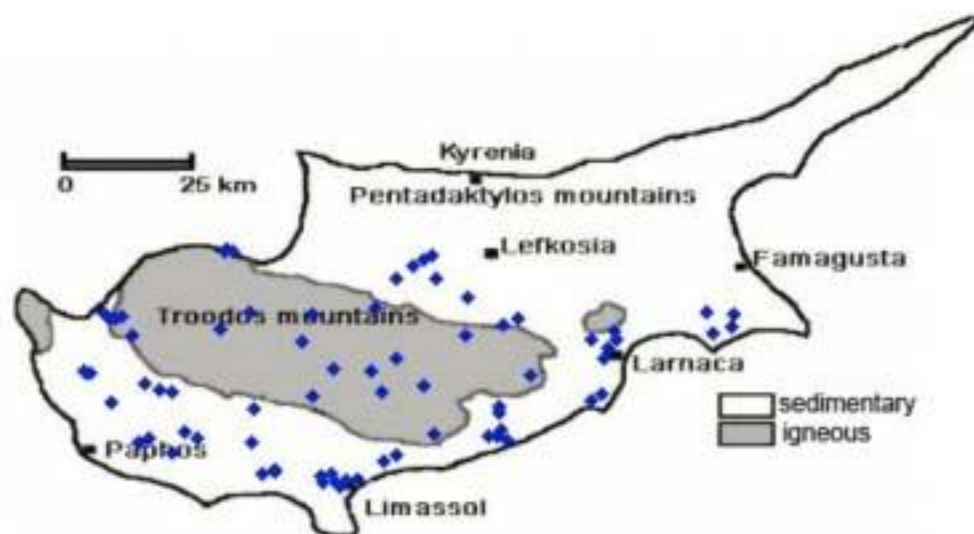




Μελέτες Ραδιενέργειας Περιβάλλοντος στην Κύπρο



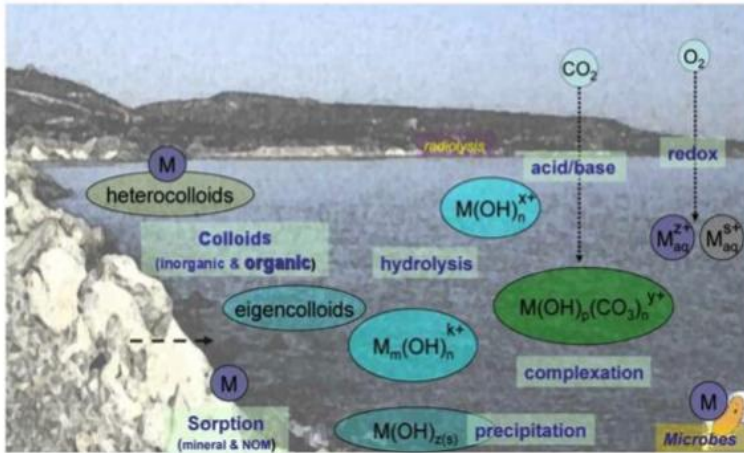
Δρ. Ιωάννης Πασχαλίδης

Ερευνητικές Δραστηριότητες Εργαστηρίου Ραδιοαναλυτικής & Περιβαλλοντικής Χημείας

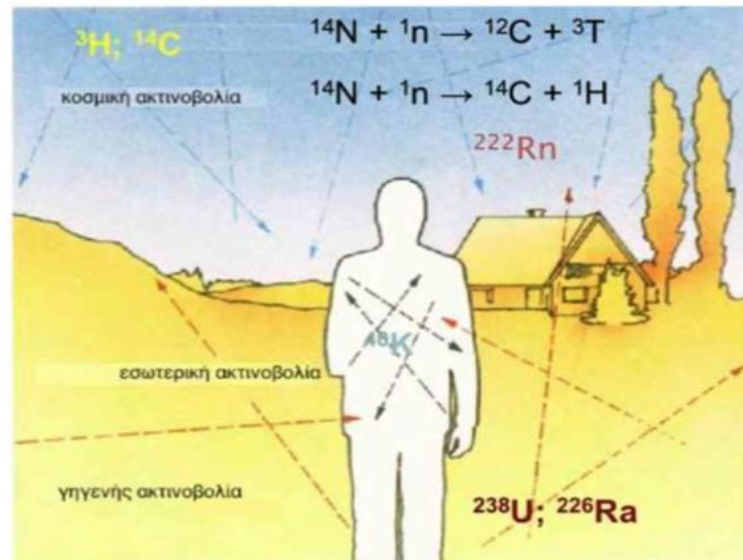
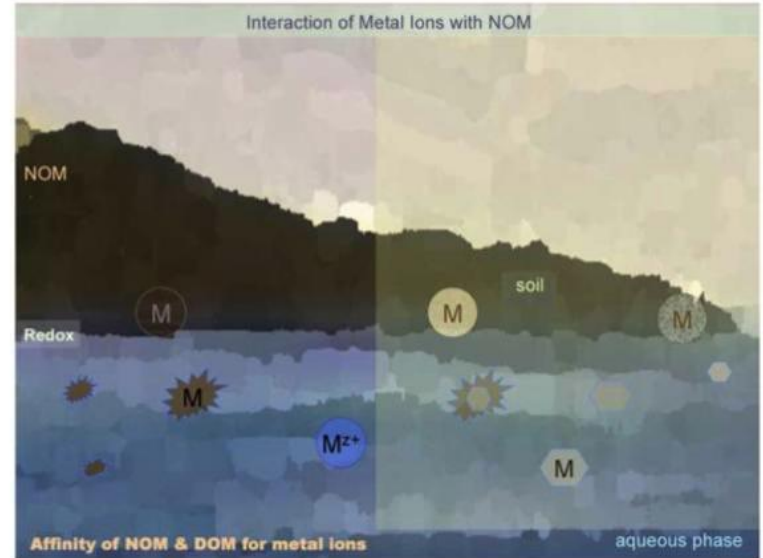
Aquatic Chemistry of (Radio)toxic Metal Ions

Chemical Behaviour and Migration in the Geosphere

Water Treatment Technologies



Interaction of Metal Ions with NOM



Μελέτες Ραδιενέργειας Περιβάλλοντος στην Κύπρο

Γενικό Νοσοκομείο Λευκωσίας

Τμήμα Επιθεώρησης Εργασίας

Κρατικό Γενικό Χημείο & Τμήμα Γεωλογικής Επισκόπησης



Πανεπιστήμιο Κύπρου

Εργαστήριο Πυρηνικής Φυσικής &



Εργαστήριο Ραδιαναλυτικής & Περιβαλλοντικής Χημείας

Radiometric Activities

Radioanalytical Chemistry Group

γ -Dosimetry

*Indoor & Outdoor
Radiation Doses in Cy
Granite tiling*

Radon Measurements

by

LSC

Rn-Monitor

**Airborne and Aquatic
Radon in Cy**

**Local & Seasonal
Rn-Variations**

Rn emanation rates

alpha-Radiometry

by

LSC

total α/β

α -spectroscopy

U in Cypriot Waters

**Local & Seasonal
U levels in Waters**

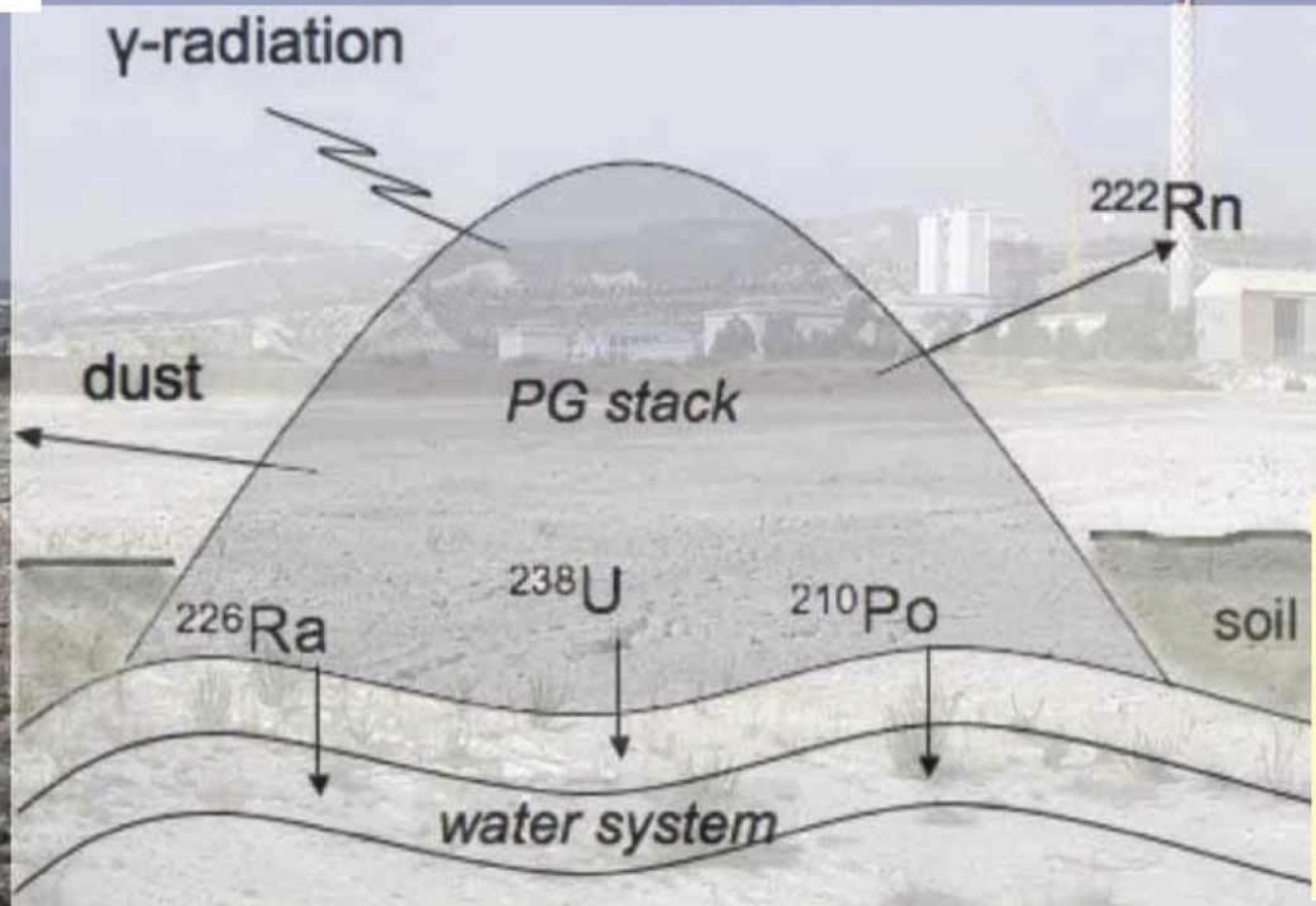
An in Aqueous Solutions



Environmental Impact Assessment - Phosphogypsum in Cyprus

Περιβαλλοντικές Επιπτώσεις Φωσφογύψου

~ 50 000 sqm
~ 320 000 tons



[Radionuclides]

[^{238}U]

320 - 20 Bq/kg,

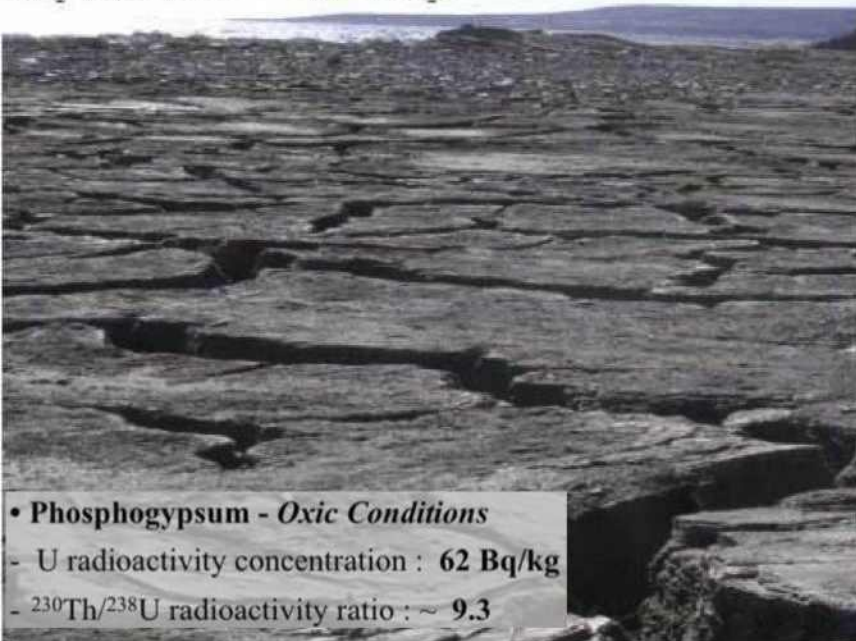
[^{226}Ra]

1050 - 430 Bq/kg

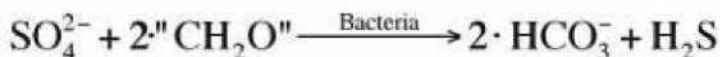
[^{232}Th]

62 - 4 Bq/kg

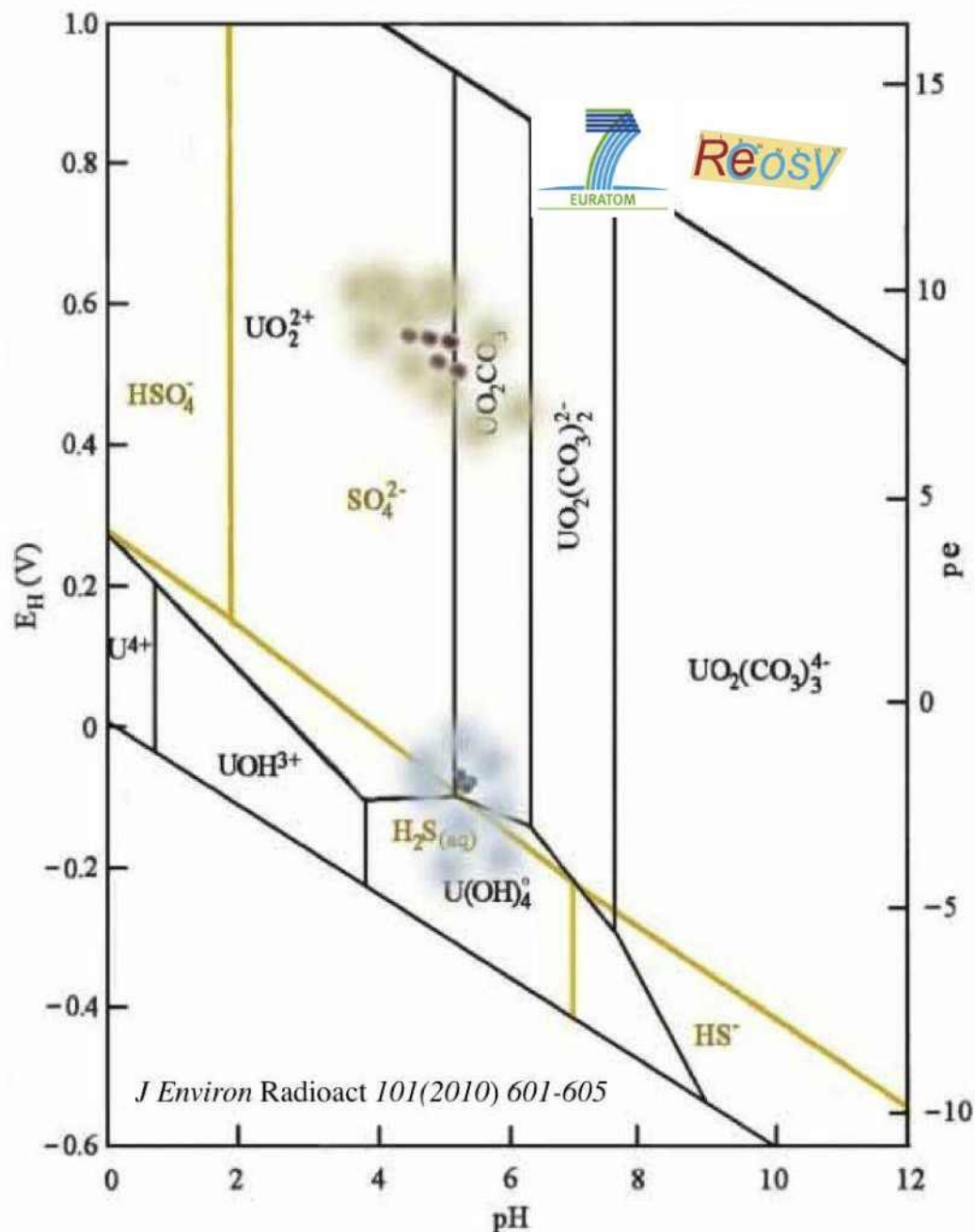
Chemistry under suboxic stack conditions



- **Phosphogypsum - Oxic Conditions**
- U radioactivity concentration : 62 Bq/kg
- $^{230}\text{Th}/^{238}\text{U}$ radioactivity ratio : ~ 9.3



- **Phosphogypsum - Suboxic Conditions**
- U radioactivity concentration : 149 Bq/kg
- $^{230}\text{Th}/^{238}\text{U}$ radioactivity ratio : ~ 4.2



Σχετικές Δημοσιεύσεις

- * Emanation Studies of Radium Containing Materials by a Simple Radon Monitoring System, *J. Radioanalytical and Nuclear Chemistry*, (2013) 298:673–677
- * Uranium Levels in Cypriot Groundwater Samples Determined by ICP-MS and α -Spectroscopy, *J. Environmental Radioactivity*, 116 (2013) 187-192
- * Selective Separation of Actinyl(V, VI) Cations from Aqueous Solutions by Chelex-100, *Radiochimica Acta*, 100 (2012) 439-443
- * A simplified determination of uranium in phosphate rock and phosphogypsum by alpha-spectroscopy after its separation by liquid-extraction, *J. Radioanalytical and Nuclear Chemistry*, 291 (2012) 865–867
- * Uranium Analysis in Cypriot Groundwaters by Total Alpha-Radiometry and Alpha-Spectroscopy, *Radiation Measurements* 46 (2011) 626–630.
- * Seasonal Variation of the Alpha-Radioactivity Concentration in Natural Water Systems in Cyprus, *Radiation Measurements*, 46 (2011) 145-148
- * Redox Chemistry of Sulphate and Uranium in a Phosphogypsum Tailings Dump, *J. Environmental Radioactivity*, 101 (2010) 601–605.
- * Alpha spectroscopic analysis of actinides (Th, U and Pu) after separation from aqueous solutions by cation-exchange and liquid extraction, *J. Radioanalytical and Nuclear Chemistry*, (2010) 284:547–551.
- * Lithological and Seasonal Variations in Radon Concentrations in Cypriot Groundwaters, *J. Radioanalytical and Nuclear Chemistry*, (2010) 284:553–556.
- * Experimental and Theoretical Studies on Physicochemical Parameters Affecting the Solubility of Phosphogypsum, *J. Environmental Radioactivity*, 100 (2009) 854-857.
- * Determination of Aquatic Radon by Liquid Scintillation Counting and Airborne Radon Monitoring System, *Radiation Measurements*, 43 (2008) 1463-1466.
- * Alpha radiometry of uranium in surface and ground waters by liquid scintillation counting after separation of the radionuclide by cation exchange, *Radiation Measurements*, 43 (2008) 1294 - 1298.
- * Uranium Chemistry in Stack Solutions and Leachates of Phosphogypsum Disposed at a Coastal Area in Cyprus, *J. Environmental Radioactivity*, 99 (2008) 359-366.
- * Radon emanation from phosphogypsum and related mineral samples in Cyprus, *Radiation Measurements*, 42 (2007) 1583-1585.
- * Increased radiation exposure by granite used as natural tiling rock in Cypriot houses, *Radiation Measurements*, 42 (2007) 446-448.
- * Alpha radiometry of seawater by liquid scintillation counting, *J. Radioanalytical and Nuclear Chemistry*, 270 (2006) 593- 596
- * A two-sample model for the comparison of radiation doses, *Chemometrics and Intelligent Laboratory Systems*, 79 (2005) 1– 9
- * Radiometric Determination of Uranium in Natural Waters after Enrichment and Separation by Cation-Exchange and Extraction Techniques, *J. Radioanalytical and Nuclear Chemistry* 260 (2004) 439-442
- Radon Levels in Cyprus *J. of Environmental Radioactivity* 68 (2003) 269-277

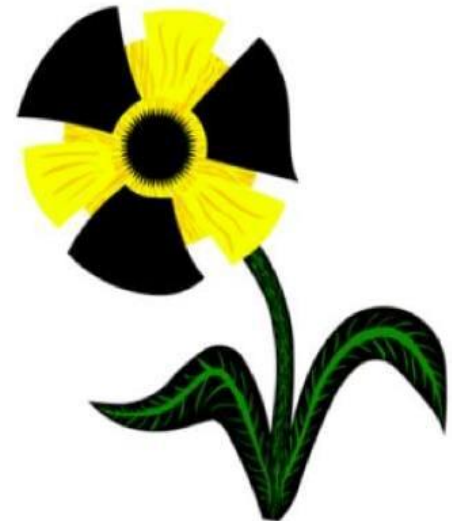
Ευχαριστίες

Πανεπιστήμιο Κύπρου – Τμήμα Χημείας

ΙΠΕ – Κύπρος

EUROATOM

Φοιτητές & Συνεργάτες



Πανεπιστήμιο Κύπρου
Τμήμα Χημείας

Εργαστήριο Ραδιοαναλυτικής
& Περιβαλλοντικής Χημείας

