



Tetsuya Suzuki

Keio University, Japan

Hard carbon and SiO: CH films synthesized under atmospheric pressure


In this study, we synthesized a-C:H films by filamentary dielectric barrier discharge (FDBD) to improve their characteristics compared to the films synthesized by atmospheric pressure plasma-enhanced chemical vapor deposition. The discharge type was transited from glow DBD (GDBD) to FDBD by increasing the gap between the electrodes from 1 mm to 4 mm. The hydrogen concentration of the a-C:H films synthesized by FDBD was reduced compared to that of the films synthesized by GDBD. The hardness of the films is increased from 3.7 GPa to

11.9 GPa by using FDBD. These results show that the hard a-C:H films can be synthesized at low temperature in a large area by FDBD.

Speaker Biography

In 1985, Dr. Tetsuya Suzuki is graduated from Inorganic Materials department of Tokyo Institute of Technology and in 1990; he did his Ph.D from Nuclear Engineering Department of same Institute. Currently he is working as a director at Keio Leading-Edge Laboratory, Japan.

e: tsuzuki@mech.keio.ac.jp

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