

Unique, ordered nanometer structures found

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Israeli researchers Thursday reported discovering nanometer-scale ordered structures -- a discovery that could change basic scientific understandings.

The structures were found at the boundary between droplets of liquid aluminum and the solid face of sapphire. The detailed view provides direct evidence the sapphire's crystal structure induces the liquid aluminum atoms to line up in an orderly fashion, which is not normally characteristic of liquids.

"Basically, this means we need to think about liquid-solid interfaces in a totally different way," said Professor Wayne Kaplan of the Technion-Israel Institute of Technology, who co-authored the study with Technion doctoral student Yaron Kauffmann and colleagues from the Max Planck Institute in Germany. The researchers used a special high-resolution transmission electron microscope in making the discovery.

The Technion-Israel Institute of Technology is Israel's leading science and technology university.

The researchers' findings were published online Thursday by the journal Science at the Science Express Web site.

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