A+M Data Center Activities in National Fusion Research Institute (2017~2019)

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This presentation includes the research facilities of the NFRI Research Group of Korea and the data production techniques and data for plasma application.

We investigated ways to produce collisional scattering cross sections of atoms and molecules by electron collision, and established a direct data production base through experimental measurements and developed a measuring device and measured total scattering cross section for e – Ar, N2O, CH_4 collisions at low electron energies.

we obtained fundamental physical & chemical properties data of 193 basic physical property data for 21 kinds of C3Fy compounds and 89 basic data on the basic physical property data for 5 C4F8 isomers and 54 data for 3 kinds of L-PFC (X) compounds.

We have optimized the structure of molecules using the Density Functional Theory DFT (wB97X-D/aug-cc-pVTZ) using the Gaussian 09 program and the optimized geometry is used for the calculation and calculated various cross sections at low energies along with the detection of resonances using *ab initio* R-matrix method through Quantemol-N.

Our evaluation group strives to provide the data set as complete as possible. If there is no data, we are suggesting data studies to colleagues. We plan to make the Group data evaluation project for continuous activity.

DCPP web database system provides numerical and bibliographic data of atomic, molecular interaction. Also, the system provides functions for the efficient compilation, assessment, and grade evaluation process of atomic, molecular and plasma-material interaction data. We improved our system that focuses on user convenience. We plan to add plasma-surface reaction data in the near future.

We also collected approximate 1000 papers from journals a year to update AMBDAS. We need to change the data searching method to shorten the collection time, so we plan to find a way through the analysis of past search result