Low energy electron collisions with small molecular clusters: a Multiple Scattering approach

Stefano Caprasecca
Università di Pisa

A new approach to treat low energy electron collisions with molecular clusters, based on Multiple Scattering ideas, has been developed and tested. It simplifies the study of the collision by dividing the target cluster into molecular sub-units; ab initio methods (particularly the R-matrix one) are employed to calculate collisional data for the electron – sub-unit scattering process, which are later combined by the Multiple Scattering method to account for the interference between sub-units.

The application to the scattering from water and formic acid clusters is presented; the results (cross sections) show good agreement with other theoretical and experimental results.