

INSD NanoScience Seminar (No.1)

Title: **“Fabrication and study of properties of porous amorphous SiC”**

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Date and Time: November 29th, 14:45-15:45

Lecture Room: Graduate School of Engineering Science, Building G,
Room G217

Abstract:

The report presents the development of electrochemical etching methods that our group has carried out to produce a porous SiC layer on the thin film of amorphous (non-doped and doped) SiC so that this porous layer will have the best photoluminescence properties. In these etching methods the electrolyte used was always an aqueous solutions of HF, although there were 3 developments as follows: i) adding the Triton X100 surfactant to the electrolyte solution, ii) adding the H₂O₂ oxidant to the electrolyte solution and iii) using an HF solution with extremely low HF concentrations. Especially, when using the last solution with appropriate HF concentration and appropriate anodic conditions, the photoluminescence intensity increased hundreds of times. In this report we will also give some ideas to discuss the cause of photoluminescence in porous SiC.

Reference: Prof. T. Itoh, Institute for NanoScience Design, E-mail: itoh@insd.osaka-u.ac.jp