



Seminar

Structural origin of inhomogeneous deformation in bulk metallic glasses



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Time: 10:00am, June 17, 2013(Monday)

时间: 2013年6月17日 (周一) 上午10:00

Venue: Conference Room 607, Science Building 5

地点: 理科五号楼607会议室

Abstract

Bulk metallic glasses have extraordinary mechanical properties. While much of current research has been directed towards understanding the plasticity, or the lack of, in these materials, until recently surprisingly little was known about the deformation even in the elastic regime. There is now strong evidence that deformation in bulk metallic glasses is fundamentally inhomogeneous, or length scale dependent. Structure analysis, by in-situ neutron and synchrotron diffraction, showed that elastic deformation in bulk metallic glasses was carried out mostly by the medium-range order, while the short-range order hardly changed. We will show how these experimental results explain another recent observation, which we called moduli inheritance, in which the bulk metallic glasses seemingly derived their Young's modulus and shear modulus from the solvent components.

About the Speaker

1985	CUSPEA	Iowa State
University		
Argonne National Laboratory	1992	Oak
Ridge National Laboratory		1999
	Spallation Neutron Source, SNS	2005
		SNS
VULCAN	1600	"
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2008	2010	APS
Fellow	2012 8	
2011-2013	(TMS)	
		Science, Nature Materials, Physical Review Letters,
Advanced Materials		
	J-PARC	OPAL
Los Alamos	J-PARC	
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