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Scaling up prospective for the production of 2D crystals

Liquid-phase exfoliation of layered materials^{1,2} is offering a simple and cost-effective pathway to fabricate various two-dimensional (2D) crystal-based (opto)electronic and energy devices, presenting huge integration flexibility compared to conventional methods.¹⁻⁶ However, a key requirement for the realization of such applications is the development of industrial-scale, reliable, inexpensive production processes,² while providing a balance between ease of fabrication and final material quality with on-demand properties. Here, I will show our scaling up approach for the solution processing of 2D crystal based on wet-jet milling of layered materials. Moreover, I will present an overview of 2D crystals for flexible and printed (opto)electronic and energy applications, from the fabrication of large area electrodes³ to devices integration.⁶⁻¹³

References

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