On Demand available October 25-November 30, 2021

Advanced Surface Engineering Division
Room On Demand - Session SE-Invited On Demand

Advanced Surface Engineering Invited On Demand Session

SE-Invited On Demand-1 Metallic Glass: A Novel and Emerging Coating For Various Industrial Applications, *P. Yiu,* ***Jinn P. Chu,*** National Taiwan University of Science and Technology, Taiwan **INVITED**

In this presentation, I will first present many unique properties that make thin-film metallic glasses (TFMGs) stand out from other thin film materials: smooth surface, ultra-low coefficient of friction, low surface free energy, non-sticking surface, high plasticity, anti-cell adhesion properties, biocompatibility, and shape recovery. I will also demonstrate a number of applications where TFMGs have outstanding performance over the existing materials, such as surgical blades and various types of diffusion barriers that boosted the lifetime of their corresponding device. We also showcase a number of innovative attempts to put TFMG in commercial products and industrial applications.Furthermore, we would like to showcase that due to the variety of composition and thus properties of TFMGs, they have a wide range of applications from consumer products like kitchen cutlery to the cutting edge MEMS, to be explored. The ease of TFMG fabrication by magnetron sputtering is also favorable for industries and manufacturers to transfer the technologies from laboratory to factory. Our research and development of TFMG is still ongoing and making a remarkable progress and hopefully it could open up even more new research works in the near future. In addition, new perspectives in the research and development of TFMGs and opportunities for commercialization will also be highlighted.

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