

MULTI LAYER PACKAGING RECOVERY BY PLASMA**R.N. Szente¹, L. B. Souza¹, H. A. Pasquini², O. Freitas², M.O. Szente²**¹*Mechanical and Electrical Division, IPT, São Paulo, Brazil*²*TSL Environmental Corporation, São Paulo, Brazil*

A novel plasma process was developed for the treatment of material containing plastic films and aluminium foils, originated from different sources, such as the material produced when recycling beverage/food multi-layer packaging or carton (the packaging typically produced by TetraPak and other companies, all over the world, for food and beverage products), as well as the packaging for other food products that contain aluminum and plastic. A multi layer packaging consists normally of kraft paper (75%), polyethylene film (20%) and aluminum foil (5%). After separating the kraft paper (using a simple water dissolution process), the remaining materials, plastic and aluminum, needs to be recycled or treated. Nowadays the plastic/aluminum residues are being dumped in industrial landfills or burnt in incinerators or boilers, both solutions creating environmental problems, besides not recovering the valuable components of the residues. The developed new plasma process is very efficient for solving the environmental problem of those residues; in the developed plasma process, the aluminum initially present in those materials is completely recovered while a paraffinic compound is generated from the plastic components. The paraffinic compound has several industrial applications, specially for chemical industries. The new plasma process is clean and economically sound and profitable. Several important characteristics of the new plasma process are: a) clean process; b) recovery of valuable materials (aluminum and paraffin) from residues; c) continuous operation; d) energy efficient process; e) nil gas effluent.