



## Supporting Information

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### **Chemical vapor deposition of highly conjugated, transparent boron carbon nitride thin films**

*Paolo Giusto,\* Daniel Cruz, Tobias Heil, Nadezda Tarakina,  
Maddalena Patrini, and Markus Antonietti\**

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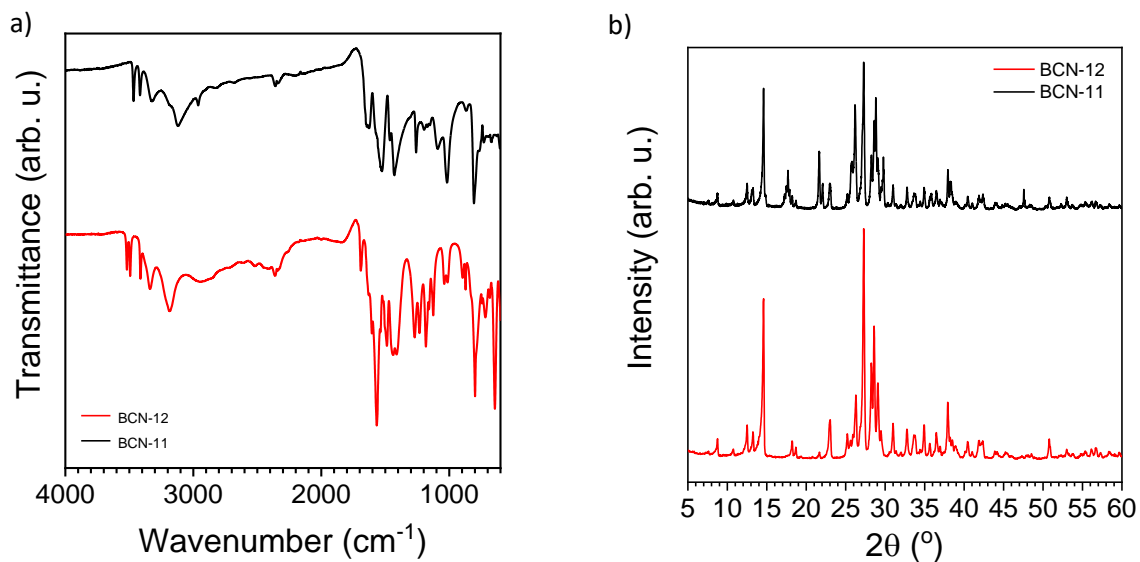


FIG S1. FTIR (a) and XRD (b) of BCN-12 (red line), BCN-11 (black line).

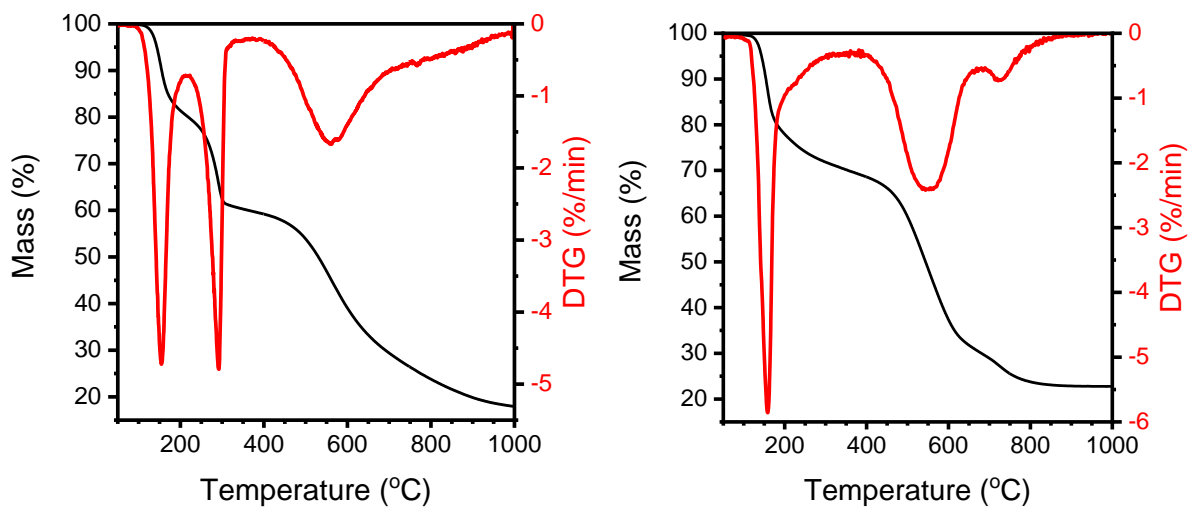


Figure S2. TGA and derivate (DTG) of BCN-11 (left) and BCN-12 (right) precursors.

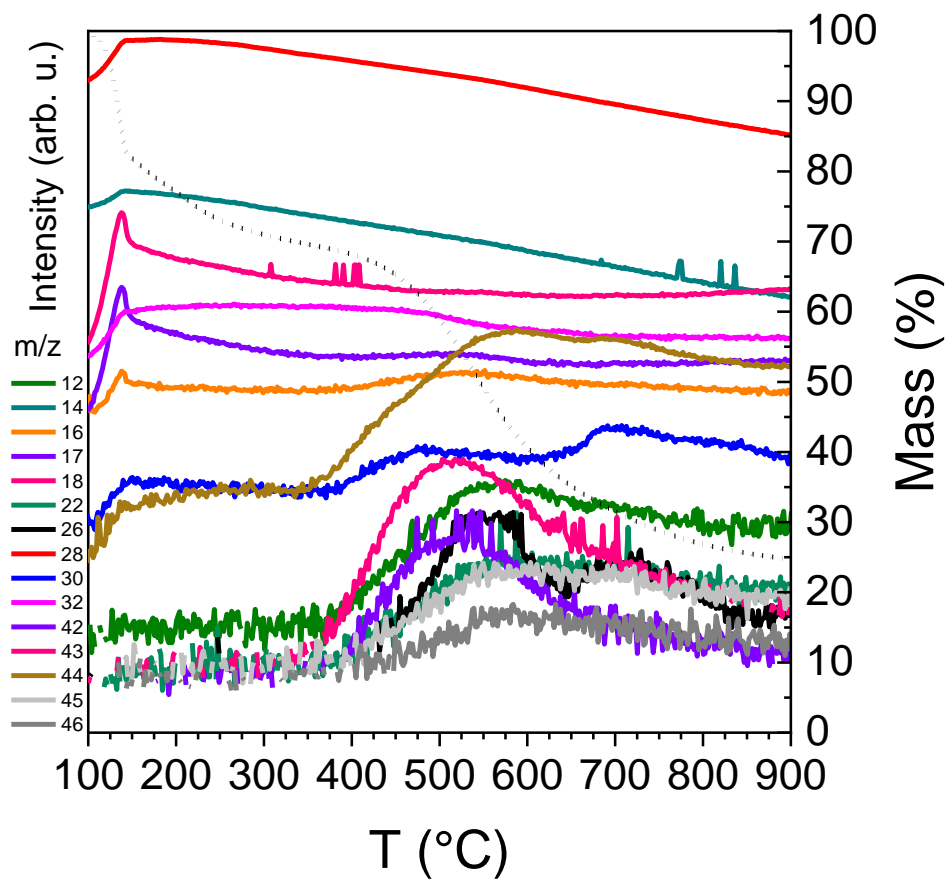


Figure S3. TGA MS of BCN-12 precursor. Dotted line is the TGA, solid lines MS at different  $m/z$ .

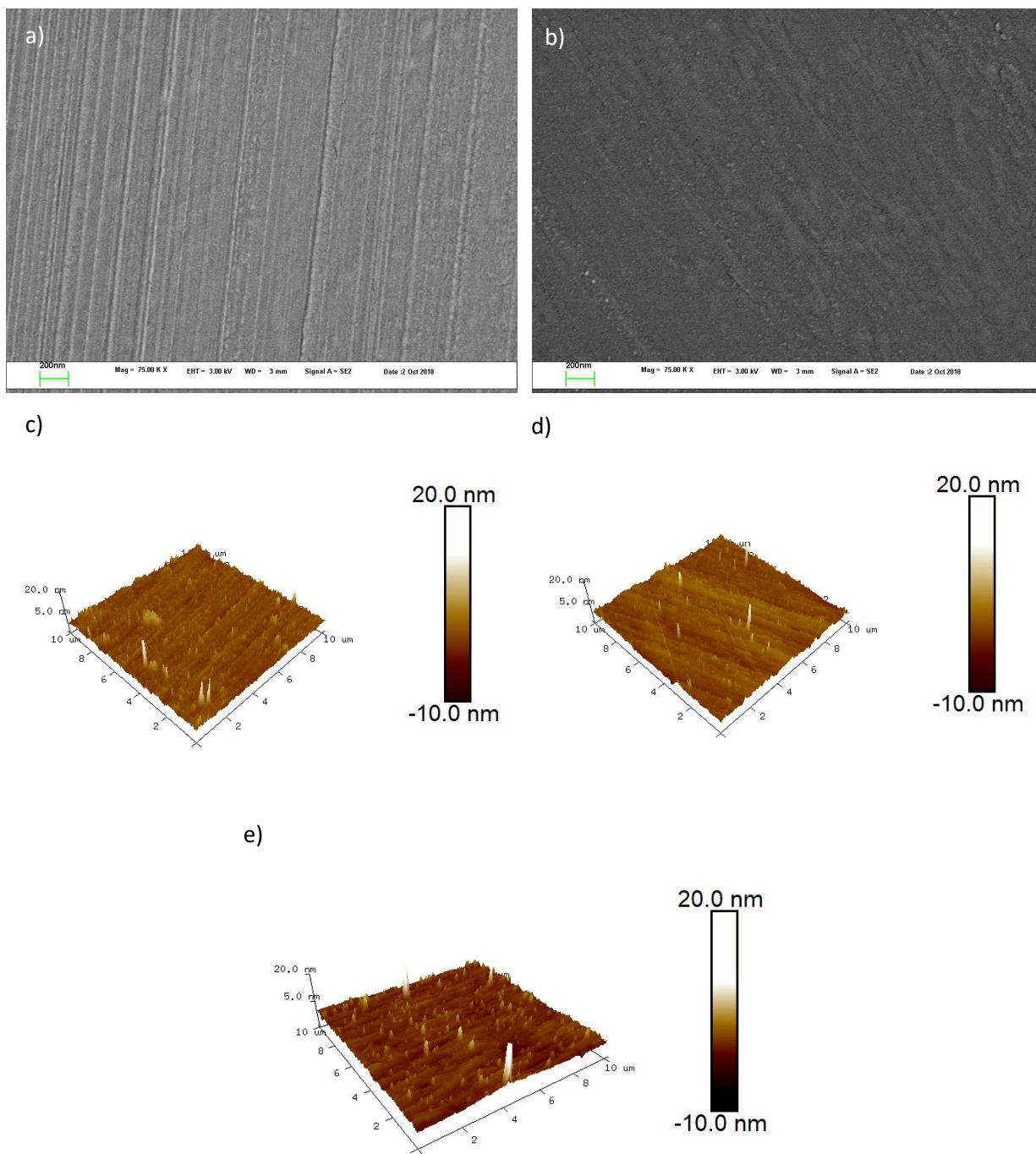


Fig S4. SEM images of BCN-11 (a) and BCN-12 (b). AFM of BCN-11 (c) and BCN-12 (d) on fused silica substrates. (e) AFM of bare fused silica substrate. Roughness ( $R_q$ ): 1.13 nm (BCN-11), 1.05 nm (BCN-12), and 1.01 nm (bare fused silica) over a  $100 \mu\text{m}^2$  surface.

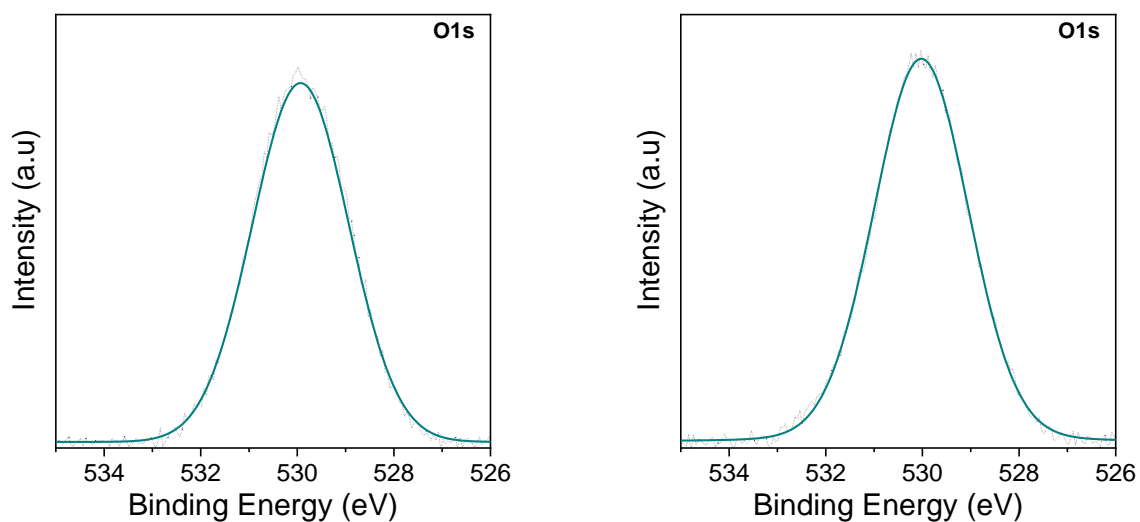


Fig S5. O1s XPS peak deconvoluted of BCN-11 (left) and BCN-12 (right).

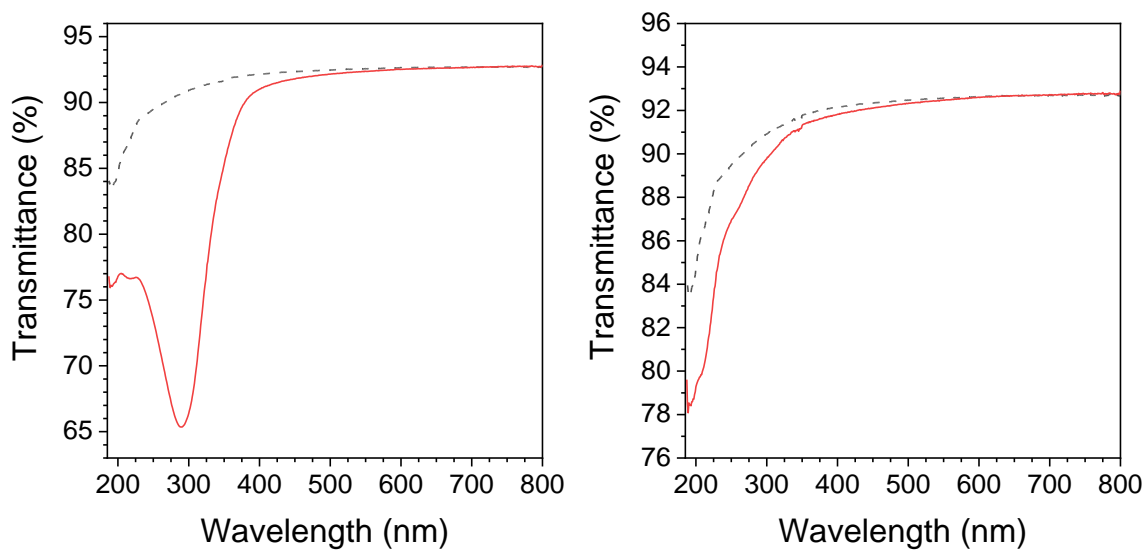


Fig S6. Transmittance of BCN-11 (left) and BCN-12 (right)

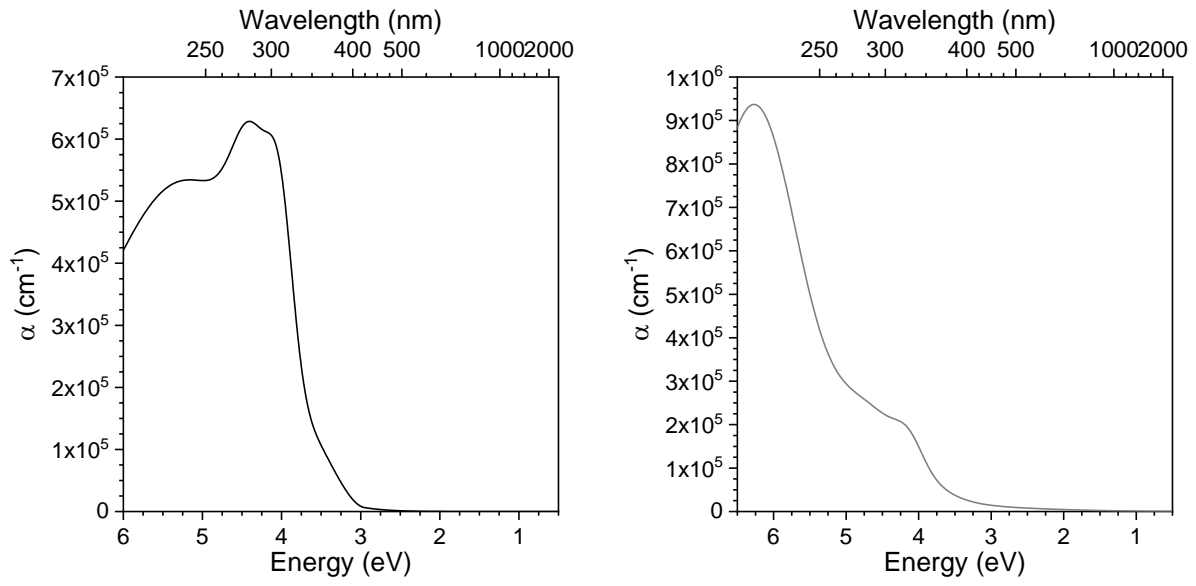


Fig S7. Absorption coefficient spectra of BCN-11 (left) and BCN-12 (right)

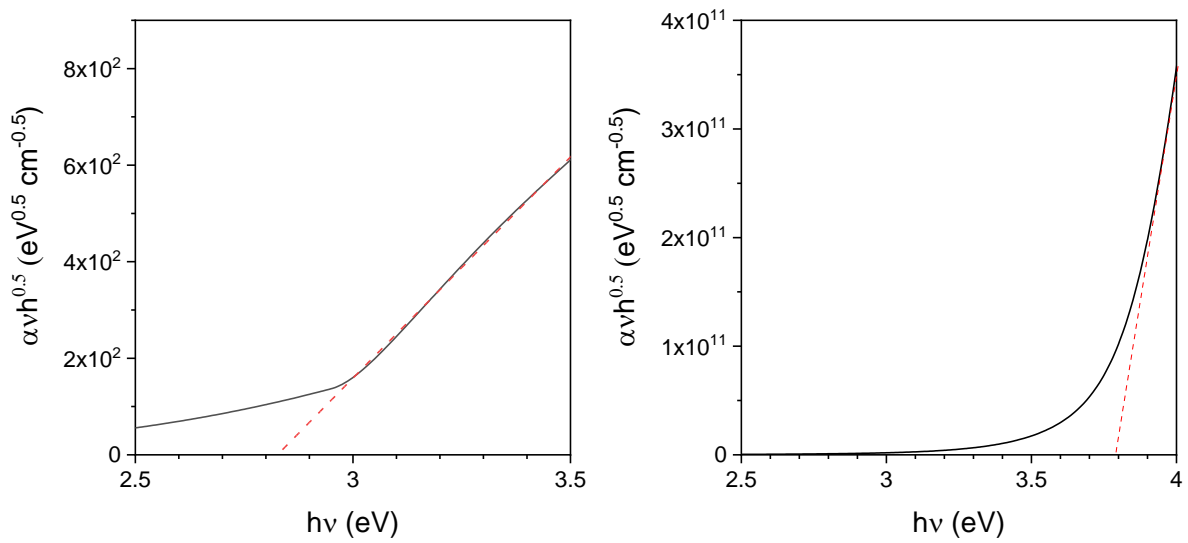


Fig S8. Tauc plots of BCN-11 (left) and BCN-12 (right)

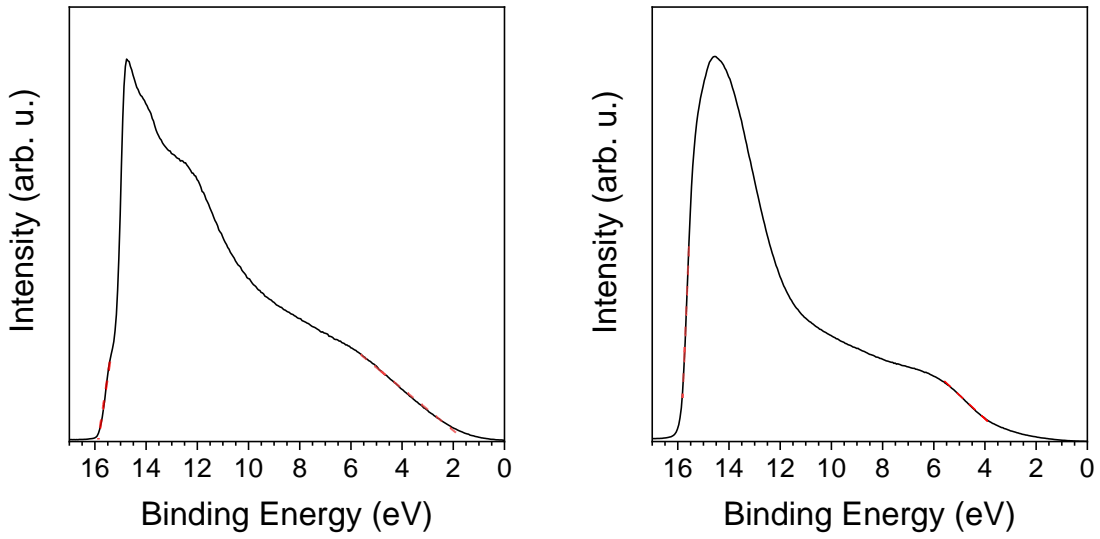


Fig S9. UPS spectra of BCN-11 (left) and BCN-12 (right).

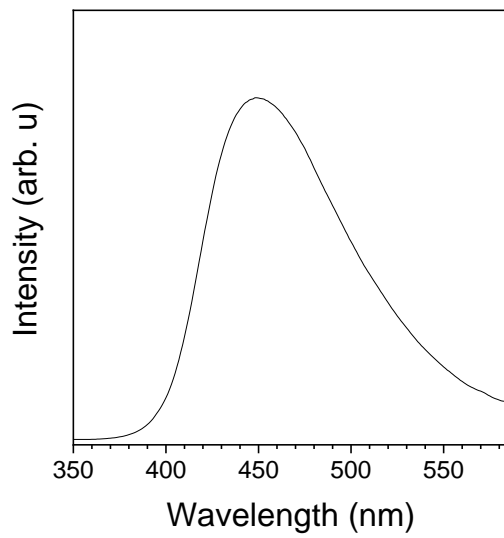


Fig S10. Fluorescence spectrum of BCN-11 thin film at 300 nm excitation.