Hexagonal form of table salt

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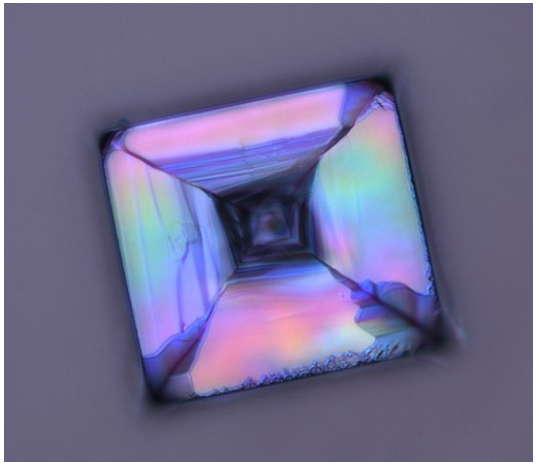
2D materials are made up of a single or a few atomic layers. They have properties and structures that are often very different to the bulk compound.

Sodium chloride (table salt) is one simplest ionic compounds. It usually has a cubic crystal, lattice structure. Yet when deposited as an ultrathin sheet on a diamond surface it forms a hexagonal structure. There is a strong chemical interaction between salt and diamond, which helps the novel structure form. Electron diffraction and X-ray analysis of samples confirmed that salt-on-diamond does contain hexagonal sodium chloride. As the thickness of the salt layer increases beyond 6 nm, the hexagonal structure reverts to the cubic one.



Polarisation microscopy images of sodium chloride crystals

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1. Give the formula of sodium chloride.
2. Describe the structure usually found in sodium chloride.
3. Graphene is a 2D structure. Describe the structure of graphene.