

Recovery of valuable products from kerf slurry waste – case of photovoltaic industry

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ABSTRACT

Although solar cells manufacturing is a conservative industry, economics drivers continue to encourage innovation, feedstock savings and cost reduction. Kerf slurry waste is a complex product containing both valuable substances as well as contaminants. The valuable substances are: (i) high-purity silicon, (ii) polyethylene glycol, and (iii) silicon carbide. The contaminants mainly include metal fragments and organics. Therefore, recycling of the kerf slurry waste is an important subject not only from the treatment of waste but also from the recovery of valuable products. The present paper relates to processes for the recovery of valuable products from the kerf slurry waste in which they are contained, such products comprising nanoparticles, polyethylene glycol, high-purity silicon, and silicon carbide.

Keywords: Kerf slurry waste; High-purity silicon; Polyethylene glycol; Silicon carbide; Photovoltaic

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