

Symposium G

Bulk and graded nanometals

In the recent years, bulk and graded nanometals have attracted growing interest of materials scientists. Nanometals were obtained by various methods: gas condensation or ball milling with subsequent consolidation, various thermal spray techniques, annealing of thin amorphous ribbons, severe plastic deformation. The plastic deformation methods include severe torsion straining under high pressure, equal channel angular pressing, cyclic extrusion compression and others.

The increasing practical applications of the nanostructured metals or metals with nanostructured coatings make it even more important to conduct basic research in that field, including characterisation, mechanism of transformations of the microstructure, and modelling studies, with particular attention to the mechanism of deformation. A multiscale analysis is needed of those properties which depend on the homogeneity of microstructure, surface characteristics and in particular geometry and properties of grain boundaries.

The aim of the symposium was to provide a review of modern methods for obtaining bulk and graded nanometals and to control their microstructure and physical properties, with particular attention to mechanical properties.

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