Micro- and nanoelectronic components are manufactured onto silicon semiconductor wafers, the diameter of which has increased from just a few millimeters to 300 mm. Manufacturers around the world are taking the next step toward increasing productivity – making 450 mm wafers, doubling the surface area available for components, significantly increasing yields and reducing manufacturing costs.

**LMJ used for:**
- Cutting of smaller diameters in a 450 mm Wafer
- Chamfer cutting

**450 mm wafers**

- LMJ advantages versus grinding:
  - Faster, higher yield
  - No mechanical stress
  - High flexibility in the shape
  - High stability
- Installed machine type:
  - 1 x LDS 450
  - 100 W green laser

**High flexibility**

- 450 mm wafers have to be downsized to 300- and 200-mm wafers, without any impact onto the material
- Main processing criteria:
  - Vertical cut edges
  - No reduction in strength
  - No chipping
  - No contamination
  - Low roughness
  - Possibility of edge chamfering
- Machining technologies able to reach these criteria:
  - Grinding
  - Laser MicroJet (LMJ) - water jet guided laser technology

**No HAZ, production-proven, better ROI**

- Installed machine type:
  - 1 x LDS 450
  - 100 W green laser