

## 第 37 回 グリーンマテリアル成形加工研究センターについて –37th Green MAP Seminar–

第 37 回 グリーンマテリアル成形加工研究センターの講演会を次世代自動車用プラスチック素材加工研究センター,有機材料システム研究機構で開催します。Texas A&M University の Prof. H-J. Sue の講演会を下記のとおり開催いたしますので、お誘い合わせのうえご出席下さいますようご案内申し上げます。

**Date and Time** : Thursday, Feb. 23, 15:00 - 16:30

**Place** : 4F-406 Seminar Room, GMAP Center

### **Fundamental Scratch Behavior in Polymers**

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Polymer Technology Center

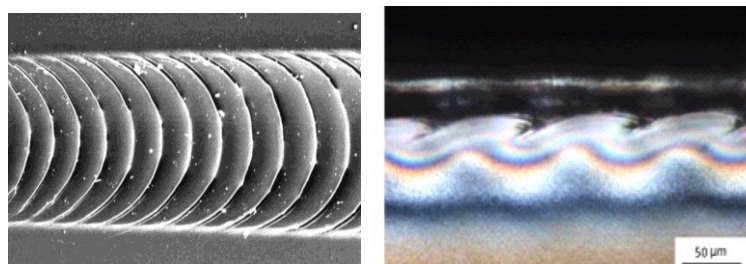
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#### **Abstract**

Significant research on scratch behavior of bulk polymers, films, and coatings has been carried out through the Texas A&M University Polymer Scratch Behavior Consortium and contracted research to address the ever-increasing needs on aesthetics, structural integrity, and protective functionality of polymer surfaces for many engineering applications. Since scratch performance is now recognized as an important engineering property for polymers, it becomes highly desirable to establish quantitative correlation between material parameters and scratch resistance. A new test methodology based on materials science and mechanics tools for evaluating scratch resistance of polymers has been developed at our laboratory and subsequently recognized as a new ASTM/ISO standard (D7027/ISO19252). This new test method allows for simple, unambiguous quantitative evaluation and ranking of scratch resistance of polymeric materials, coatings, and films. Finite element methods (FEM) simulation has also been performed to facilitate correlation between material parameters and surface damage observed during the scratch process, and to predict scratch performance. An up-to-date fundamental understanding of scratch behavior of polymers will be presented.



**Scratch Damage of TPOs: Left: top view; Right: longitudinal view**

#### **BIOGRAPHY OF THE SPEAKER**

Dr. H.-J. Sue is a Full Professor and teaches at the Department of Materials Science and Engineering, Texas A&M University (TAMU) since 1995. Before joining TAMU, Dr. Sue was employed by Dow Chemical at Freeport, TX, for about seven years. He has focused most of his research work on fundamental understanding of structure-property relationship of polymeric materials. His recent research interests include micro- and nano-scratch behavior of polymers and preparation of nanomaterials for nanotechnology applications. Dr. Sue is currently the Director of the Polymer Technology Center at TAMU.

主催：山形大学有機材料システム研究機構

山形大学グリーンマテリアル成形加工研究センター& 次世代自動車用プラスチック素材加工研究拠点

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