

**[PP-01]**

## **Growth of Highly Oriented Diamond Films by Microwave Plasma Chemical Vapor Deposition**

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Highly oriented diamond (HOD) films in polycrystalline can be grown on the (100) silicon substrate by microwave plasma CVD using CH<sub>4</sub>-H<sub>2</sub> and CO-H<sub>2</sub> gas mixture in this study. Deposition condition of the films is studied for HOD films. Thermal conductivity measurement is very important to characterize film properties that affected by interface structure, grain size, grain boundary and crystal orientation. An ac thermal conductivity measurement technique, the 3 $\omega$  method<sup>(1,2)</sup> is insensitive to errors from black-body radiation, was adopted to characterize thermal properties of diamond films in this study. Feasible results for fused silica and sapphire (100) were obtained from thermal conductivity measurement using 3 $\omega$  method. The comparison of measured results with known values of the fused silica, sapphire and diamond films will be made.

### [참고문헌]

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