

CHAE Kyung Yuk

Assistant Professor
Department of Physics



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Key Words Nuclear Physics, Astrophysics, Experiment, Nuclear Reactions

Research Area I am primarily interested in the study of astrophysically-important nuclei and nuclear reactions using radioactive heavy ion beams. More specifically, significant fraction of my research has focused on the measurement of charged-particle induced reactions relevant to nucleosynthesis in explosive stars such as novae, X-ray bursts, and supernovae. Most of my research have been carried out at the Holifield Radioactive Ion Beam Facility of the Oak Ridge National Laboratory, USA. Significant amount of effort is also made to develop target and detector systems for the RAON, the future facility currently underbuilt in Korea.

Education

- 2006 PhD University of Tennessee at Knoxville, USA
- MSc N/A
- 2000 BSc Sogang University, Korea

Experience

- Mar. 2012 - present Assistant Professor, Sungkyunkwan University
- Jan. 2011 – Dec. 2012 Research Scientist, Oak Ridge National Laboratory, USA
- Sep. 2009 – Dec. 2010 Postdoctoral Research Associate, Oak Ridge National Laboratory, USA
- Jan. 2007 – Aug. 2009 Postdoctoral Research Associate, University of Tennessee at Knoxville

Position

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Selected Publication

- “The magic nature of ^{132}Sn explored through the single-particle states of ^{133}Sn ”, *Nature* 465, 454 (2010).
- “First experimental constraints on the interference of $3/2+$ resonances in the $^{18}\text{F}(p,a)^{15}\text{O}$ reaction”, *Phys. Rev. C* 74, 012801(R) (2006).
- “Constraint of the astrophysical $^{26}\text{Al}(p,g)^{27}\text{Si}$ destruction rate at stellar temperatures”, *Phys. Rev. Lett.* 114, 212501 (2015).
- “ β -decay Half-lives of 110 Neutron-Rich Nuclei across the $N=82$ Shell Gap”, *Phys. Rev. Lett.* 114, 192501 (2015).
- “Monopole-Driven Shell Evolution below the Doubly Magic Nucleus ^{132}Sn Explored with the Long-Lived Isomer in ^{126}Pd ”, *Phys. Rev. Lett.* 113, 042502 (2014).
- “ $1p_{3/2}$ Proton-Hole State in ^{132}Sn and the Shell Structure Along $N=82$ ”, *Phys. Rev. Lett.* 112, 132501 (2014).
- “Isomers in ^{128}Pd and ^{126}Pd ”, *Phys. Rev. Lett.* 111, 152 501 (2013).
- “Neutron single particle structure in ^{131}Sn and direct neutron capture cross sections”, *Phys. Rev. Lett.* 109, 172501 (2012).

Others

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