

	Project Title	Applicant
423	The quick-screening for chemical contaminants/ mycotoxin-produced fungi in aquatic products/ farm products/ flavorings and the safety evaluations for harmful substances in foods	Zhang Lishi
424	Regulation of allergen induced toll-like receptor expression and cytokine release from mast cells by interferon-lambda	He Shaoheng
425	The effects and mechanisms MRP8/MRP14 on antigen presenting cells and T cells	Jiang Yong
426	Mechanism for TLR2 or TLR4 differentially regulating the development of tissue fibrosis	Hu Zhuowei
427	The molecular mechanism of citrullinated antigen in pathogenesis of rheumatoid arthritis	Li Zhan'guo
428	New mechanism of activated antigen presenting cell from the site of inflammation in rheumatoid arthritis promote Th17 responses	Zhu Ping
429	Specific inhibition of Dyrk1A prevents the formation of pathogenic tau in Alzheimer's disease brain	Liu Fei
430	Kir6.1/K-ATP channel; a new neuro-protective target for Parkinson's disease	Hu Gang
431	The effect of histamine and its receptors on astrocytes function and glial scar formation after cerebral ischemia and the involved mechanism	Chen Zhong
432	Neuroprotective mechanisms of Parkinson's disease and novel pharmaceutical targets research	Wang Xiaomin
433	Research of Etiology and Pathogenesis of Coronary Heart Disease from Blood-stasis to Toxin	Shi Dazhuo
434	Identification of the Molecular Signature Contributing to the Susceptibility of Phlegmatic Hygro-sis Constitution to Metabolic Syndrome	Wang Qi
435	Study on mechanism of compatibility of two Zhimu herb-pairs based on analysis in vivo	Huang Chenggang
436	Basic research on composition law of herbal pair of herba ephedrae species	Luo Jiabo

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• Research Results •

Long-Range Topological Order in Metallic Glass

In June 17th issue of *Science*, Professor Jiang Jianzhong of Department of Material Sciences, Zhejiang University and his colleagues published a paper titled "Long-Range Topological Order in Metallic Glass". Prof. Jiang has received sustained support from NSFC since 2003.

This article was co-authored by an international group of 9 researchers.

According to the article, glass lacks the long-range periodic order that characterizes a crystal. In the Ce₇₅Al₂₅ metallic glass (MG), however, they discovered a long-range topological order corresponding to a single crystal of indefinite length. Structural examinations confirm that the MG is truly amorphous, isotropic, and unstrained, yet under 25 gigapascals hydrostatic pressures, every segment of a centimeter-length MG ribbon devitrifies independently into a face-centered cubic (fcc) crystal with the identical orientation. By using molecular dynamics simulations and synchrotron x-ray techniques, they elucidated that the mismatch between the large Ce and small Al atoms frustrates the crystallization and causes amorphization, but a long-range fcc topological order still exists. Pressure induces electronic transition in Ce, which eliminates the mismatch and manifests the topological order by the formation of a single crystal.