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ON THE COVER

Atomically thin boron, or borophene, has attracted attention because of its distinctive electronic properties. However, borophene is highly reactive, which makes it difficult to study outside of idealized vacuum conditions. Reversible hydrogenation of borophene (right), which exists as a flat sheet, enables synthesis of borophane (left), a puckered sheet with atomic hydrogen (individual white circles). Borophane's chemical stability may facilitate potential applications in electronics, batteries, sensors, and quantum technologies. See page 1143. Illustration: V. Altounian/Science

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