

13TH INTERNATIONAL CONFERENCE ON

ADVANCED MATERIALS AND NANOTECHNOLOGY

OCTOBER 26-28, 2017 OSAKA, JAPAN

Improvement of metallic nanostructure fabrication using electrochemical migration**Shintaro Fukaya, T Aoki, Y Kimura and M Saka**
Tohoku University, Japan

The metallic nanostructure has the physical properties as remarkable increase in surface-to-volume ratio and the development of nanostructure fabrication has revolutionized many applications ranging from electronics to photonics, information storage and sensing, as well as energy conversion and storage. Electrochemical Migration (ECM) is known as a cause of insulation deterioration on the printed circuit board in high-humid and high temperature environment. Although a considerable number of studies have been reported on suppressing ECM, utilization using ECM has not really been studied so far. The previous studies of suppressing reveal that eluting metal grows as dendrites. Recent years, the concern with utilization using ECM has been growing because ECM is the low cost and green fabrication technique and the reaction is caused by DC voltage and water. The attempt has been made at fabricating the metallic nanostructure using ECM. However, it has reported that ECM stops during growth of dendrites between electrodes because dendrites form short circuit. Thus, the sustainable and large-scale fabrication for the metallic nanostructure has not been established. The purpose of this study is to demonstrate sustainable and large-scale fabrication for the metallic nanostructure using ECM. In this study, we changed experimental conditions and evaluated these results.

Biography

Shintaro Fukaya has received his Bachelor of Engineering degree in 2017 from Tohoku University, Japan. He is currently a graduate student in Saka-Laboratory of Tohoku University.

fukaya@ism.mech.tohoku.ac.jp

Notes: