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**Investigation of deposited material in an atmospheric pressure DC corona discharge in artificial air containing a trace of benzene, toluene or xylene** SEIJI SAKAI, KOHKI SATOH, HIDENORI ITOH, Graduate School of Engineering, Muroran Institute of Technology — A trace of benzene, toluene or xylene, which is contained in artificial air, is decomposed using an atmospheric pressure DC corona discharge, and the characteristics of deposited material during the decomposition are analyzed by infrared absorption spectroscopy. The absorptions of substituted benzene, O=C-O, C=O and C-H groups are found in the transmittance spectra, and there is no significant difference in the absorption of the substituted benzene regardless of the kinds of gases. However, the absorptions of O=C-O, C=O and C-H groups increase in toluene and xylene decomposition. Further, the decomposition rates of toluene and xylene are higher than that of benzene, therefore, it is probable that the aromatic ring of toluene and xylene is easily cleaved by the discharge as compared with benzene, and that the cleaved fragments contribute to the deposition of O=C-O, C=O and C-H groups.

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