

Nanostructured Steels			
	Organiser	Institution	Contact
	H.K.D.H. Bhadeshia	University of Cambridge UK	hkdb@cam.ac.uk
	F.G. Caballero	CENIM-CSIC Madrid Spain	fgc@cenim.csic.es
B1.I	Summary		
	<p>Steel is frequently the gold-standard against which emerging structural materials are compared. What is often not realized is that this is a moving standard, with notoriously regular and exciting discoveries being made in the context of iron and its alloys. Currently, there is a growing awareness about the potential benefits of nanotechnology in the modern steel industry, and a number of leading research and development institutes and companies are pursuing research in the area of nanostructured steels. In steels, fine grain size means 110 nm, and until recently effective processing techniques to reduce the grain size of these materials to less than 100 nm do not exist. Although mechanical milling and alloying can process the powders containing nanosized grains, grain growth cannot be suppressed during consolidation processes such as sintering and hot pressing. Therefore, processing bulk nanocrystalline materials for structural applications still poses a big challenge, particularly in using an industrially viable process.</p>		