

Penciptaan nilai kualitas sebagai dasar perancangan dan pengembangan sistem manufaktur terintegrasi daur ulang plastik berbasis wilayah = Quality value creation for integrated manufacturing systems design and development for plastic recycling within an administrative region

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Abstrak

ABSTRAK

Kualitas sampah kemasan plastik yang rendah menjadi kendala bagi kualitas hasil proses daur ulang mekanikal dan sebaliknya kapasitas produksi daur ulang menjadi pembatas saat bahan baku berlebih. Penciptaan nilai kualitas sampah plastik dengan paradigma perbaikan kualitas sampah diubah dengan paradigma konservasi nilai material melalui rancangan kemasan ramah daur ulang dan kepedulian pemangku kepentingan. Peningkatan jumlah bahan baku berkualitas tinggi diantisipasi dengan kehadiran sistem manufaktur terintegrasi berbasis wilayah dengan dukungan pemangku kepentingan dan komunitas. Skema pengembangan sistem manufaktur terintegrasi di sembilan kota di Jawa Barat berpotensi meningkatkan pemanfaatan sampah kemasan plastik kaku hingga tersisa hanya 6% di tahun 2025 dengan volume produksi 270 ton bijih plastik hasil daur ulang berkualitas tinggi setiap hari. Pengusahaan yang layak secara finansial dan ekonomi serta membantu pengurangan sampah plastik yang tidak terkelola ini memerlukan dukungan regulasi serta penerapannya secara konsisten dan berkelanjutan. Serangkaian rencana implementasi program dan jadwal pelaksanaannya diajukan dalam penelitian ini.

ABSTRACT

Low quality of plastic waste is a constraint of mechanical recycling product quality, while limitation of capacity is a counter-productive within a surplus of higher quality raw materials. Quality value creation with plastic waste quality improvement paradigm should be shifted to material value conservation paradigm through design for recycling of plastic packaging and awareness of its stakeholders. Surplus of higher quality of plastic waste anticipated with integrated manufacturing systems for a region and stakeholders as well as community awareness. A development scheme of this system for nine cities in West Java will increase rigid plastic waste utilization with only 6% unmanaged waste in 2025 and produce 270 metric tons/day of high quality recycled plastic pellets. Viability of business both in financial as well as economic measures and its role in unmanaged waste reduction need a proper regulation with a consistent and sustainable implementation. A set of program implementation plans as well as its time schedule proposed in this research.