Three predoctoral contracts are available in the group of Prof. **Fernando Martín** at IMDEA-Nanociencia (http://nanociencia.imdea.org/fernando-martin-s-group/group-people,) and the group of Prof. **Luis Bañares** at Universidad Complutense de Madrid (https://webs.ucm.es/info/dinalaser/index.html), in the framework of a synergy project funded by the Madrid regional government (Y2018/NMT-5028, FULMATEN-CM) and the European Social Fund.

The research project

The project aims at using attosecond and few-femtosecond laser pulses for real time imaging of charge transfer processes occurring in organic molecules, and eventually to control them. ***Two of the predoctoral positions concern the theoretical modeling of*** *such* ***charge transfer processes in systems of interest for the design of new materials***. ***The third position concerns the build-up and subsequent use of a high harmonic generation line specially designed to visualize charge transfer processes in pump-probe experiments with sub-femtosecond or few femtosecond time resolution***.

Previous work of the groups in related research topics can be found in the group websites:
https://campusys.qui.uam.es/

https://webs.ucm.es/info/dinalaser/index.html

Candidates Profile

Candidates of any gender and nationality are welcome to apply. To be considered, candidates must have:
1. A **BSc** degree in **Physics or Chemistry**. A post graduate specialization degree (e.g. MSc) in Physics or Chemical Physics will be positively evaluated.
2. For the two predoctoral positions in theory, excellent knowledge of quantum mechanics, basic electrodynamics, basic atomic, molecular and optical physics; scattering theory and numerical methods.
3. For the predoctoral position in experiments, excellent knowledge of ultrafast lasers and laser and photoelectron spectroscopies
4. Fluent English;

We will value positively enthusiasm for learning and commitment to teamwork and any additional skills in the areas of mathematics, physics, chemistry and programming that are relevant to the two offered position in theory. For example, acquaintance with quantum chemistry packages to model excited states; participation to software projects; competences in photoelectron spectroscopies, attosecond physics; etc. For the position in experiment, we will value skills in experimental molecular physics, lasers and spectroscopy.

Starting Date and Duration

Positions should ideally start **as soon as possible** and are funded for 3 years each. A one-year contract will be signed initially, followed by extension(s) until the end of the project, depending on the performance of the candidate, and upon mutual agreement.

Remuneration

Salary will be agreed based on the candidate experience following the standards of a predoc position in Spain.

Application procedure

Candidates should send to fulmaten-cm@imdea.org a CV, a cover letter clearly explaining the preferred position, contact information for two references, copy of BSc and MSc degree certificates, academic records, and any additional information that can support the application. Deadline is **March 3, 2019**. Applications not following this procedure will not be considered.

Additional supporting documents, clarification and recommendation letters could be requested during the selection process. Selected candidates shall be contacted for an interview, where practical questions will also be asked.