

Title: **B,N-codoped Graphene: preparation, properties, Applications and XPS spectral data.**

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The aim of this work is to collect X-ray Photoelectron Spectroscopy (XPS) data of Boron and Nitrogen codoped-Graphene in order to determine whether this technique is able to differentiate whether the doping heteroatoms are disposed, in nearby positions such as ortho, meta or para positions within the same graphene ring.

First, the materials studied in this work are examined. Graphene, B-monodoped and N-monodoped Graphene and BN-codoped Graphene. Each material is defined and their main properties, applications and doping methods investigated.

Subsequently, a description of the XPS technique is made talking about its fundamentals, equipment and experimental procedures, is briefly compared to other Photoelectron Spectroscopy techniques such as AES, XRF or UPS.

Finally, a bibliographic data search is performed on scientific articles focused in XPS applied on N-monodoped, B-monodoped and BN-codoped Graphene. The collected data on the monodoped graphenes are compared to that of the heterocodoped materia in order to detect pattern changes caused by the presence of both heteroatoms in closest positions inside the graphene lattice.