CINCH

Cooperation in Education and Training in Nuclear- and Radiochemistry in Europe

The Research Council of Norway

EURATOM

Distance Learning Tools

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The CINCH collaboration

NRC9, Helsinki, 1st September 2016

Our Digital Age

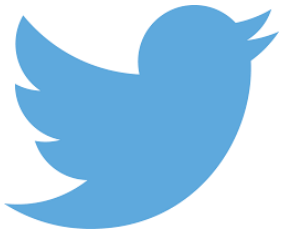
Modern digital technology offer a long range of tools to improve/change our life..

.. this includes how we teach!

Modern Teaching

.. needs digital content and methods:

- ***Internet*** to find information..
- ***Computers and on-line applications*** to do things “the modern way”..
- ***Digital “social networks”*** to communicate..



Our Digital Age

Good teaching is *not guaranteed* by applying E-learning tools..

.. we have to do it based on good pedagogical principles and methods!

In the end, our students' ***learning outcome*** defines the teaching quality!

CINCH

Part of the CINCH project has been to ***develop modern e-learning tools***.

CINCH E-learning tools

- Wiki for sharing teaching material
- Stand alone e-learning modules
- Remote controlled lab exercises
- Computing in Science Education
- Simulations
- E-book on NRC fundamentals

NucWik — Nuclear and Radiochemistry Teaching Material Wiki

CINCH Moodle Platform

RoboLab — Remote Operated RadLab for Teaching Radiochemistry

CSE – A UiO concept

Written by Jukka Lehto

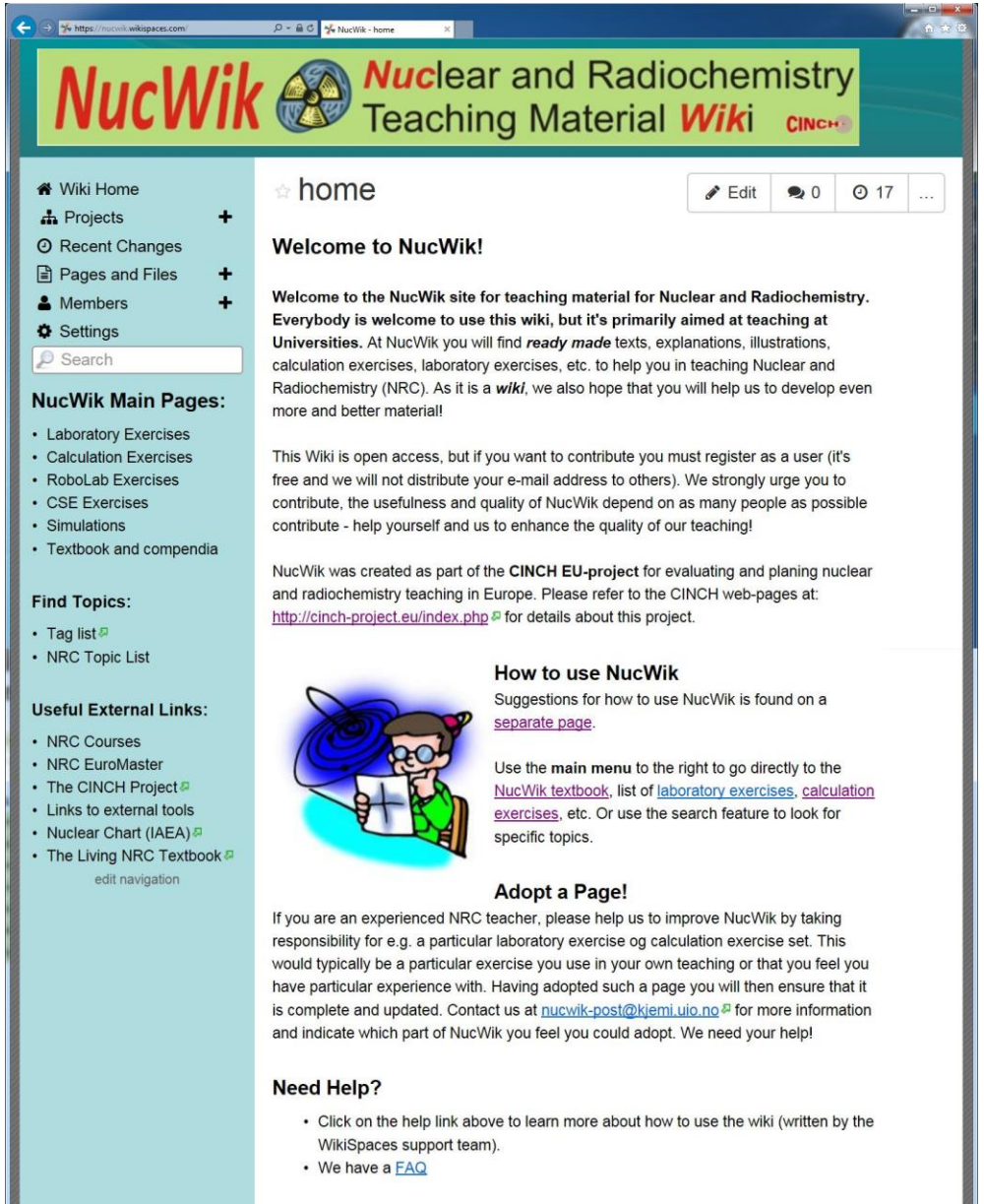
Site for Sharing *Teaching Material*

NucWik:

- No reading or downloading restrictions.
- Must register to upload material or edit content.
- It's free!

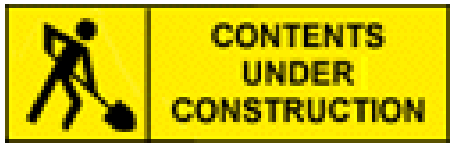
http://nucwik.wikispaces.com/

.. or just Google "NucWik"



Understand this ..

- NucWik is not a ready made, polished product in its final form.
- It is primarily a tool for active collaboration between teachers.
- You want it better? Then make it so!
- It can be used in many ways, most likely in ways not initially planned for.



It’s up to you!

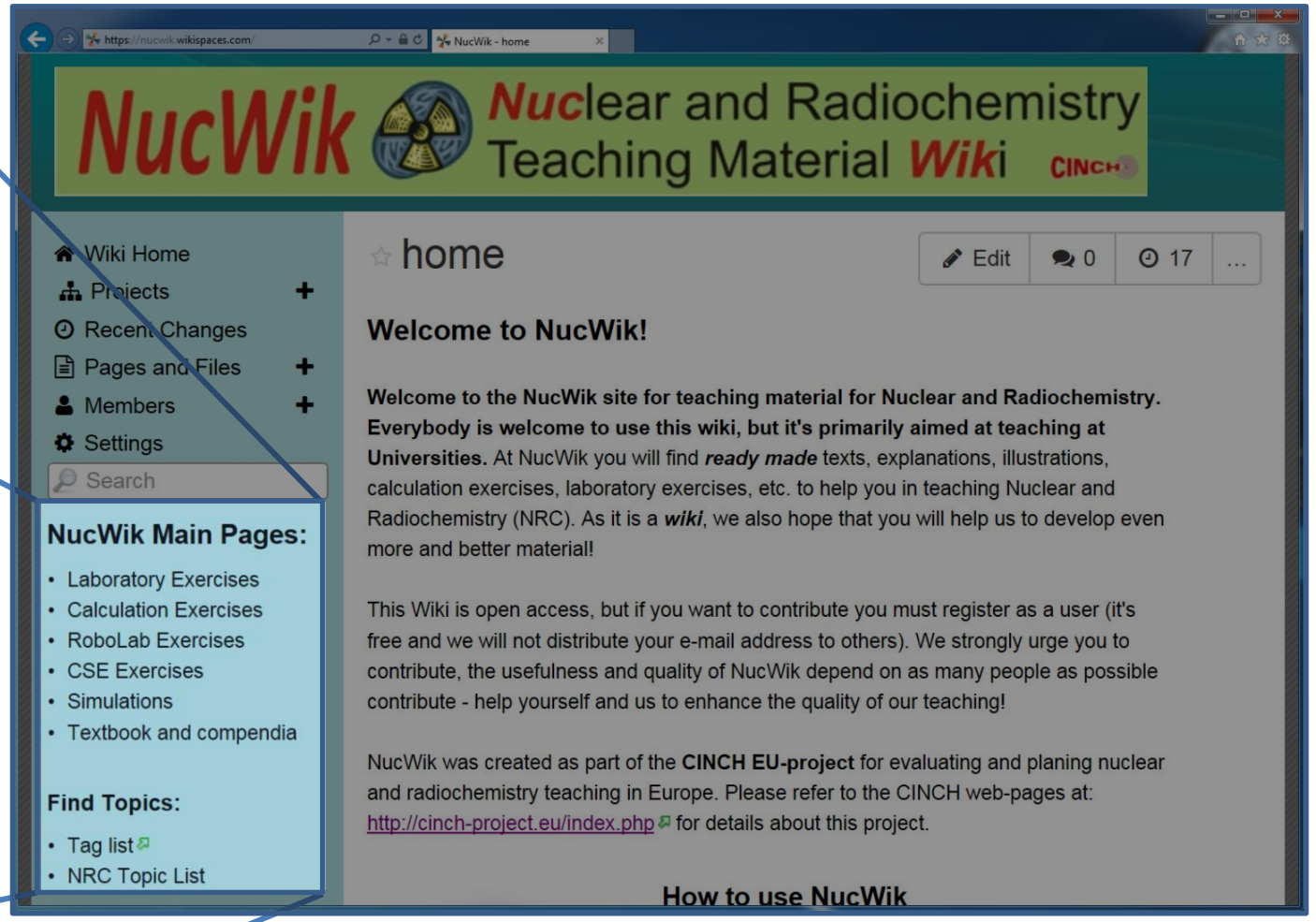
NucWik – Main Menu

NucWik Main Pages:

- Laboratory Exercises
- Calculation Exercises
- RoboLab Exercises
- CSE Exercises
- Simulations
- Textbook and compendia

Find Topics:

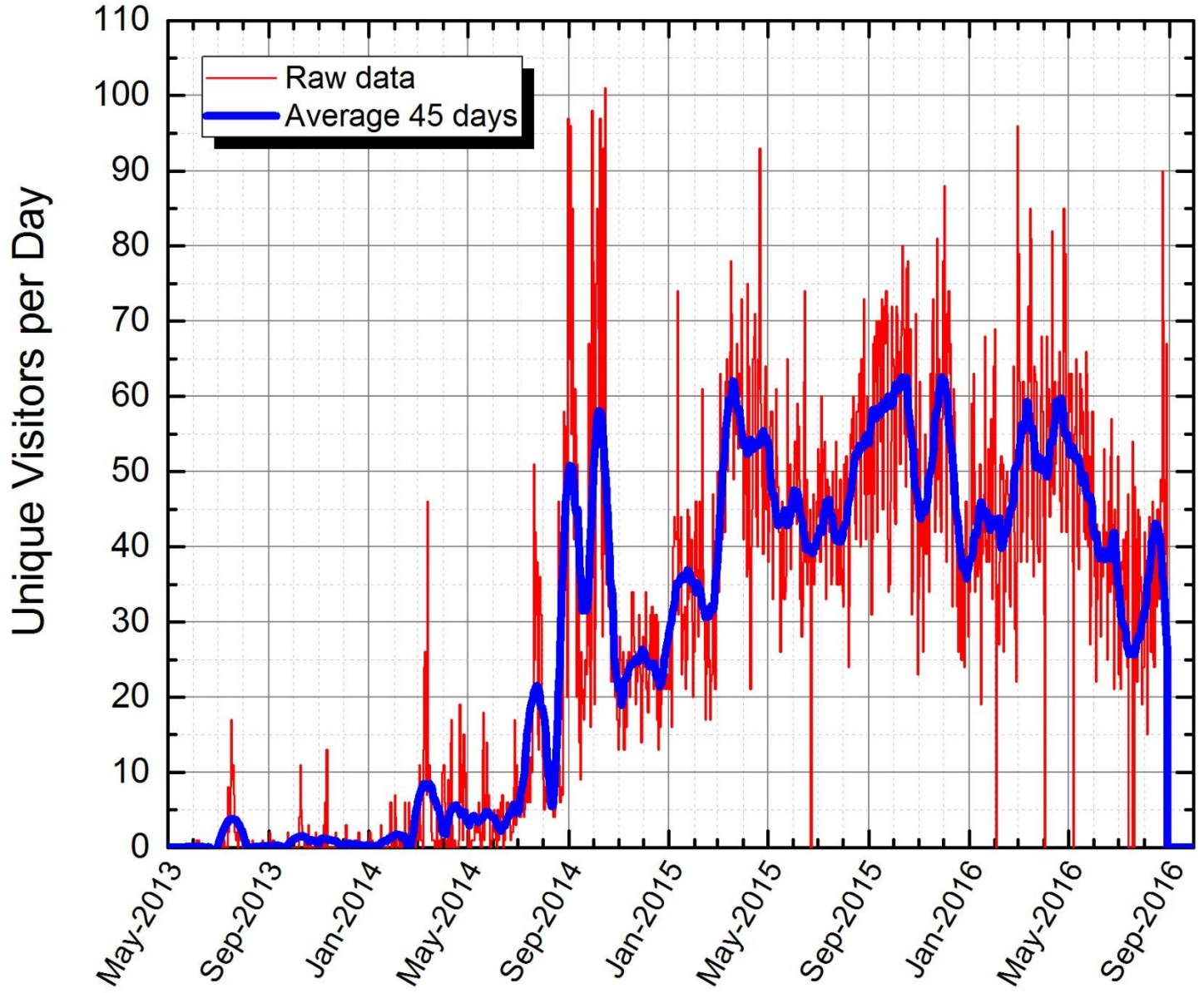
- Tag list
- NRC Topic List



NucWik - Usage

About 45 hits per day

.. about half from the US



Visitors are counted as unique IP addresses in a given day, including search engines and other crawlers.

RoboLab

Teaching Material Wiki CINCH

RoboLab Exercises

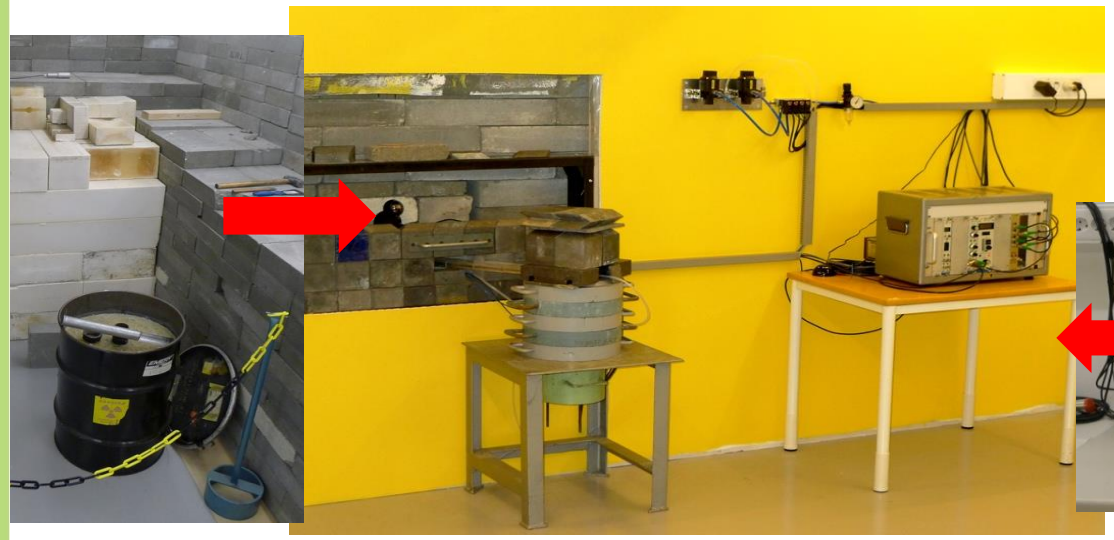
Edit | 0 | 6

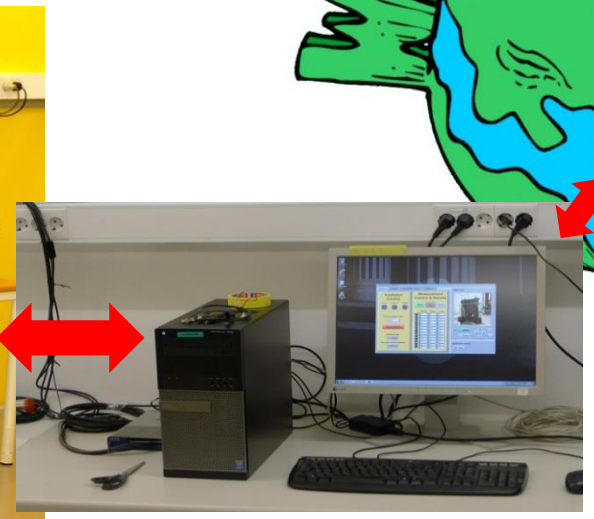
What is RoboLab?

RoboLab is remote-controlled exercises in a real radiochemistry laboratory. It allows you to perform radiochemistry experiments with real equipment in an actual laboratory without all the hassle of being trained, authorized and suited up. It's main purpose is to be used as a complementary teaching tool when teaching radiochemistry to undergraduate and graduate students at university level. This NucWik page explains teachers how to use it. It also provide information on how to build RoboLab remote controlled instruments ("virtual instruments") using LabView from National Instruments.

RoboLab Principle

RoboLab Remote Operated RadLab for Teaching Radiochemistry CINCH

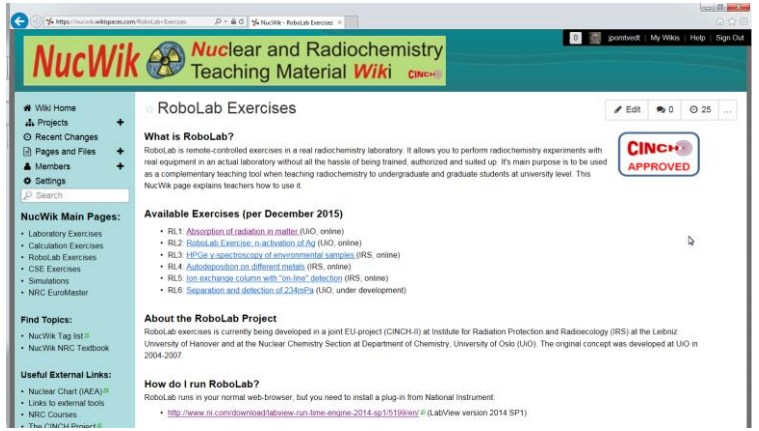




A real nuclear laboratory using radioactive material

Student using the lab through his computer

RoboLab @ NucWik



Available Exercises (per December 2015)

- RL1: Absorption of radiation in matter (UiO, online)
- RL2: RoboLab Exercise: n-activation of Ag (UiO, online)
- RL3: HPGe γ-spectroscopy of environmental samples (IRS, online)
- RL4: Autodeposition on different metals (IRS, online)
- RL5: Ion exchange column with "on-line" detection (IRS, online)
- RL6: Separation and detection of 234mPa (UiO, under development)

List is accessible from the main menu on NucWik

Acknowledgements

- RoboLab was conceived at UiO in 2002. Six RoboLab exercises have been developed under CINCH-II as a collaboration between the Nuclear Chemistry Group at the University of Oslo and the Institute for Radioecology and Radiation Protection at Leibniz University in Hannover.
- NucWik was developed by UiO as part of the CINCH projects.
- **Key CINCH RoboLab contributors: *J.P. Omtvedt (UiO), C. Walter (IRS),* S. Bister (IRS), C. Fournier (IRS), Kim-Leigh Gabay (IRS), T. Grønås (UiO), P. Hanemann (IRS), M. Icker (IRS), H.L. Lerum (UiO), J.Ø. Matsdal (UiO), W. Schulz (IRS), J.-W. Vahlbruch (IRS).**
- "Old" UiO RoboLab contributors (pre-CINCH): J.P. Omtvedt, K. Opel, F. Schulz, L. Stavsetra.
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Thank You for Your Attention!

Please explore our e-tools at NucWik!

http://nucwik.wikispaces.com/

.. or just Google "NucWik"

CINCH project site:
http://cinch-project.eu/

Want to contribute or have questions?

E-mail: j.p.omtvedt@kjemi.uio.no or nucwik-post@kjemi.uio.no

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