

## Lattice Opening upon Bulk Reductive Covalent Functionalization of Black Phosphorous

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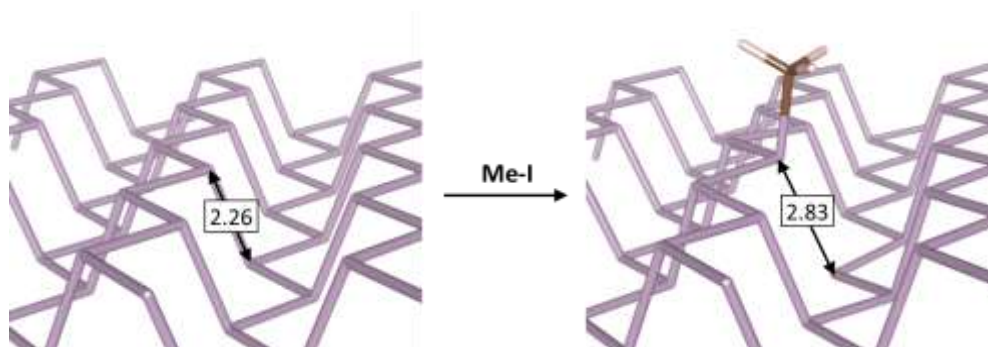
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Black Phosphorous has attracted tremendous attention during the last few years due to its outstanding intrinsic properties.[1] Besides different passivation strategies and the non-covalent functionalization of the 2D surface especially the covalent modification of BP was of great interest.[2,3] Recently, in our group the chemical bulk reductive covalent functionalization of 2D black phosphorus (BP) using BP intercalation compounds has been developed.[4] Through effective reductive activation, covalent functionalization of the charged BP is achieved by the use of organic alkyl halides. Functionalization was extensively demonstrated by means of several characterization techniques such as Raman Spectroscopy, TG-MS analysis, X-Ray Photoelectron Spectroscopy, <sup>31</sup>P-MAS NMR Spectroscopy as well as by DFT calculations, showing higher functionalization degrees than the neutral routes.

### References

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### Figures



**Figure 1:** Methylation of Black Phosphorous via reductive route leads to an opening of the 2D-BP lattice.