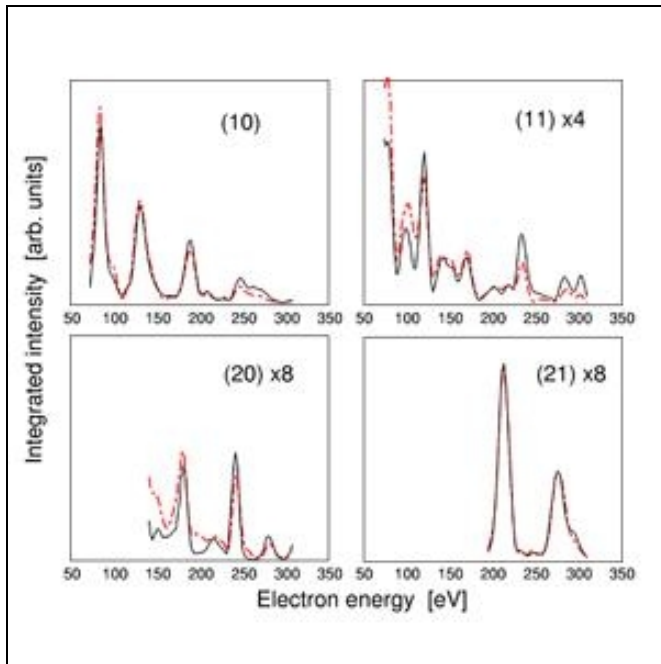


**The structure of NaCl (100) and KCl (100) single crystal surfaces
(Result of the month 10/2002)**



For the first time, relaxation and rumpling of the (100) surfaces of NaCl and KCl single crystals were quantitatively investigated by means of low energy electron diffraction (LEED). As charging and electron beam stimulated desorption of alkali halides are severe problems that prevent the use of conventional LEED systems, an MCP-LEED was employed which enables operation at low beam currents in the pA and nA regime. Such, the electron dose could be reduced to about 3 electrons per unit cell during acquisition of a complete sequence. For primary currents in the range of 5 nA, sharp diffraction patterns of (1x1) symmetry were measured, in the temperature range between 20 and 295 K. Under these conditions, neither charging nor electron induced surface damage were observed. From the sequence of diffraction patterns measured in the interval between about 60 and 300eV, intensity versus electron energy curves (I(V)curves) were obtained for several diffraction peaks (black lines), and analysed with the tensor LEED approach (dotted red curves). The distance between first and second layer of the NaCl was found to be contracted by 1.4% of the bulk values, whereas on the KCl the spacing is identical to the bulk values.



*Data courtesy of: J. Vogt and H. Weiss, Institut für Physikalische Chemie und Elektrochemie der Universität Hannover, Germany; Chemisches Institut der Otto-von-Guericke-Universität, Magdeburg, Germany
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This result has been obtained with : **OMICRON MCP LEED**