Scientific report of Dr. Durans's stay as a Short Term Scientific Mission within the COST scientific programme on Electron Controlled Chemical Lithography (ECCL).

The stay of Dr. Duran working with Prof. Gianturco has been from 15/05/08 to 15/07/08. The motivation of this stay was the interest in the scattering of low-energy electrons from molecular gases in the presence of electromagnetic fields.

Prof. Gianturco has a long-standing experience in this topic in the free case, i. e. whitout external fields. It was planned that under the supervision of Prof. Gianturco Dr. Duran could work on this problem.

Taking into account that the closed problem of the atom-molecule scattering is well known by Prof. Gianturco and Dr. Duran it was thought to first add the electromagnetic fields to this kind of systems as they are more general. The experience gained here will then be applied later to the electronic problem.

The work developed during this period did not yet produce a publication, but we can report the development of a new computational code for atom-molecule scattering collisions in the presence of magnetic fields which is now in its final stage and almost ready to be used. We expect to get results in the next months or so on systems that have not been studied before in the presence of external fields: we plan, for instance, to analyse NH (3Sigma) colliding with Rb or Cs.