

# Two and Three Dimensional Nuclear Quadrupole Resonance in the Investigation of Structure and Bonding

Ming-Yuan Liao<sup>a</sup>, Raju Subramanian<sup>b</sup>, Rachel L. Yung, and Gerard S. Harbison

Department of Chemistry, Hamilton Hall, 508, University of Nebraska at Lincoln,  
Lincoln, NE 68588-0304, USA

<sup>a</sup> Current address: Department of Applied Chemistry, National Chi Nan University,  
Puli, Taiwan, Republic of China

<sup>b</sup> Current address: Beckman Institute for Advanced Science and Technology,  
University of Illinois at Urbana-Champaign, Urbana, IL 61801, USA

Reprint requests to Prof. G. S. H.; E-mail: harbison@unlinfo.unl.edu

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A variety of two dimensional two- and three-dimensional NQR experiments are reviewed, showing their application to the determination of field gradients for important sites in peptides and proteins, for assigning connected transitions of nuclei with spin  $\geq 5/2$ , and for determining hexadecapolar coupling constants. The quadrupole coupling tensor for  $^{63}\text{Cu}$  in the active site of a protein, bovine erythrocyte (Cu, Zn) superoxide dismutase, has been measured and is compared with the results of *ab initio* calculations.