



EDUCATION & OPPORTUNITY IN WASTE MANAGEMENT  
A NON-PROFIT ORGANIZATION



**WWM** 2015  
Symposia

# Young Generation Nuclear Professional Panel

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Postdoctoral Fellow



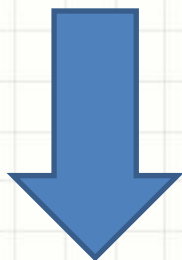
**FIU**

Applied Research  
Center

FLORIDA INTERNATIONAL UNIVERSITY

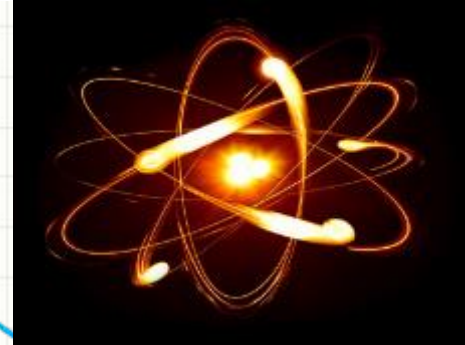
# How it all started..

- 1 year of research (Senior year) is obligatory.



Every student chooses a lab where he does research full time and he presents his experimental findings in a form of a thesis

- Chemistry has too many disciplines !

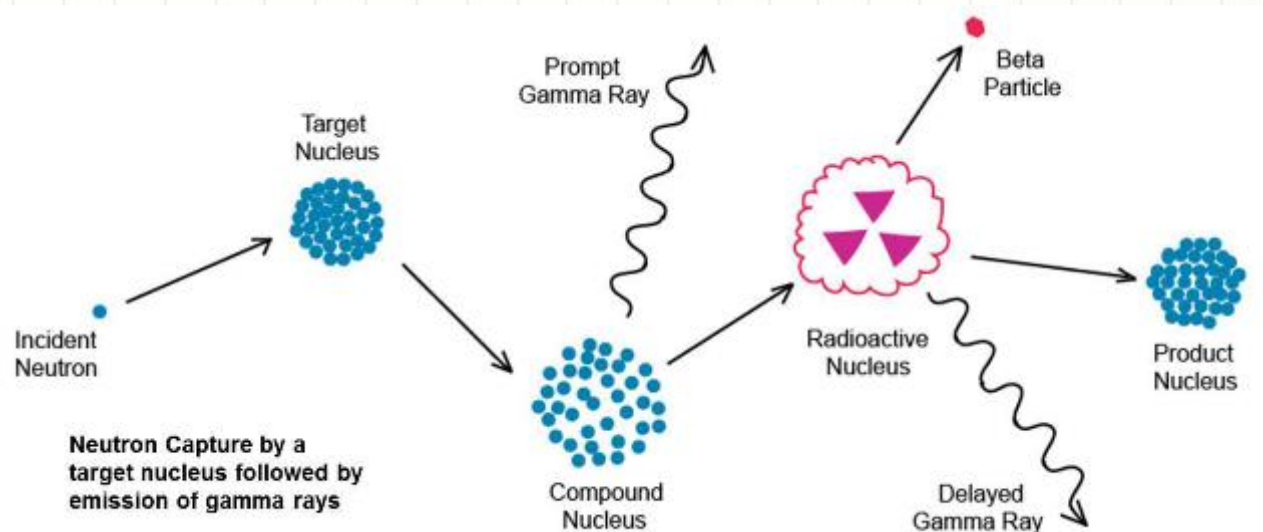


# Radiochemistry it is !

- I have always been fascinated by the vast applications of radiochemistry
- It is a rather “exotic” discipline of chemistry, which applies principles and uses techniques that are very different than “mainstream” chemistry disciplines

# Undergraduate project

The use of Instrumental Neutron activation Analysis (INAA) for the elemental determination in foodstuff and trace element determination in bottled water ( $\gamma$ -ray spectrometry)



# Determination of Radon and naturally occurring $\gamma$ -emitting radionuclides in thermal springs

Funded by: Greek Atomic Energy Commission



# Determination of naturally occurring radionuclides in soil, sediments and construction materials



**IAEA**

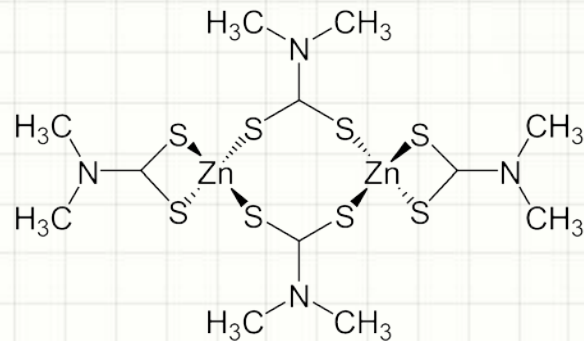
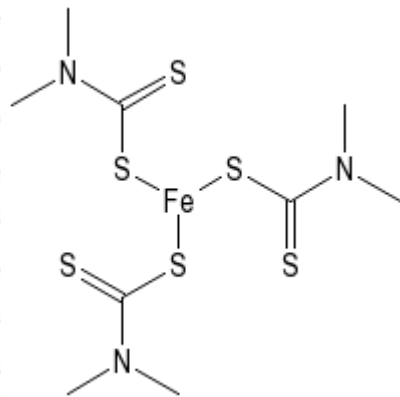
International Atomic Energy Agency

Project funded by:  
International Atomic Energy  
Agency



# Determination of residues of persistent organo-metallic herbicides in aquatic systems

Traces of Ferbam and Ziram (Fe- and Zn- based organo-metallic herbicides respectively) were determined using neutron activation analysis of the main metal of the molecule and subsequent determination in trace levels





ΠΑΝΕΠΙΣΤΗΜΙΟ  
ΠΑΤΡΩΝ  
UNIVERSITY OF PATRAS

- Interaction between U(VI) and trivalent actinides in the aqueous phase and:  
Common microbial communities  
Natural substrates high in organic matter
- Liquid waste management containing actinides and lanthanides



# Florida International University

- Monitoring of radionuclide behavior in soil, groundwater and vadose zone
- Physicochemical and other environmental factors (eg. biotic factors) affecting contaminants fate and transport
- Remedial actions for soil and groundwater at Hanford and Savannah River Site (DOE-EM)



# “Journey” in the Nuclear Field, so far..

1

- Environmental Radiochemistry

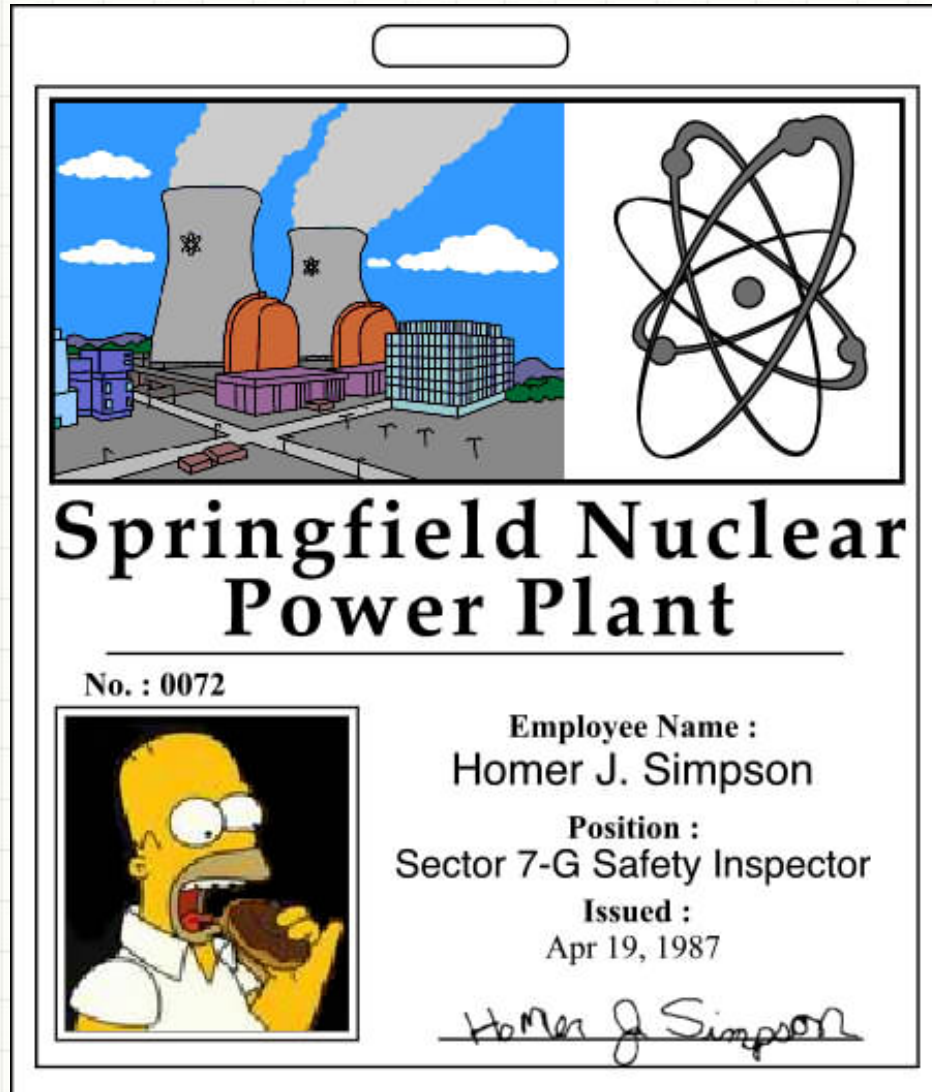
2

- Actinide Chemistry

3

- Waste Management

# Join the Radiochemistry / Nuclear Field!



An identification card for the Springfield Nuclear Power Plant. The card features a header with a photo of the plant and a Bohr-style atomic model. Below the header, the name 'Springfield Nuclear Power Plant' is printed in a large, bold, serif font. Underneath, the employee number 'No. : 0072' is listed. To the left is a small portrait of Homer Simpson eating a donut. To the right, the employee's name 'Homer J. Simpson', position 'Sector 7-G Safety Inspector', and issue date 'Apr 19, 1987' are printed. At the bottom right, there is a handwritten signature of Homer J. Simpson.

**Springfield Nuclear Power Plant**

No. : 0072

**Employee Name :**  
Homer J. Simpson

**Position :**  
Sector 7-G Safety Inspector

**Issued :**  
Apr 19, 1987

*Homer J. Simpson*

# Why?

It is an interesting field with a wide variety of applications in diverse fields and aspects of the modern society eg. energy production, environmental and geochemical monitoring through the use of tracers, medicine etc.

And it is already a part of our society !



Remedial actions & Waste Management

# THANK YOU



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A collage of scientific and educational imagery. It includes chemical structures, a globe, a person writing on a whiteboard, and a network diagram. The text 'EDUCATION &amp; OPPORTUNITY IN WASTE MANAGEMENT' and 'A NON-PROFIT ORGANIZATION' is overlaid on the collage. The logo for 'WWM 2015 Symposia' is also present, featuring an atomic symbol and the text 'WWM 2015 Symposia'.

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