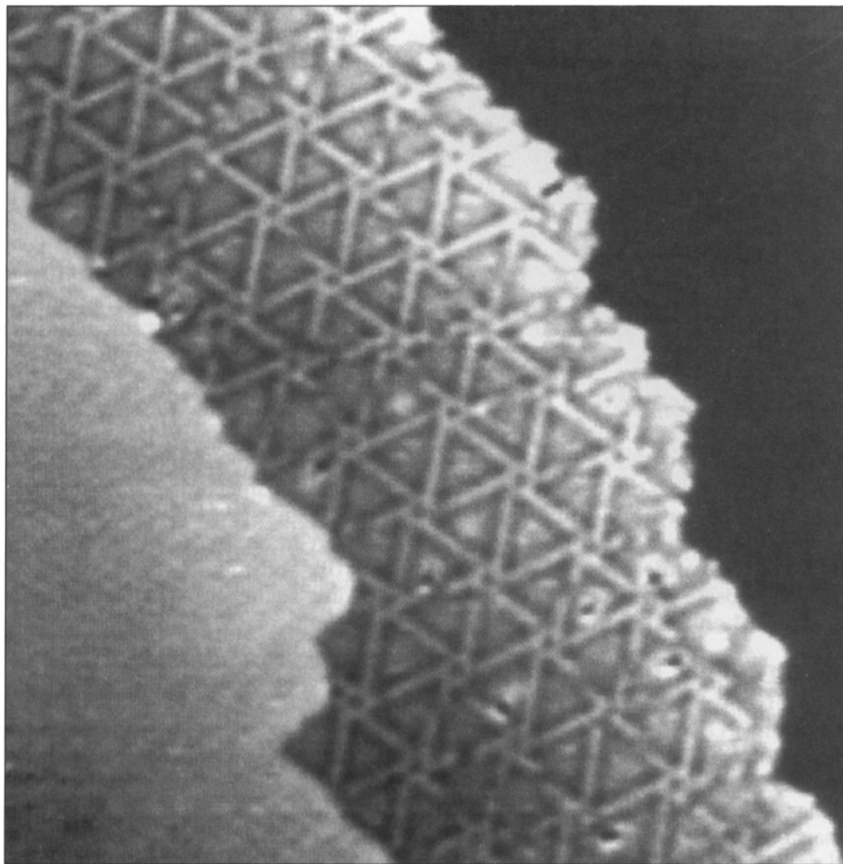


Figures appearing in EDITOR'S CHOICE are those arising from materials research which strike the editor's fancy as being aesthetically appealing and eye-catching. No further criteria are applied and none should be assumed. When taken out of context, such figures often evoke images beyond and unrelated to the original meaning. Submissions of candidate figures are welcome and should include a complete source citation, a photocopy of the report in which it appears (or will appear), and a reproduction-quality original drawing or photograph of the figure in question.



Of course, the obvious hexagonal patterns are the first things that leap off the page in this month's EDITOR'S CHOICE. A closer examination reveals that they should really roll off the page instead. The spokes of the patterns approach the hubs tangentially rather than radially giving the impression of wagon wheels in motion, at least if viewed stroboscopically. This pattern is a consequence of a reconstruction (a post-Civil-War period in U.S. history when wagon wheels were more prevalent than today). After an 800-Kelvin 30-minute anneal of monolayer amounts of chromium on a (111) surface of platinum metal, one finds stripes of these patterns decorating step edges like treadmarks of a passing tire. They are "seen" with a scanning tunneling microscope, so these are atomic-scale vehicles. L.P. Zhang, J. van Ek, and U. Diebold of Tulane University (*Phys. Rev. B* 57 [1998] R4285) suppose that this structure of relatively large period (17.3 Ångstroms) is actually an array of 10-atom chromium triangles sitting atop 15-atom platinum triangles which themselves are confined like racked billiard balls by a network of 1-atom-wide rows of platinum bridging atoms that converge tangentially on a hexagonal platinum hub. Apparently, with these bridging atoms in place, the atom density of the top reconstructed layer of platinum is 31% greater than underlying layers and conspires near the step edges where this reconstruction occurs to block in-diffusion of normally miscible chromium. Other interpretations of the pattern as, for example, wind-driven pin wheels or servings of RotonTM pasta must be under consideration by some of our readers, but EDITOR'S CHOICE must support the contention of the big wheels.

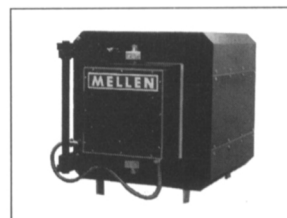
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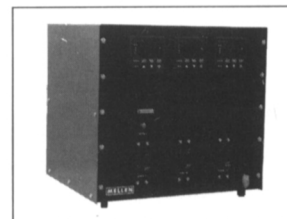
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