## Thin Film Semi Substrates
* Lithographic thin-film Construction
* Alumina substrates

Semiconductor circuitized substrates used in wafer probe systems

### LMJ used for:
* Singulation of ceramic circuits
* Hole-Drilling

### Dicing of high-density circuits on brittle material
Repeatable and High-Speed process to singulate substrates without damaging the adjacent circuitry

#### Main processing criteria:
* Tight Kerf
* Cleanliness of the cut
* Speed and repeatability

#### Machining technologies able to reach these criteria:
* Dicing Saw
* Laser MicroJet (LMJ) - water jet guided laser

## Challenge

### Higher quality, enables new applications, better ROI
LMJ advantages versus Dicing Saw:
* Speed
* Repeatability

Installed machine type:
* Multiple LDS 300M
* 100 W green laser

Sources: www.ultrasource.com, Synova