

**OFERTA DE PROYECTO DE TESIS DOCTORAL AYUDAS PARA LA
FORMACIÓN DE PROFESORADO UNIVERSITARIO (FPU) 2017**

APELLIDOS Y NOMBRE DEL DIRECTOR
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TÍTULO COMPLETO DE LA TESIS
Colisiones moleculares reactivas a bajas temperaturas
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MEMORIA DEL PROYECTO DE TESIS DOCTORAL (Máximo 3.000 palabras)

Group Description:

The MolClus (Agregados Moleculares en Fases Gas y Líquida) Group is composed of three staff researchers and several Master and PhD students. Its research activities comprise the study of molecular clusters and reactive scattering processes with special emphasis in the development of computational techniques.

Project:

We will focuss on the understanding of the dynamics of reactive collisions between atom and molecules specially at the low temperature and energy regimes. Most of the processes under consideration has an enormous interest in Astrophysics and cold condensate Physics. Our main goal consists on the development and application of numerical tools within the quantum mechanical and statistical framework. Direct collaboration with some of the most active international research groups is already in progress so the candidate will have the opportunity to contact with both experimentalist and theoreticians from all over the international community. In particular, atom-diatom and diatom-diatom collisions will be investigated in detail and calculation of thermal rate constants and cross sections to provide theoretical support to some of the current experimental works in progress is one of the main objectives of the project.

References:

- [1] T. González-Lezana, Int. Rev. Phys. Chem. 26, 26 (2007)
- [2] P. Honvault et al., Phys. Rev. Lett. 107, 023201 (2011)
- [3] L. Pagani et al., Astrophys. & Astron. 551, A38 (2013)
- [4] T. González-Lezana et al., MNRAS 467, 1249 (2017)