

**The CUNY Center for Advanced Technology In Photonics Applications (CUNY CAT)**  
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## Diamond and Diamond-Like Carbon Coatings

Diamond and diamond-like carbon films have superior properties for a wide range of coating applications in optical systems, as dielectrics in microelectronic devices, and where high hardness and wear resistance are critical.

Facilities are available for plasma-enhanced deposition of both crystalline diamond coatings and amorphous (disordered) diamond-like carbon films. Also in development is the deposition of boron nitride coatings, which have properties that are comparable or superior to those of diamond.

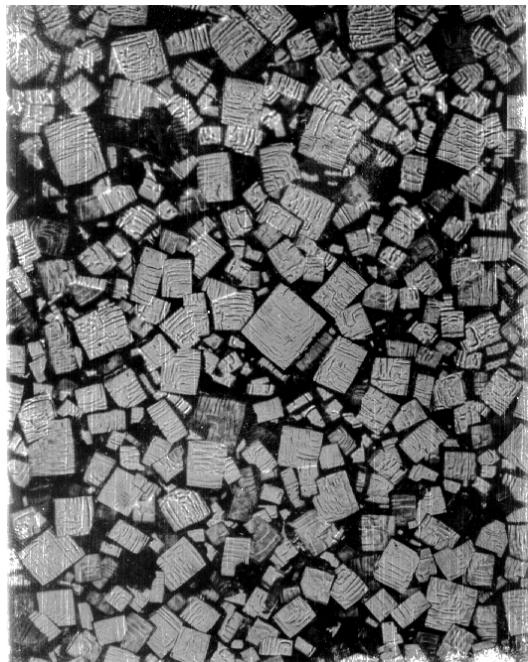
Characterization of the optical properties and microstructures of the coatings is available.

### Applications:

- Optical coatings
- Wear-resistant coatings
- Low-friction coatings
- Low dielectric constant films (microelectronics)
- X-ray windows

### Benefits:

- Hardest known coating material
- Highest thermal conductivity at room temperature
- High wear resistance
- Environmentally stable
- Optically transparent from ultraviolet to infrared



*CVD-grown diamond film*

This technology opportunity sheet describes continuing efforts in this area. Several patents may have been issued or are pending and which may be available for licensing.

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