Epoxy resins are deployed extensively in electronic packaging of devices[1-3, 5,7]. Dielectrics with lower roughness will improve device performance as well as will offer smaller form factors for the final product (Figure). As shown in Figure, one can use much thinner dielectrics via reducing the interfacial dielectric roughness leading to devices with smaller form factors[9].

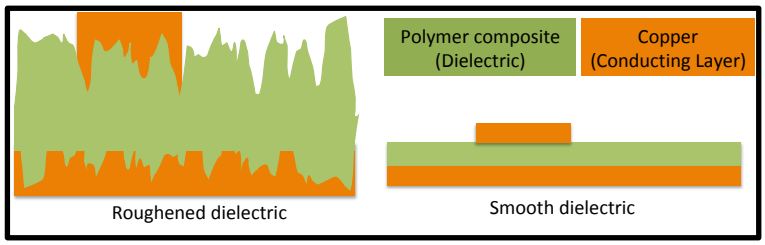

Figure: Feature dimensions and dielectric roughness.

Phase-separation in epoxy blends governs their final morphology and their roughness[1-3, 12-16]. Limitation though is to have understanding of designing controlled morphologies with epoxy blends for packaging of electronic devices. Considering the strict technical selection criteria for materials for semiconductor manufacturing, there are hardly a few experts in industry as well as academia for this segment. Georgia Tech, IMEC Belgium, A*STAR Singapore, IISc Bengaluru and FLEXE at IIT Kanpur are few leading experts from academia, while industry hardly has much competition when it comes to dielectrics for next generational cost effective packaging solutions. This has motivated myself, as a researcher from Polymer Science & Engineering and as an industry expert in the area of electronic packaging, to pursue research in this applied area.

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