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【204】 From energy dissipation on Dirac materials to open questions in 2D materials growth

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We have been studying various Dirac materials including topological insulators based on atom-surface scattering: A sensitive method to determine the electron-phonon coupling <https://doi.org/10.1021/acs.jpcclett.9b03829>, while lineshape broadening upon inelastic scattering allows to follow the nanoscale-nanosecond motion of water at Dirac materials <https://www.nature.com/articles/s41467-021-23226-5>.

Furthermore, we will discuss the growth of hexagonal boron nitride (hBN)^[5] based on real-time investigations of the structures during chemical vapour deposition. We illustrate that a precursor structure precedes the growth at lower temperatures and an additional phase co-exists with h-BN at higher temperatures - thus shining light on a largely unexplored area considering the growth of 2D materials.

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