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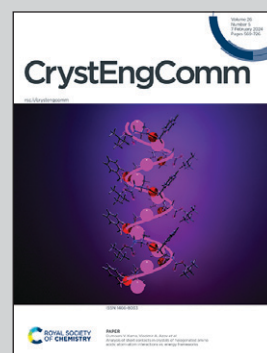
Credit: Larvae of bees image by Natali_Mis via iStock

Showcasing research from Professor Zhizhong Chen's laboratory, School of Physics, Peking University, Beijing, China.

Effect of grain coalescence on dislocation and stress in GaN films grown on nanoscale patterned sapphire substrates

The effect of grain coalescence on the dislocation and stress in GaN films grown on nanoscale patterned sapphire substrates (NPSSs) with low-temperature grown GaN (LT-GaN) and physical vapour deposition AlN (PVD-AlN) nucleation layers (NLs) is comparably investigated. Compared with the GaN films grown on NPSS with LT-GaN NLs, those grown on PVD-AlN NLs exhibit a decrease in the coalescence time from 2000s to 500s and a reduction in dislocation densities from $2.8 \times 10^8 \text{ cm}^{-2}$ to $1.4 \times 10^8 \text{ cm}^{-2}$, which is mainly attributed to improved orientation consistency of crystal facets.

As featured in:



See Zhizhong Chen *et al.*,
CrystEngComm, 2024, **26**, 620.