

Abstract Submitted  
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**Low-lying Level Structure of  $^{150}\text{Nd}$** <sup>1</sup> A. CHAKRABORTY, F.M. PRADOS-ESTÉVEZ, S.W. YATES, Depts. of Physics & Astronomy and Chemistry, University of Kentucky, USA, S.N. CHOUDRY, B.P. CRIDER, A. KUMAR, M.T. MCELLISTREM, S. MUKHOPADHYAY, J.N. ORCE, Dept. of Physics and Astronomy, University of Kentucky, USA, M.G. MYNK, E.E. PETERS, Dept. of Chemistry, University of Kentucky, USA, P.E. GARRETT, Dept. of Physics, University of Guelph, Canada, W.D. KULP, J.L. WOOD, School of Physics, Georgia Institute of Technology, USA — To address the issue of whether the  $^{150}\text{Nd}$  nucleus represents an example of a phase transition in the shape degree of freedom or a complex example of shape coexistence, its level structure, up to about 2 MeV excitation and  $6\hbar$ , has been explored via the  $(n, n'\gamma)$  reaction at the University of Kentucky accelerator facility. Level lifetimes, in the sub-picosecond regime, were extracted with a Doppler-shift attenuation analysis. A significant extension of the level scheme was possible, and the observed low-lying level structure of  $^{150}\text{Nd}$  indicates a close resemblance to its neighboring  $^{152}\text{Sm}$  isotone. Results from the ongoing analysis will be presented.

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Anagha Chakraborty  
Department of Chemistry, 125 Chemistry - Physics Building,  
University of Kentucky, Lexington, Kentucky 40506-0055, USA

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