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## **【673】 van Der Waals Epitaxy Of Co-Zn-Mn on Graphene for Skyrmionic Applications**

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Skyrmions are topologically protected nanometer-sized magnetic vortices interesting for spintronics applications. Current challenges lie in the discovery and synthesis of materials with high critical temperatures ( $T_c$ ) and their implementation in thin-film technology. Here we present an approach for strain-free epitaxial thin-film growth of near-room temperature skyrmion-hosting material  $\text{Co}_{10-x}\text{Zn}_{10-y}\text{Mn}_{x+y}$ .  $T_c$  can be systematically tuned beyond room temperature by adjusting Co:Zn:Mn composition. We use graphene grown on Si as an underlying substrate for molecular beam epitaxy. Graphene allows us to exploit van der Waals interaction for strain-free growth. We report on the structural, compositional and magnetic properties of  $\text{Co}_{10-x}\text{Zn}_{10-y}\text{Mn}_{x+y}$  ( $1 < x, y < 3$ ) thin films. This growth technique opens a new route for integrating skyrmionic device concepts with silicon electronics.

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