ESONN' 2020 European School On Nanosciences and Nanotechnologies

Virtual practicals & on-line tutorials

N°45:
Surface analyses by X-ray photoemission spectroscopy of electrodes materials for lithium ions batteries

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Beside the industrial challenges to enhance the material efficiency for the energy storage, lithium ion batteries are under the spotlight as a candidate for powering many devices. It goes without saying that a deep fundamental research on the mechanisms involved during the electrochemical cells operating is required to bring optimal solutions with higher safety and efficiency requirement. Within this framework, X-ray Photoemission spectroscopy (XPS) provides valuable information regarding the redox process and Solid electrolyte interphase formation (SEI) occurring during batteries cycling.
In this practical session, we will screen the basic theory and practice of XPS and show through few examples the output of this spectroscopy to the battery material study.