

CVD diamond materials for high tech applications: Recent achievements and remaining challenges

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Diamond is an outstanding material that often exhibits unmatched properties compared to other materials. Decades of research have enabled the (but not yet fully) growth understanding and coating of diamond in film form on various substrate materials. Plasma-Enhanced Chemical Vapor Deposition (PECVD) technique used to growth high quality diamond has been continuously improved over the years and allows today to address a wide range

of applications based on the combination of unique and extreme properties of diamond and the variety of film properties obtainable through tuning the microstructure, morphology, impurities, and surfaces. This work introduces the latest research, recent applications, and the challenges ahead for CVD diamond films.

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