Editor's Summary

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Making light alloys work

The two lightest metallic elements, lithium and beryllium, do not interact with each other to form an alloy in ambient conditions. But the structure and also the reactivity of many compounds can be altered fundamentally by subjecting them to high pressure. A new computational study suggests that in the case of lithium and beryllium, four alloys — LiBe, $LiBe_2$, $LiBe_4$ and Li_3Be — should be stable at readily accessible pressures. Intriguingly, two-dimensional layers of almost ideal free-electron-like states appear within the three-dimensional crystal environment of one of the alloys, which may also have interesting superconducting properties.

LETTER

Emergent reduction of electronic state dimensionality in dense ordered Li-Be alloys

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