

Supporting Information

Excitonic absorption and defect related emission in three-dimensional MoS₂ pyramids

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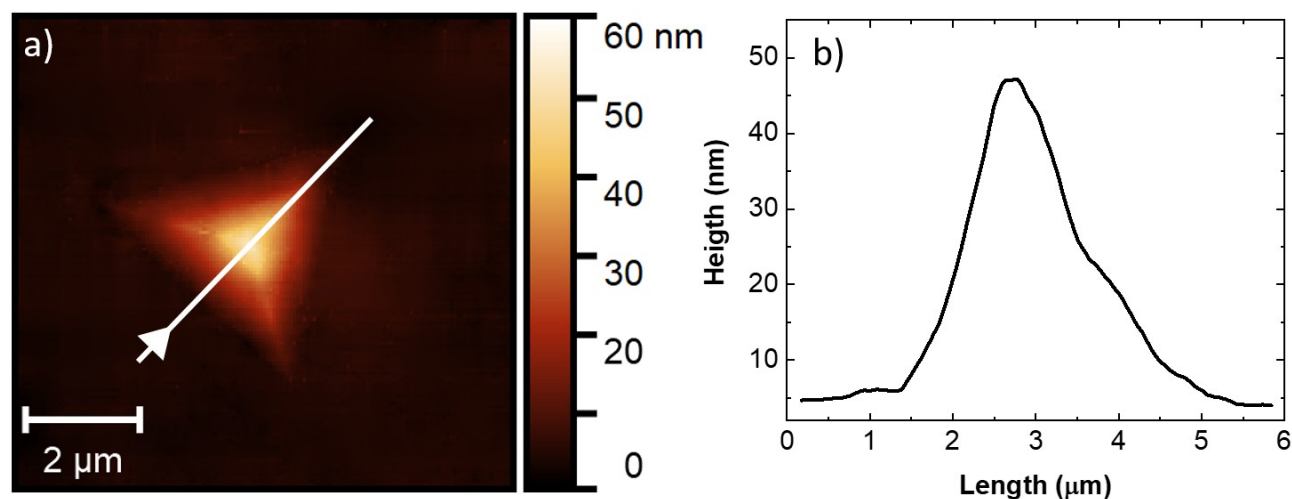
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S1 Morphological analysis of the MoS₂ pyramid carried out by atomic force microscopy. In particular, a) the thickness map of the pyramid, the white line indicated where the height profile is extracted from the map and reported in panel b).

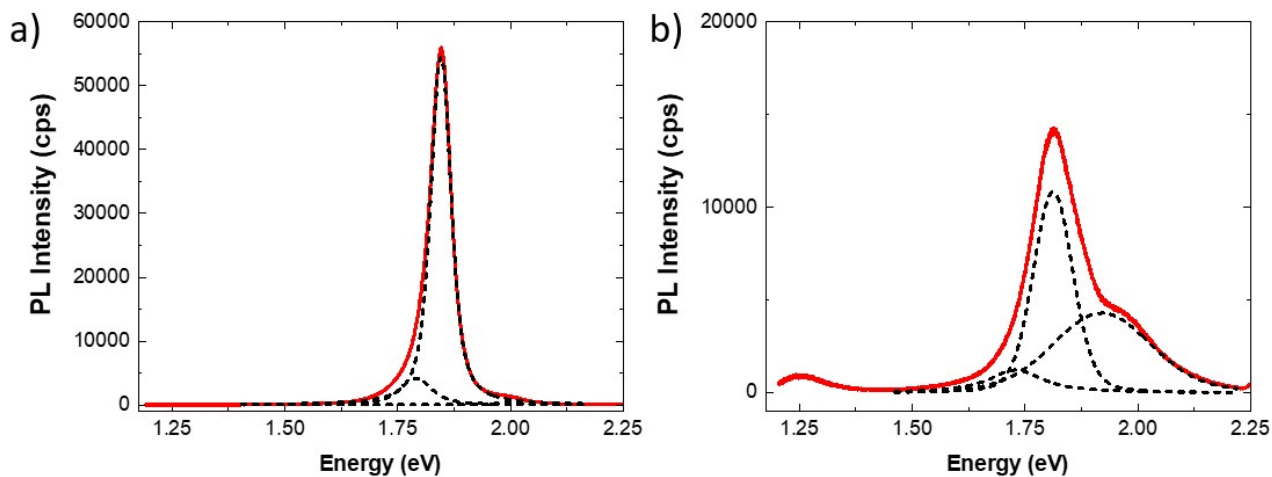


Figure S2 Voigt peak deconvolution of PL spectra

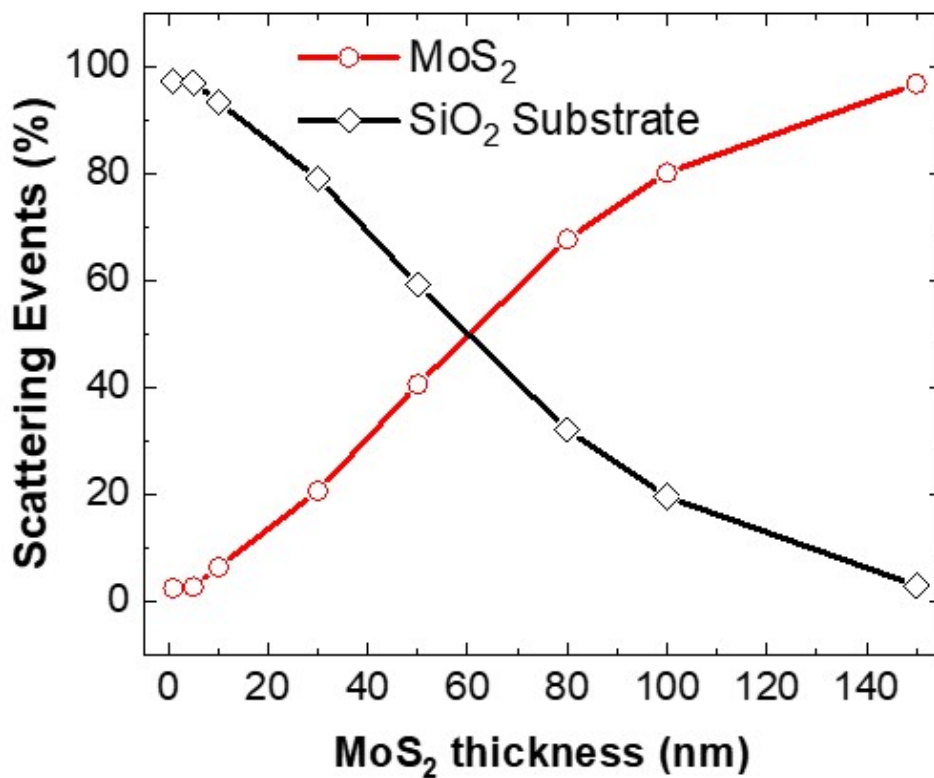


Figure S3 Scattering Events in MoS₂ and in the SiO₂ substrate with increasing thickness of the MoS₂ layer.

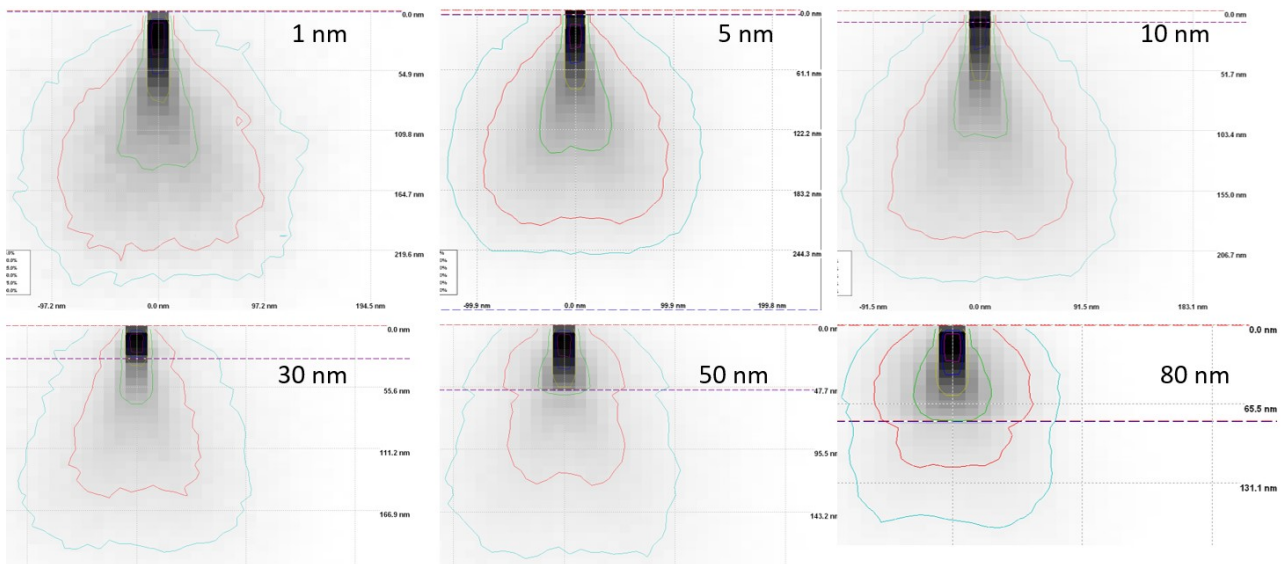


Figure S4 Energy release diagram of the electron beam for increasing MoS₂ thickness. Considering the generation/recombination volume the electron beam power density can be evaluated in 1.2×10^9 W/cm³.

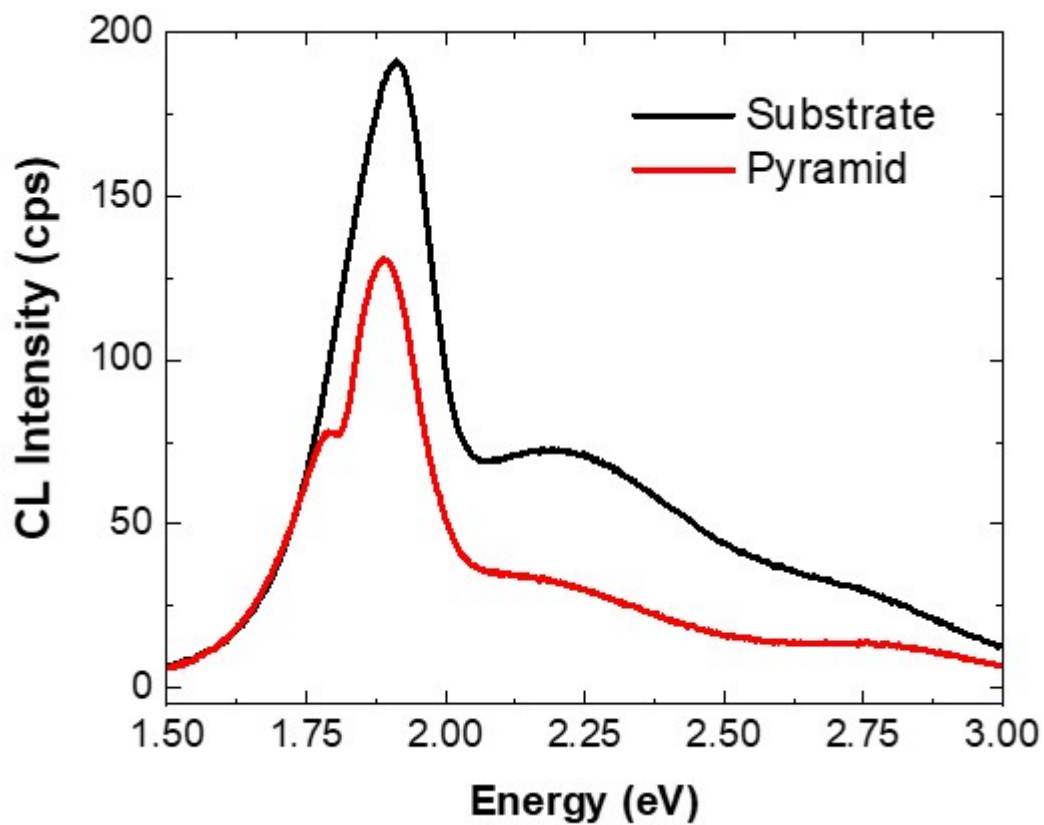


Figure S5 Room temperature CL spectra, from which the absorption / emission spectrum of Figure 3 is obtained.

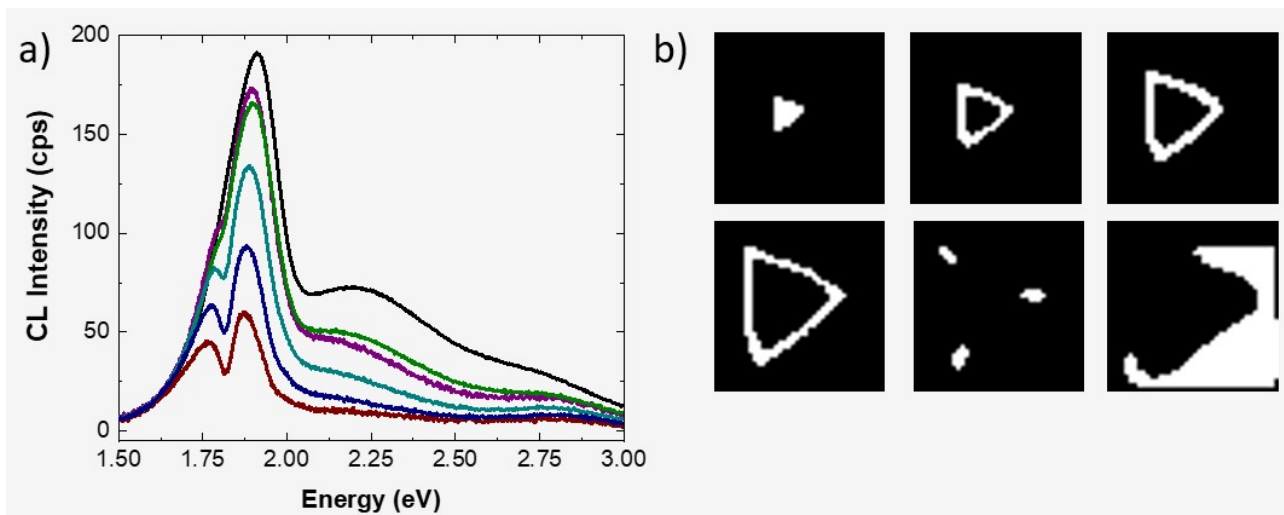


Figure S6 Room temperature CL spectra, from which the absorption / emission spectrum of Figure 4 are obtained. b) Integration masks for the areas where the spectra are obtained.

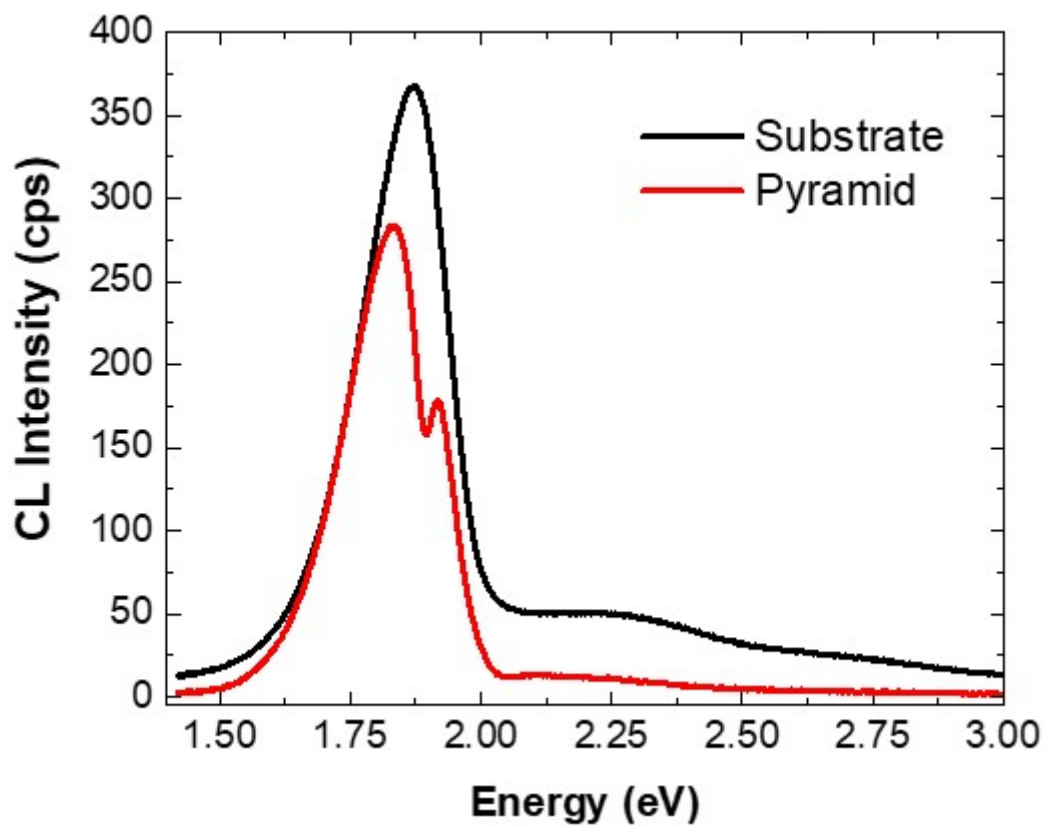


Figure S7 Cryogenic temperature CL spectra, from which the absorption / emission spectrum of Figure 5 is obtained.

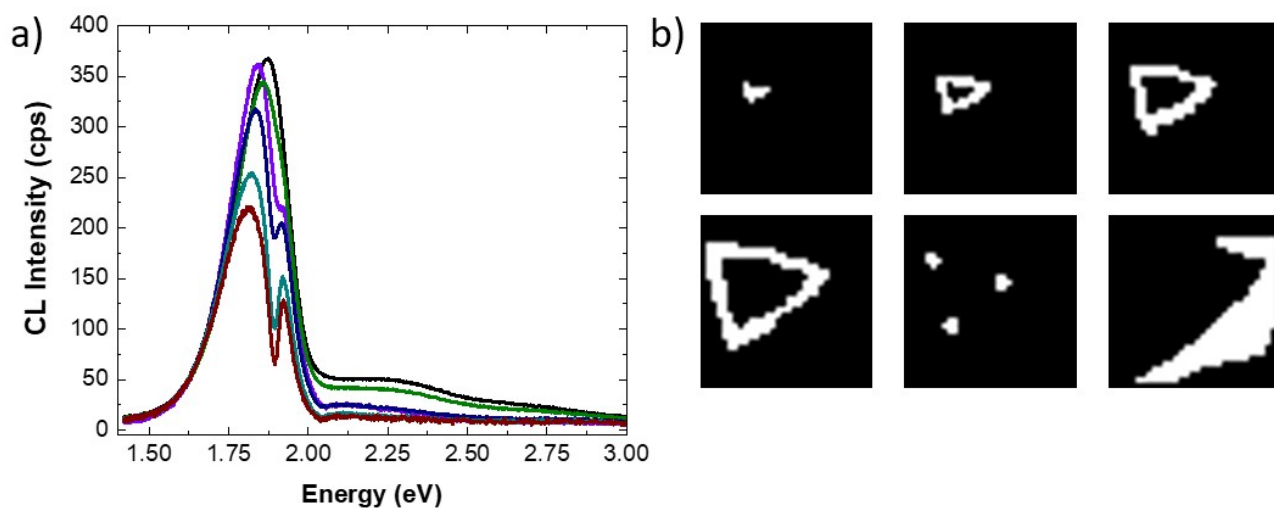


Figure S8 Cryogenic temperature CL spectra, from which the absorption / emission spectrum of Figure 4 are obtained. b) Integration masks for the areas where the spectra are obtained.