

UNIVERSITY OF NOTRE DAME  
DEPARTMENT OF PHYSICS

# SPECIAL NUCLEAR SEMINAR

Friday, May 26

## *Chemistry along the nuclear chart*

Prof. Julia Even

KVI-CART, University of Groningen, The Netherlands

Studies of exotic nuclei and elements benefit from an efficient combination of various experimental techniques. In my talk, I will present recent experiments and future plans which benefit from the combination of nuclear physics, atomic physics and chemistry.

This combination is e.g. often used in heavy elements research. It allowed the synthesis of a transactinide carbonyl complex, which marks a milestone in chemical research on the heaviest elements [1] and opens new possibilities for background-free nuclear decay spectroscopy along the closed neutron sub-shell  $N=162$  [2].

Furthermore, I will present recent laser spectroscopy studies on nobelium, which allowed the determination of the first ionization potential of nobelium [3].

Last, but not least, I will discuss the ongoing developments and plans of our team in Groningen to explore nuclei along the  $N=Z$  line using a combination of chemical techniques and high-precision mass measurements.

[1] J. Even et al., Science 345 (2014), 1491.

[2] J. Even et al. J Radioanal Nucl Chem 303 (2015), 2457.

[3] M. Laatiaoui et al.; Nature 538 (2016), 495.

**4 pm – 5 pm**

**Nuclear Science  
Laboratory**

**124 Nieuwland  
Science Hall**

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All interested  
persons are  
cordially invited  
to attend

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Refreshments will be  
served prior to the  
seminar in room 124