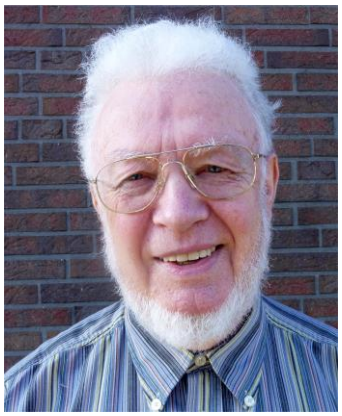
Speaker of Session 11

NANOMECHANICS



Prof. Dr. Gerd Kaupp reached his PhD in chemistry from the University of Würzburg in 1964. After postdoctoral years in Ames Iowa, Lausanne Switzerland, and Freiburg Germany he habilitated in organic chemistry and was appointed assistant, and later associate professorship. In 1982 he was appointed full professor in chemistry at the University of Oldenburg Germany. He was visiting professor at the Universities of Alexandria Egypt, Nuevo Leon Mexico, and Mansoura Egypt and served on the Editorial Bord of J. Phys. Org. Chem. and Int. J. Photoenergy. His research interests are kinetics; dyes; new synthetic methods; heterocyclic chemistry; photochemistry; electrochemistry; solid-state chemistry; interactive publication of 3-D data; gas-solid reactions; solid-solid reactions; waste-free benign synthesis and production; reactive milling; atomic force microscopy AFM; apertureless scanning near-field optical microscopy SNOM; nanoscratching; nanoindentation; 3-D-optical microscopy; biological materials; bionics. These projects were funded by Fonds der Chemischen Industrie, Deutsche Forschungsgemeimschaft DFG, German Ministry for Research and Education/Technology BMBF/BMFT, Deutscher Akademischer Austauschdienst DAAD, Alexander von Humboldt Foundation, INTAS, Brussels, and by Industrial Cooperation. After his retirement he is consulting and continues unfunded private research especially in highest resolving (< 10 nm since 1995) apertureless SNOM for reflection, fluorescence, Raman emission, and light absorption on test- and natural-surfaces, all without changing the nano-objects by chemical reaction with fluorescence dyes as in much less resolving STED. Equally important are his unexpected present applications of the quantitative analysis of nano-, micro-, and macro-indentation loading curves without fitting or simulations for unbiased physical properties of all kinds of hard and soft materials, which is particularly important for the compatibility of different materials at for example medical implants, turbines, airplanes, etc.