CHiMaD | Center for Hierarchical Materials Design

SPECIAL SEMINAR

ARCHITECTURED STEELS

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ABSTRACT As a novel route to achieving higher-performance steels, architectured multilayer steel has been investigated by combining high-strength steel and high-ductility steel in layer structure. Controls of layer geometry, microstructure of the layers and interfacial strength between the layers are key factors of the design of this architecture steel. Well-designed multilayer steels exhibit improved combinations of strength and ductility over existing monolithic steels, and excellent deformation behaviors under high-strain-rate deformation and good formability for automotive applications. The concept of multilayer steels has been confirmed by different combinations of steels and extended to combinations with non-ferrous alloys, such as Mg-steel multilayer composite.