

PROJECT OVERVIEW

The project is in the research area of the generation, metrology and applications of the coherent XUV radiation of higher order harmonics and attosecond (*as*) pulses ($1\text{atto}=10^{-18}$), through which the successful transfer of knowledge from two major European Laser Laboratories (Saclay, MPQ) to a third one (IESL), is envisaged.

The main objective of the project is to provide the framework and means in order to merge existing state of the art expertise in two partners laboratories with that existing in the host institution, aiming to achieve and exploit the integration of existing or under development complementary techniques in a laboratory unit, that combines highest temporal and spectral resolution at high intensities in the XUV/EUV spectral region.

The transfer of knowledge will be implemented in three tasks, incorporates the transfer of knowledge on issues of i) high spectral resolution techniques for coherent XUV/EUV (Fourier Transform and Ramsey type spectroscopy) spectroscopic applications and ii) the generation of intense isolated attosecond pulses based on carrier frequency/envelope stabilized few cycle laser pulses.

The proposed transfer of is expected to lead to a significant improvement of the research capabilities of the host organization and is expected to strongly contribute in maintaining and further strengthening its sound international presence and competence, as well as to support its continuous efforts towards research improvement and new breakthroughs in a field in which research funding institutions of Europe invest and as a consequence European science is a world leader.

The project will be implemented through secondments of experienced researchers of the two partner institutions in the laboratories of the coordinator as well as of researchers of the coordinating institution to the laboratories of the partner institutions. Further augmenting actions towards optimal transfer of knowledge include the organization of three brainstorming workshops. The development and installation of the novel techniques and the demonstration of their applications in the laboratories of the coordinating institution will be facilitated by researchers to be employed by the project.

The framework of the proposed project and its synergy with other related projects such as RT Networks, MC training sites and European Research Infrastructures, offers excellent training opportunities to experienced and promising young researchers as well as a brilliant prospects for a fruitful extension of the scientific activities of more experienced senior scientists participating in the project. At the same time transfer of knowledge and training content of the project will be highly beneficial for the other projects with which close synergy is foreseen.

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