Contribution submission to the conference Regensburg 2013

Loss reduction of dielectrics: CVD diamond — Theo Scherer — Karlsruhe Institut of Technology KIT; Hermann-von-Helmholtz-Platz 1; D-76344 Eggenstein-Leopoldshafen

The high-power long pulse RF loss properties of CVD diamond materials for ECR heating and plasma stabilization in large fusion devices have been measured by established Fabry-Perot methods. The dielectric loss is strongly influenced by the surface chemistry of the diamond. Special surface passivation techniques are investigated due to the reduction of the electrical surface conductivity and therefore of the RF losses.

Part: DF
Type: Vortrag; Talk
Topic: Dielektrische Bauelemente und Anwendungen / Applications of dielectric solids
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