Abstract Submitted
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Diagnostics of RF magnetron sputtering plasma for synthesizing transparent conductive Indium-Zinc-Oxide film[1] TAKAYUKI OHTA, MARI INOUE, NAOKI TAKOTA, Wakayama University, MASAFUMI ITO, Meijo University, YASUHIRO HIGASHIJIMA, NU System Co., Ltd., HIROYUKI KANO, NU EcoEngineering Co., Ltd., SHOJI DEN, KOJI YAMAKAWA, Katagiri Engineering Co., Ltd., MASARU HORI, Nagoya University — Transparent conductive Oxide film has been used as transparent conducting electrodes of optoelectronic devices such as flat panel display, solar cells, and so on. Indium-Zinc-Oxide (IZO) has been investigated as one of promising alternatives Indium Tin Oxide film, due to amorphous, no nodule and so on. In order to control a sputtering process with highly precise, RF magnetron sputtering plasma using IZO composite target was diagnosed by absorption and emission spectroscopy. We have developed a multi-micro hollow cathode lamp which can emit simultaneous multi-atomic lines for monitoring Zn and In densities simultaneously. Zn and In densities were measured to be 10^9 from 10^{10} cm^{-3} at RF power from 40 to 100 W, pressure of 5Pa, and Ar flow rate of 300 sccm. The emission intensities of Zn, In, InO, and Ar were also observed.

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