



Contribution ID: 8

Type: **not specified**

## CVD Diamond Detectors for Fast VUV and SX-Ray Tomography (part2)

The excellent photon detection properties of Chemical Vapour Deposition (CVD) single crystal diamonds proved them highly suitable for Vacuum Ultra-Violet and Soft X-ray radiation in-vessel diagnostics of magnetically confined plasmas in a variety of applications [1]. Their radiation and temperature hardness, small size, and high-vacuum compatibility can be exploited for core and divertor tomography/bolometry for energies from 5.5 eV up to 30 keV; their fast response (in the ns range) can be applied to monitor fast plasma events, such as ELMs, MHD instabilities, ablation of pellets. The high-quality CVD diamond detectors developed and grown at “Tor Vergata” University in Rome have long been in use at JET and were more recently tested on FTU. Their deployment on DTT is under design, and their application on ITER can also be proposed.

[1] F. Bombarda et al., 2021 Nucl. Fusion in press <https://doi.org/10.1088/1741-4326/ac233a>

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