Abstract Submitted
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Infrared spectroscopic study on oxidation of carbon for environmental solution[1] TAKA-AKI KAWAKAMI, MASANORI SHINOHARA, KOJIRO HARA, Graduate School of Sci. and Technol., Nagasaki Univ., YOSHINOBU MATSUDA, Dep. od EEE, Nagasaki Univ., HIROSHI FUJIYAMA, Graduate School of Sci. and Technol., Nagasaki Univ., YUKI NITTA, TATSUYUKI NAKATANI, TOYO a-tec — Environments have been in crisis for a long time after industrial revolution. One of the serious environmental problems is air pollution due to carbon particles generated in Diesel engines. The number of Diesel engine is increasing all around the world. The effective pyrolysis or detoxifying of carbon particle is required. One of the most effective methods is its oxidation. Plasma can realize at low temperature process. Understanding the detailed oxidation process leads to the developments of the effective pyrolysis method. Then, we investigate the oxidation process to find effective oxidation method. We prepare the several types of amorphous carbon films. The films were oxidized with oxygen molecules, oxygen radicals, and oxygen ions. The process was monitored with infrared spectroscopy in multiple internal reflection geometry (MIR-IRAS). To effectively insert oxygen into C-C bonds, the oxygen ions were required.

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Masanori Shinohara
Graduate School of Sci. and Technol., Nagasaki Univ.

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