Low-cost fabrication of vicinal and stepped surfaces for enhanced catalysis (Technion)

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Despite their proven catalytic prowess, use of vicinal surfaces as catalysis enhancers has yet to take hold in the industry due to high production costs. Conventional formation of vicinal surfaces is performed on single crystals under high temperatures and ultra-high vacuum, making the manufacturing process expensive and inflexible. Such processes require additional complicated, energy and time-consuming treatments like low-angle miscuts, surface sputtering, and high-vacuum annealing. In contrast, our technology, allows for the formation of vicinal surfaces on various thin polycrystalline materials at almost room temperature and atmospheric pressure without the need for subsequent procedures-greatly increasing the flexibility, efficiency and cost-effectiveness of their manufacture.

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