第 12 回山梨エレクトロセラミックスセミナー

日　　時：2011 年 11 月 14 日（月）13:00ー14:30

場　　所：情報メディア館 4 階 会議室　※場所が普段と異なります。

いつもお世話になっております。山梨大での研究活動の一環として、国内外の電子セラミックスの分野で活躍されている研究者の方々にその成果を発表していただく場として、新たに「山梨エレクトロセラミックスセミナー」を設立しました。その第 12 回として、以下の講演を行います。ぜひ、ご参加いただき、今後ともこの活動にご協力いただければ幸いです。

講　　師：　Dr. Ming-Jen Pan

(米国海軍研究所　多機能材料部門　セラミックスラピッドプロトタイプセクション長)

講演題目：「Recent Research on Advanced Ceramics for Energy Applications at the Naval Research Laboratory」

概要：The Naval Research Laboratory (NRL) has been developing advanced dielectrics and structural ceramics to provide viable solutions for energy and power needs of the US Navy. This presentation first will give an overview of NRL and the breadth of NRL research, followed by the materials development work at the Ceramics Section. Using a systematic approach to modify the composition, microstructure, macrostructure, and processing procedures, we have worked on a variety of ceramics in the last several years. This talk will cover two topics: freeze casting and complex ceramic structures. In the freeze casting technique, we fabricate ceramic-polymer composites with high dielectric constant by growing ice lamellae in a freezing apparatus to align the constituent phases in an (electrically) parallel configuration. By doing so, the dielectric constant of the composites can be two orders of magnitude higher than that of conventional (random mixture) composites. The second topic addresses a new effort on using a “fugitive phase” approach to fabricate topologically complex ceramic recuperator for a microturbine cost-effectively. The fugitive phase is integrated with ceramic tape during green processing and later removed during firing to achieve the desired structure with tortuous air/exhaust conduits. The optimization of the process is being conducted using complementary experiments and computer simulation.

問合せ先：和田　智志，Phone: 055-220-8555，e-mail: swada@yamanashi.ac.jp