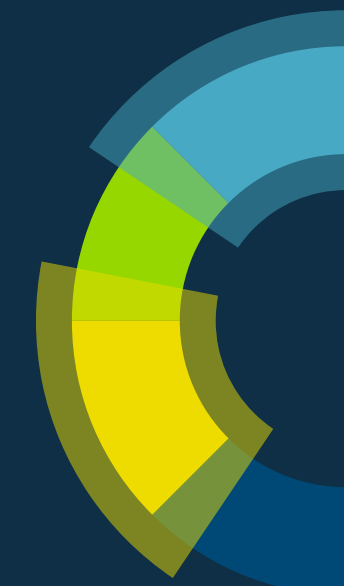
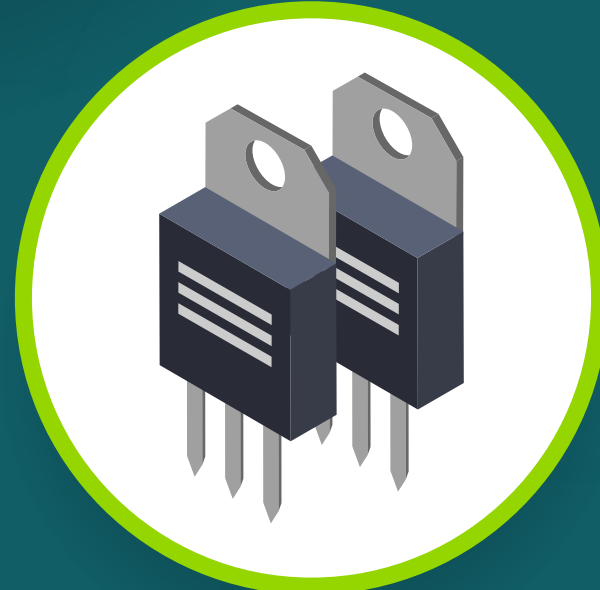
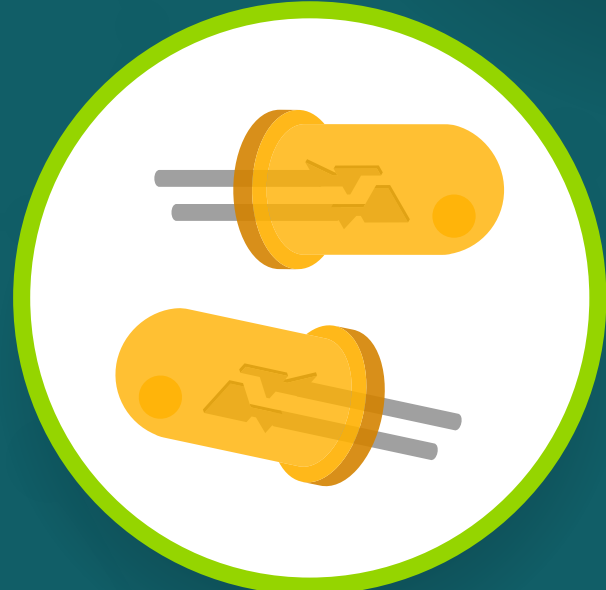
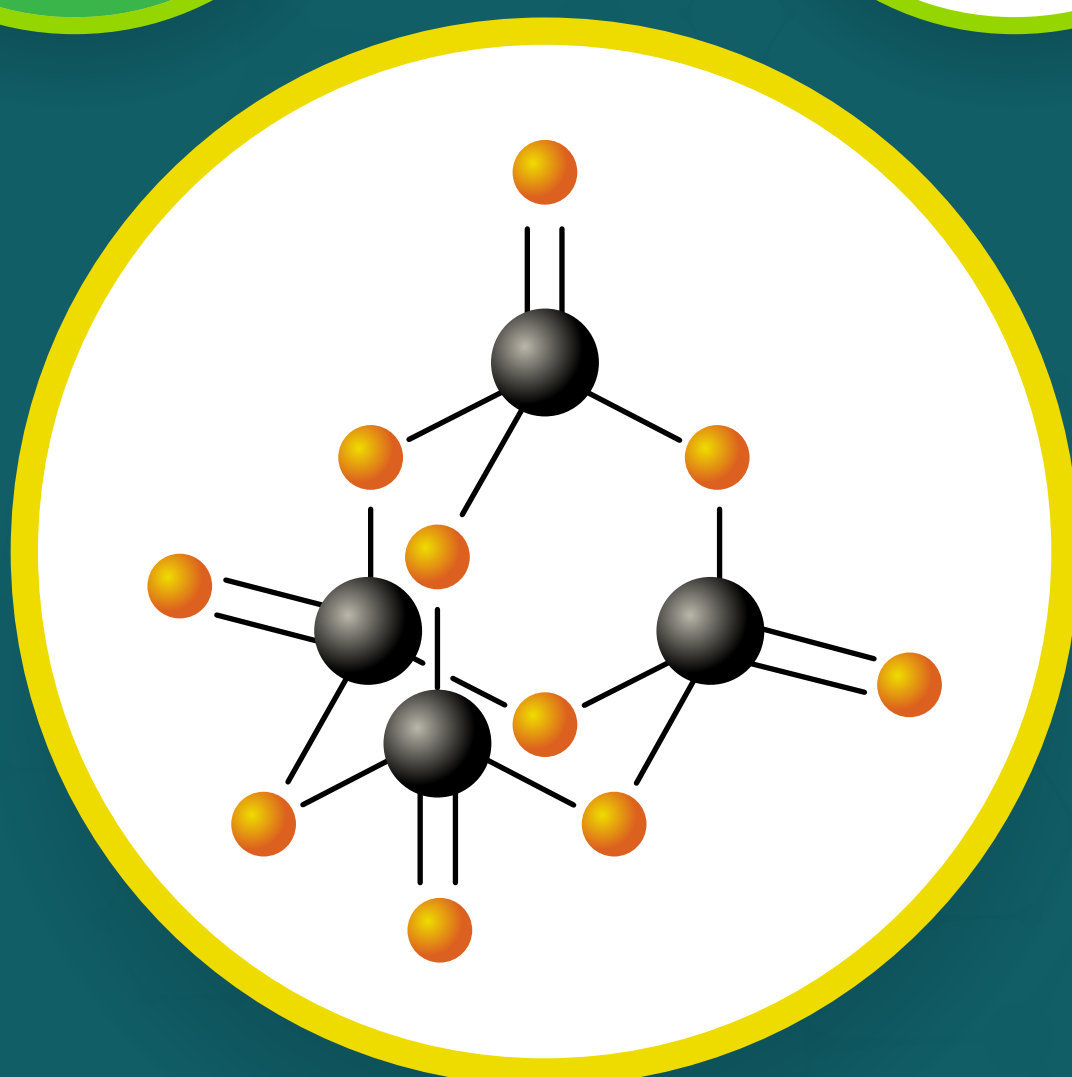


# Chemical Reactivity of Two-Dimensional Black Phosphorus

RSC  
Advances

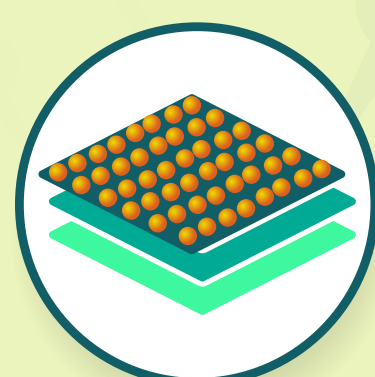
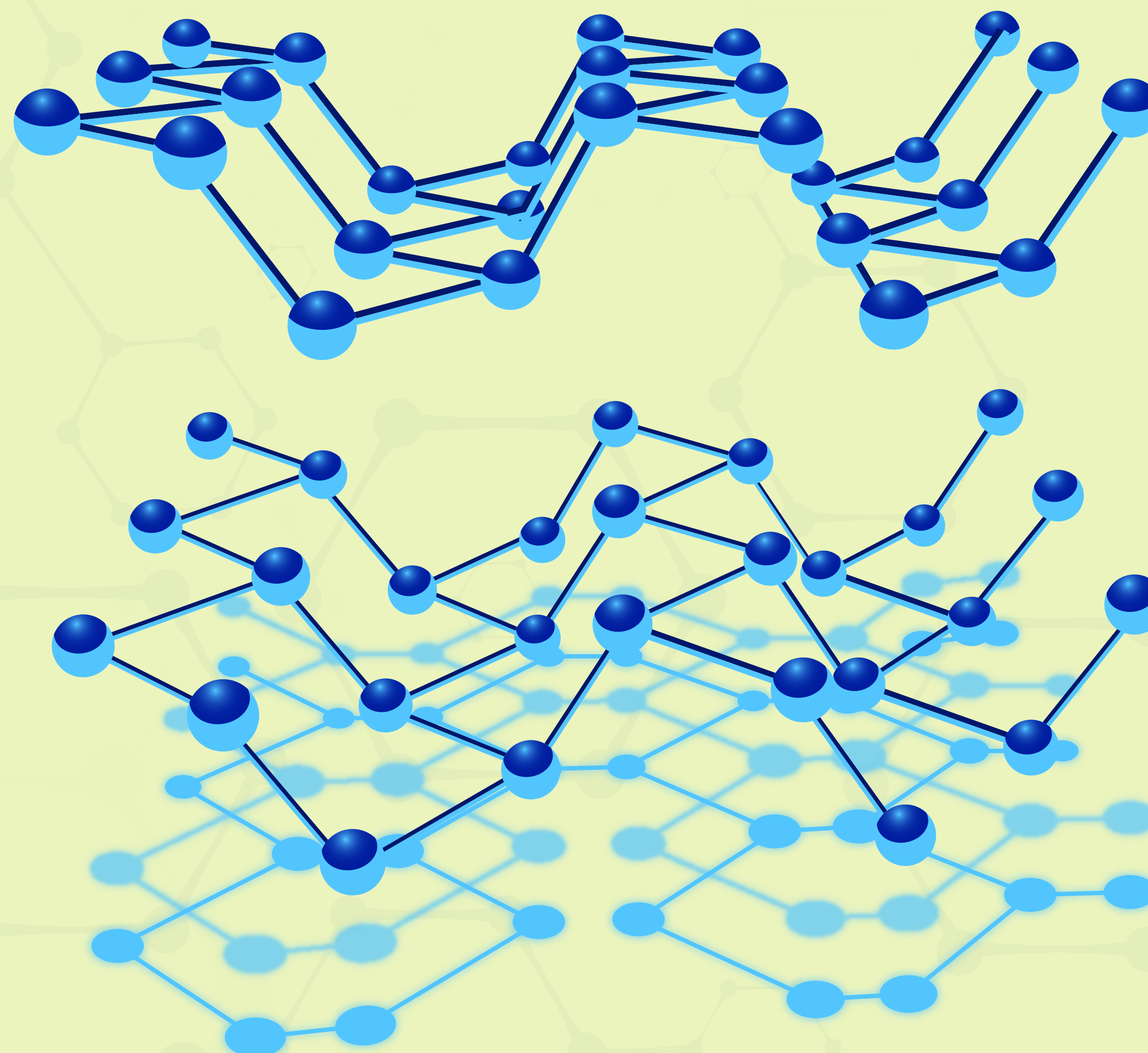


Two-dimensional (2D) black phosphorus (BP) has remarkable electronic properties and application potential in numerous fields

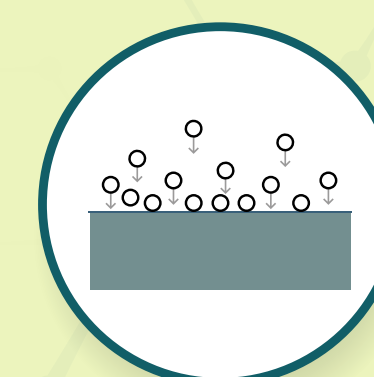


A deep understanding of its chemical reactivity principles is required to fully exploit 2D BP

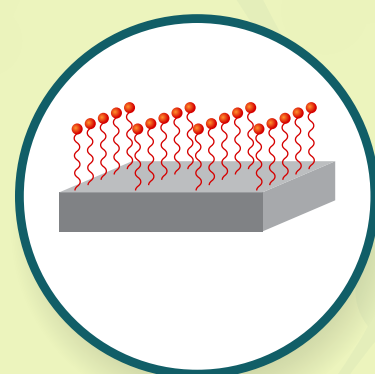
## A review of the research on the basic chemical reactivity of 2D BP



Controlled oxidative degradation used for effective top-down BP flake thinning



Non-covalent stabilisation with electron acceptors



High degree covalent functionalisation with alkyl halides using the reductive route



High catalytic potential due to intrinsic electron richness

These insights permit precise engineering of 2D BP's chemical and electronic properties, enabling its application in fields such as electronics, energy storage, and catalysis