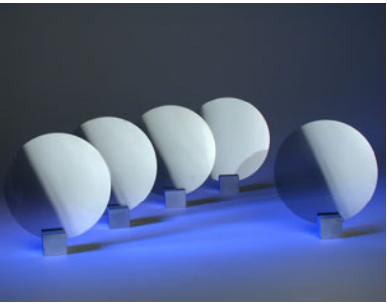


CVD-Diamond the engineers best friend

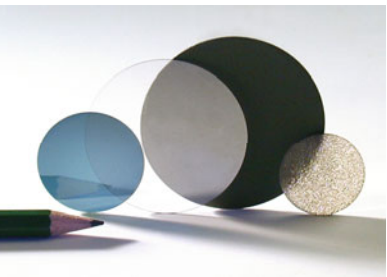
Diamond is in many respects an extraordinary material. Its legendary hardness, extremely high thermal conductivity and broadband optical transparency make it a high-tech material for highly demanding applications.



Diamond Materials GmbH was founded in 2004 as a spin-off from Fraunhofer Institute IAF. We have specialized in the manufacturing of polished free-standing disks consisting of pure diamond.



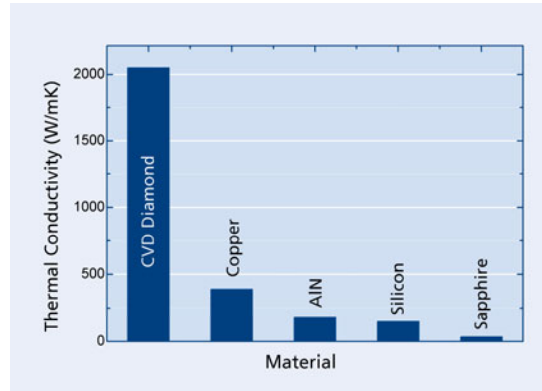
A proprietary microwave plasma technology is utilized allowing the deposition of high-grade polycrystalline diamond films and wafers on large areas.



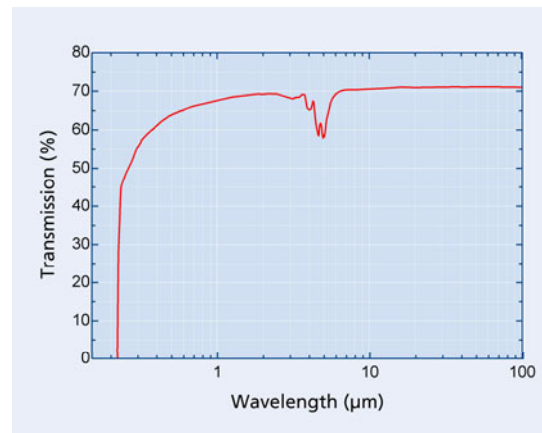
Diamond wafers with up to 6" diameter and thicknesses between 0.01 and 2 mm have been demonstrated. By varying the growth conditions the material properties can be tailored according to the needs of specific applications.

CVD-Diamond unique properties

The properties of our CVD diamond wafers approach those of perfect single crystal diamond. In particular they exhibit an extremely high thermal conductivity (five times that of copper).



In addition they exhibit a broadband optical transparency covering the UV, visible, infrared, terahertz and microwave spectral ranges.



CVD-Diamond applications

The main advantage of CVD diamond is its shape. While natural or HPHT diamonds are available only as small tiny crystals, CVD diamond can be synthesized in the shape of extended films or wafers.

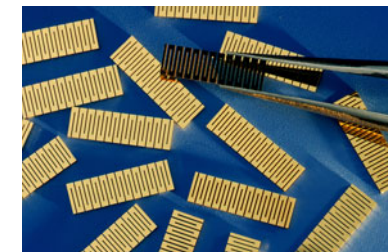
This opens up a bunch of new applications. In particular in optics CVD diamond has become an important material.

Optics

- CO₂-laser windows for high power levels
- Microwave windows for gyrotron tubes
- Lenses, membranes
- UHV windows
- X-ray windows
- Units for ATR spectroscopy

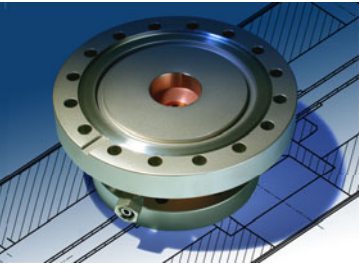


Thermal Management



- Heat spreaders
- Submounts for high-power disk lasers
- X-ray transmission anodes

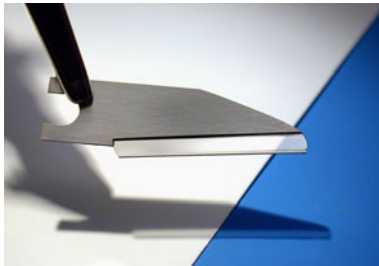
Accelerators / Synchrotrons



- Water-cooled X-ray windows
- Fluorescence beam monitors
- Broadband infrared transparent UHV windows

Mechanics / Tribology

- Wear-resistant components
- Water nozzles
- Cutting tools
- Ultra-sharp knives and scalpels



Miscellaneous products



- CVD diamond dials for wrist watches

- Tweeter membranes for high-performance loudspeakers



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