-loop recycling, i.e. recycling of one product to its equivalent. But a true circular carbochemical industry requires more than that. It requires a cascade of mechanical and chemical recycling technologies to valorize the largest possible fraction of spent carbon and minimize the need for virgin carbon. Such cascade should at least consist of mechanical recycling and gasification, the former to recycle the high quality waste at high yield and the latter to valorize the rest at modest yield. We argue that such cascade can boost recycling rates to 70%, beyond the <30% of closed loop-recycling and to levels that a level that matches those of steel, aluminum and paper.

Reference: J.-P. Lange, S.R.A. Kersten, S. De Meester, M. van Eijk, K. Ragaert; [ChemSusChem 2024, 17, e202301320](#)