

CASE STUDY



ALTR Created Diamonds, India

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PRODUCT

Lab Grown Diamonds for Jewellery Industry

- Created by replicating favorable conditions for growing crystal carbon
- Diamond sliver, "seed", is placed in a reactor being then subjected to a process called Chemical Vapor Deposition. The ultimate result is a lab-grown rough diamond

LMJ used for:

- Slicing seeds out of a CVD crystal



CHALLENGE

Perfect thin and parallel cuts

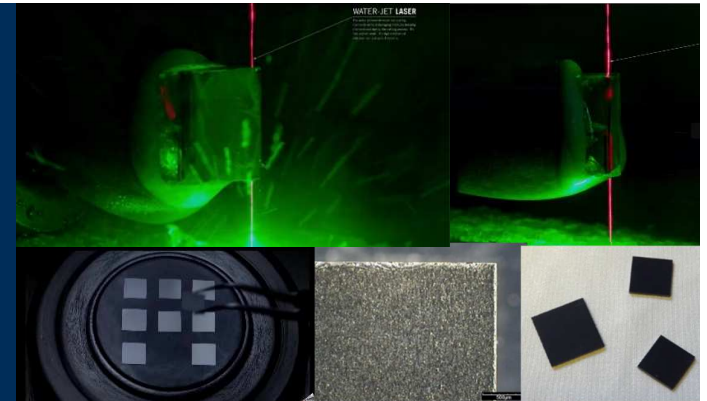
High Quality slicing process

Main processing criteria:

- Variable size range (5x5 up to 10x10 mm)
- Cut thin slices with thickness of 250 µm
- Smooth surfaces & low roughness that requires minimal post treatment
- Getting max. number of slices out of the CVD crystal
- Stable and repeatable process ready for mass production

Machining technologies able to reach these criteria:

- Dry laser
- Laser MicroJet (LMJ) - water jet guided laser technology



SOLUTION

Perfect parallel slices, production-proven process, higher yield

LMJ advantages versus dry laser:

- 2-3 x faster process
- Perfectly parallel and thin slices
- No V-profile in the slice
- Low roughness (Ra 0.3 µm)
- Higher yield (more slices per CVD crystal due to constant parallel kerf and no taper)

Installed machine type:

- 1 x DCS 50-3
- 100 W green laser



DCS 50-3

