

# A MONITORING METHOD FOR THE DEGREE OF CURING IN EPOXY ADHESIVES USING DIRECT CURRENT RESISTIVITY

**Janith G.I., Herath W.H.S., Weragoda V.S.C.\***

*Department of Materials Science and Engineering, University of Moratuwa, Sri Lanka*

*\*Email: sampathw@uom.lk*

Adhesive bonding is a widely used technique in material joining. Research focused on enhancing the properties of resin-based adhesive systems is critically important in manufacturing quality control. One specifically important aspect is the monitoring of cure progression of the adhesive. Commonly practiced cure monitoring methods such as Differential Scanning Calorimetry (DSC), Dielectric Analysis (DEA) and Dynamic Mechanical Analysis (DMA) are ideal for laboratory evaluations but not conducive for in-situ cure monitoring. In-situ cure monitoring techniques are vital as they provide better control over processing parameters. This study introduces a Direct Current Resistivity (DCR) based cure monitoring method. It is simple, cost-effective, reliable, and more importantly, industry friendly. The fast response of direct current measurements combined with the simplicity of the analysis makes this method suitable for real-time cure monitoring.

**Keywords:** Adhesive bonding, Epoxy adhesive, Cure monitoring