

A total analysis of a Kentucky Coal; ^1H by VCT CRAMPS; ^{13}C by CPMAS NMR minor constituents by spectroscopy using an inductively coupled plasma

Bernard C. Gerstein
Iowa State University, USA

Residual saturated solution in aspirin is detected quantitatively and qualitatively utilizing Variable Contact Time Combined Rotation and Multiple Pulse (VCT CRAMPS) NMR of protons¹. Concentrations of residual solutions, occluded during crystallization from solution, can be detected to better than 0.01 mol %. Samples from the same newly-opened bottle exhibit quite different finger prints for the occluded mobile phase. Specifically, the NMR signal of the saturated solutions are broadened relative to the NMR of aspirin in non-saturated solution. Because reactions in solution are much more rapid than those in solids, the amounts of saturated solution determine the lifetimes of drugs on the shelf.

Biography

Bernard C. Gerstein received his Ph.D. from Iowa State University, and is Professor Emeritus at present. He has published two books (Rudimentary Thermodynamics, with Franzen, and Transient Techniques in NMR of Solids; an Introduction to the Theory and Practice, with C.R. Dybowski) and about 160 papers in the refereed Literature.

BernieGerstein@aol.com