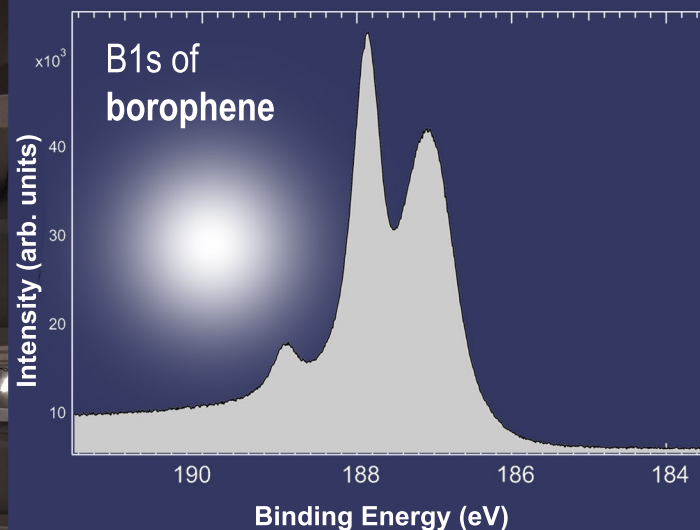


Electronic properties of 2D materials

After the first synthesis of graphene the huge family of two-dimensional materials has grown at an impressive rate, with transition metal dichalcogenides and Xenes which have been added in the more recent years. The possibility to combine these ultra-thin sheet of matter in the so called van der Waals hetero-structures has opened the door to the development of valleytronic devices, where the valley degree of freedom of the electronic structure can be used to carry the information.

One of the goals of the **Nanoscale Materials Lab** in combination with the SuperESCA beamline research group is to exploit the unique properties of the synchrotron radiation produced by Elettra to grow and characterize 2D materials with the best structural qualities, since defects largely compromises their unique transport properties.



Photoelectron spectroscopy with synchrotron radiation is an extraordinary tool to investigate the structural, electronic and chemical properties of 2D materials, to follow in-situ their growth process and to understand their thermal behaviour in an otherwise inaccessible temperature range.



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If you want to join us in the 100th birthday of our university for the **Bachelor** or **Master** degree do not hesitate to contact us !