

Abstract Submitted
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Emission characteristics on light source array using micro hollow cathode plasma TAKAYUKI OHTA, NAOKI TAKOTA, YOSHIHIRO TACHIBANA, MASAFUMI ITO, Wakayama University, YASUHIRO HIGASHIJIMA, NU System Co., Ltd., HIROYUKI KANO, NU EcoEngineering Co., Ltd., SHOJI DEN, Katagiri Engineering Co., Ltd., MASARU HORI, Nagoya University — We have developed a light source array for an absorption spectroscopy using micro hollow cathode plasma. The light source is capable of emitting multi-lines of metallic atoms for measuring absolute densities of metallic atoms simultaneously in sputtering, MBE, CVD processes, and so on. In this study, the emission characteristics of the light source were investigated. Emission intensities of metallic atoms and the rotational temperatures of the N_2 second positive system were measured as functions of cathode length or cathode diameter. The emission intensity of Cu atom increased with a decrease in the cathode length from 20mm to 3mm. The applied voltage was 400 V, the pressure was 0.01 MPa, and the current was 40 mA. The current density which was applied to the Cu pipe cathode becomes larger in the shorter pipe length, so that the emission intensity became larger. The N_2 rotational temperature was used for evaluating the neutral gas temperature and was evaluated to be from 510 to 750 K.

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