

Structural Materials of the Future

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Just like we use steels and aluminum, titanium, and nickel alloys today, our grandchildren are likely to use bulk metallic glasses (BMGs), shape memory alloys (SMAs), nanocomposites (among the many new and exciting materials that are being developed in laboratories now) in their time. These materials, being completely different in their constitutive response from those of conventional metals and alloys, require through understanding of their mechanical behavior first. In this presentation, by taking examples from the research in my lab, I shall describe where we stand in our current understanding of the mechanical properties of these materials and highlight some of the outstanding scientific issues.