

Organic Scintillator detector (CsI) design for Neutrino detection

Md Nurul Haque*

Project Timeline: Spring 2023

**Instructor: Dr. Jing Liu

*Department of Physics, South Dakota School of Mines and Technology, SD, USA

**Department of Physics, University of South Dakota, SD, USA

*Email: mdnurul.haque@mines.sdsmt.edu

Course No : PHYS 733

I. INTRODUCTION

II. OVERVIEW OF NEUTRINO INTERACTIONS

III. EVENT RATE OF CEVNS IN A 10 kg CSI AT SNS

IV. DESIGN OF THE DETECTOR SYSTEM

A. Muon Veto

B. Gamma Shielding

C. Neutron Shielding

D. Internal Contamination

V. CONCLUSION