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NEXT - An international network for Nonlinear Extreme ultraviolet to hard X-ray Techniques

Extreme Ultraviolet (EUV) table-top sources and soft to hard X-ray Free Electron lasers (XFELs) have opened a new era in science, providing ultrashort, coherent, and tunable pulses that are used to perform cutting-edge experiments in Atomic and Molecular physics, Condensed Matter Physics, Biology and Chemistry. However, most of the reported studies rely on linear light-matter interactions, which are fundamentally limited in the dynamical information they can provide. On contrary, nonlinear radiation-matter interactions have proven to be a powerful tool to unravel hitherto inaccessible properties.

NEXT is an international network for focused on the development and application of nonlinear extreme ultraviolet to hard X-ray techniques. Since October 2023, it has been funded by the EU as a COST Action CA22148 (https://ca-next.eu/) and is coordinated at IMDEA Nanoscience institute in Madrid (Spain). NEXT will capitalize on pioneering promising results, reported over the last decade, to create the first concerted experimental and theoretical effort aimed at implementing EUV/X-ray nonlinear spectroscopies at lab-based and large-scale facility short-wavelength sources, especially XFELs.

As the Core Group of NEXT, we would like to advertise this network to a broader community of scientists working in the fields of nonlinear and ultrafast spectroscopies, which includes the participants of FEMTO16 conference in Trieste.

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