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## RECOVERY OF VALUABLE MATERIALS FROM E-WASTE USING ORGANIC SOLVENT

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**P**rocessing and treatment of waste printed circuit boards (WPCBs) in electrical and electronic equipment (EEE) which is abided by valuable and hazardous materials is a big challenge, due to its complex and discrete make-up across manufacturers and therefore for the recycling of WPCBs and recovery of valuable materials, novel and improved processes are needed. In the present study, *N*-methyl-2-pyrrolidone (NMP) is used as a solvent for processing of WPCBs with respect to WPCB sizes, solid to liquid (S/L) ratio; temperature and time were investigated by dissolving bromine epoxy resin. Experimental results showed that the dissolution rate of the bromine epoxy resin increased with respect to various parameters studied. The optimum condition of thorough separation of WPCBs was S/L ratio of 1:5 and WPCB size/area of 4 mm/16 mm<sup>2</sup> and 100°C for 90 min. The used NMP was vaporised and condensed for retrieving regenerated NMP. NMP as solvent can be an effective option for the separation and recovery of various valuable materials such as metals, glass fibres, etc. from WPCBs.

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