



第 155 回 触媒化学研究センター談話会

演 題： Energy transfer in scattering of atoms from surfaces

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要旨： Inelastic energy transfer in scattering of atomic particles from surfaces is of paramount importance for understanding and interpretation of the dynamics of atom-surface interactions and elementary processes taking place at surfaces. Energy exchange with a solid surface may involve (de)excitation of electronic and nuclear degrees of freedom that constitute the heat-bath of the solid. There are several experimental ways to study energy transfer to surface vibrations (phonons) under the steady state conditions. In this talk I shall discuss energy exchange processes in scattering of atomic beams from well characterized surfaces that can be realized in UHV environment. I shall discuss several parameters that characterize energy transfer in the classical and quantum scattering regimes and point out that a quantum description is needed to interpret the data available from several prototype collision experiments [1,2].

[1] B. Gumhalter, A. Šiber and J.P. Toennies, Phys. Rev. Lett. 83(1999)1375.

[2] B. Gumhalter, Physics Reports, 351(2001)1.

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