

EIPBN Abstract

Wafer dicing by cleaving: A fast, clean, dry and accurate method

Abstract

It is often thought that cleaving can only be applied to crystalline materials such as silicon and GaAs and that it is an inherently dirty and imprecise process. We will show that dicing by cleaving can be applied to a wide variety of wafer substrates including silicon, sapphire, GaAs, GaN, InP, SiC, and glass with accuracy and repeatability. We will show examples and will provide an introduction to the tools utilized.

Automated dicing tools are great when used in production environments where large numbers of wafers are processed and the wafer and die dimensions are constant. During R&D and when only a small batch of die are required, it is beneficial to have clean, accurate, repeatable, and fast tool to dice wafers. Low cost and cost of ownership and ease of use are also key requirements during R&D.

LatticeGear designs, manufactures, and sells cleanroom compatible benchtop tools for cleaving a wide variety of substrates, both crystalline and amorphous, including silicon, GaAs, InP, sapphire, and glass. Based on wafer composition, size (dimensions and thickness), and crystal orientation LatticeGear can recommend tools and a process to dice wafers.