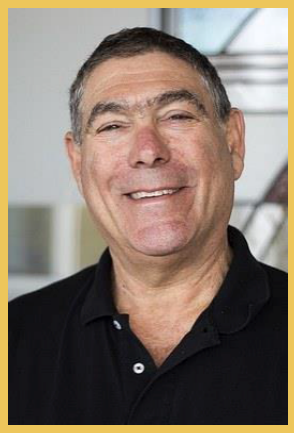
The 35th JUACEP Seminar

第 35 回 名古屋大学日米協働教育プログラムセミナー

Date: May 12 (Thu), 2016 14:45-16:15

Venue: Lecture Room 232 (Eng.Bldg-2)



Lecturer: Prof. Richard M. Laine

Department of Materials Science and Engineering, University of Michigan

Escaping the Tyranny of Carbothermal Reduction. Conversion of Biowaste Silica to Alkoxysilanes without Using Silicon

Agricultural byproducts used as alternate energy sources generate considerable waste. Harvested rice is milled producing rice hulls that are often burned to generate electricity also producing rice hull ash (RHA). In the U.S. some 100k tons of RHA are produced annually. RHA consists of 70-90 wt % low impurity, high surface area (20-80 m^2/g) amorphous, porous silica mixed with low impurity, amorphous carbon.
The rice plant does not extract heavy metals from the ground and as such the resulting RHA is relatively pure. Furthermore, it is very easily purified using simple acid extraction to remove small amounts of phosphates and other minor minerals. In this presentation we describe methods of directly depolymerizing RHA SiO_2 to transform it into distillable alkoxysilanes.

略歴： 1969 年カリフォルニア州立大学化学部卒。1973 年南カリフォルニア大学博士号（化学）取得。デラウェア大、UC サンタバーバラ、スタンフォード国際研究所研究員を経て 1987 年ワシントンテクノロジーセンター研究員、1990 年からミシガン大学物質化学工学部教員。1999 年同大教授、Mayaterials 創設者兼 CEO、高分子化学工学センター統括者、EXIMO ハードコーティング社共同創設者。

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