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**Development of Bulk Metallic Glasses and Metallic Glass Thin Film Coatings for Biomedical Applications**

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A series of Zr-based, CuZr-based, Mg-based, Ti-based, and Fe-based bulk metallic glasses (BMGs, with good glass forming ability) and bulk metallic glass composites (BMGCs, with high plasticity and toughness) have been successfully developed in the High Performance Alloy Laboratory, Institute of Materials Science and Engineering, National Central University. In addition, these BMGs and BMGCs also have been developed to apply on the medical tools and devices, including the surgical blade, dermatome, orthopedic drill, anti-bacterial coating, and porous implant. Since these BMGs and BMGCs possess high strength, high hardness, large elastic limit, excellent corrosion resistance, and superplastic forming ability. Therefore, these BMGs and BMGCs present much better performance than the commercial martensitic stainless steel and are believed to be a promising material for biomedical applications.

**Experience:**

Materials Research Laboratories, ITRI, Scientist (1990/6-1992/6)

Materials Research Laboratories, ITRI, Scientist & Research Manager (1992/7-1996/7)

Department of Materials Science and Engineering, I-Shou University, Associate Professor (1996/8-2002/7), Professor (2002/8-2004/7), Professor and Chairman (2004/8-2009/7)

Department of Mechanical Engineering, National Central University, Professor (2009/8-2011/7)

Graduate Institute of Materials Science and Engineering, National Central University, Professor (2011/8-2012/7)

Graduate Institute of Materials Science and Engineering, National Central University, Distinguished Professor and Chairman (2012/8-2015/7)

Department of Mechanical Engineering, University of California at Los Angeles, USA, Visiting Scholar (2016/8-2017/1)

Graduate Institute of Materials Science and Engineering, National Central University, Distinguished Professor (2015/8-present)

Precision Instrument Utilization Center, National Central University, Director (2013/8-present)