7th International Conference
on Education and Training
in Radiation Protection

A cross-checked database of resources, online demos, and virtual labs for radiation protection training

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Background

- The effects of the current pandemic are radically changing the way we deliver education and training
- Online teaching will continue to be expected at some level
- Emphasis will be placed on the interactive aspects of online training
- Educator-trainee interactions, as well as independent training, will be a focus area of development
- A key goal will be integrating theory lessons with “practical” laboratory sessions

EUTERP Education & training database

- http://database.euterp.eu/ provides information on:
  - E&T events (academic education, professional training courses, CPD, conferences,…)
  - Opportunities (Internships, PhD and postdoc, On-the-job training, job opportunities,…)
  - E&T providers in radiation protection in Europe.

Proposed, expanded database

- Resources for courses in radiation protection, radiation dosimetry, and nuclear measurements
- Interactive online simulations
  - Physical phenomena
  - Instrumentation
  - Laboratory activities
- Other online resources
  - Reference data and calculators
  - Realtime monitoring data
  - Freely available courses

Tasks and taskforce

- Ongoing work
  - Select online resources
  - Examine initial selection
  - Develop evaluation criteria
  - Provide first evaluation
  - Expand search
  - Develop evaluation questionnaire
  - Acquire feedback from users (students)
  - Document/share findings

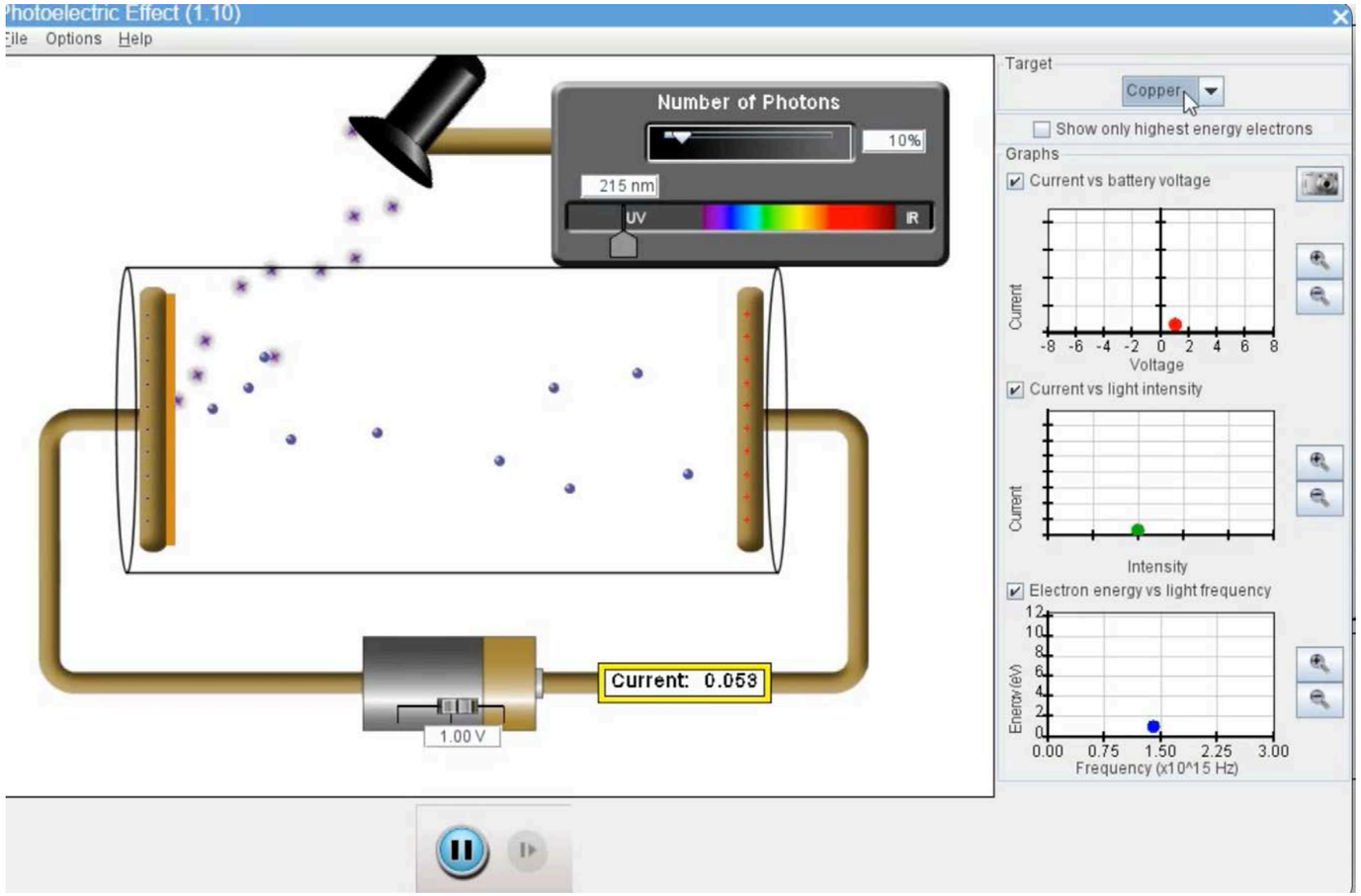
- Taskforce at collaborating institutions
  - Educators
    - Professors/Instructors
    - Teaching/research assistants
  - Undergraduate students
  - Graduate students
  - PhD students
  - Post-doc fellows

Evaluated aspects

- Target audience
- Relevance to courses
- Graphical user interface
- Documentation
- Need for instructor guidance
- Scientific soundness of simulation
- Final self-assessment

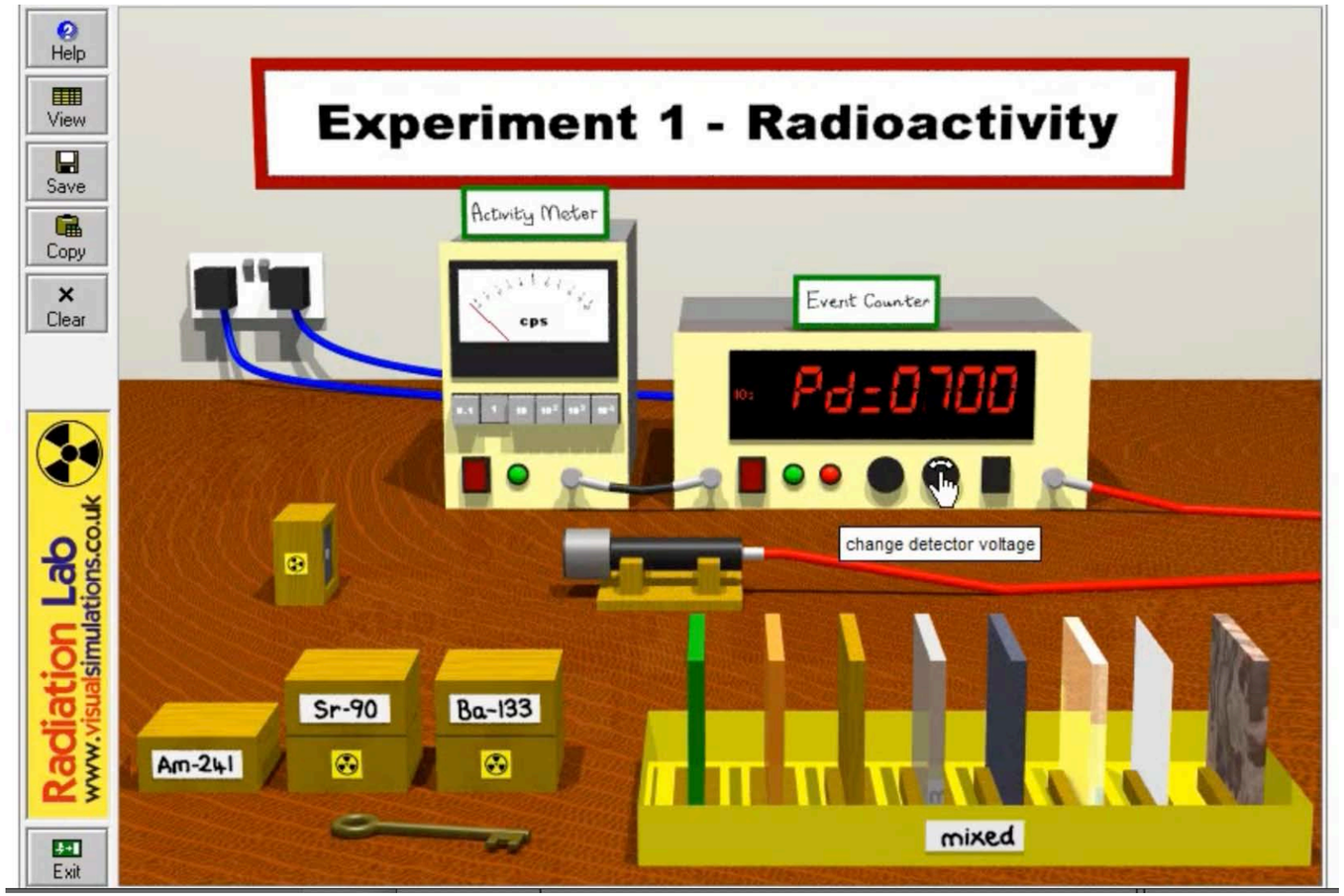
Example of entry-level resource

Please, play “Photoelectric Effect.mp4”



Example of mid-level resource

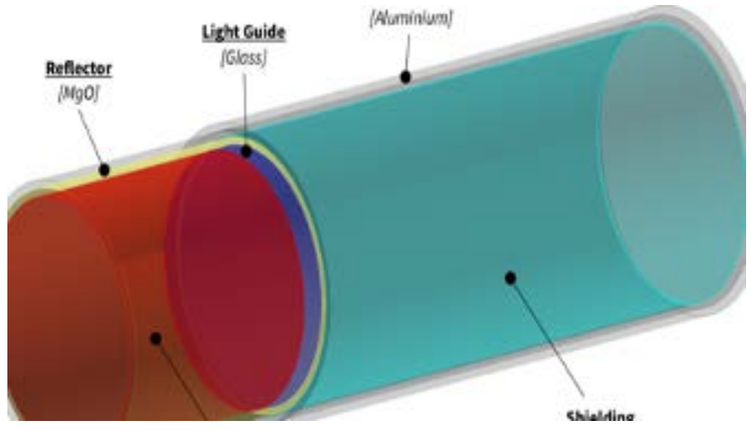
Please, play “Radiation Lab.mov”



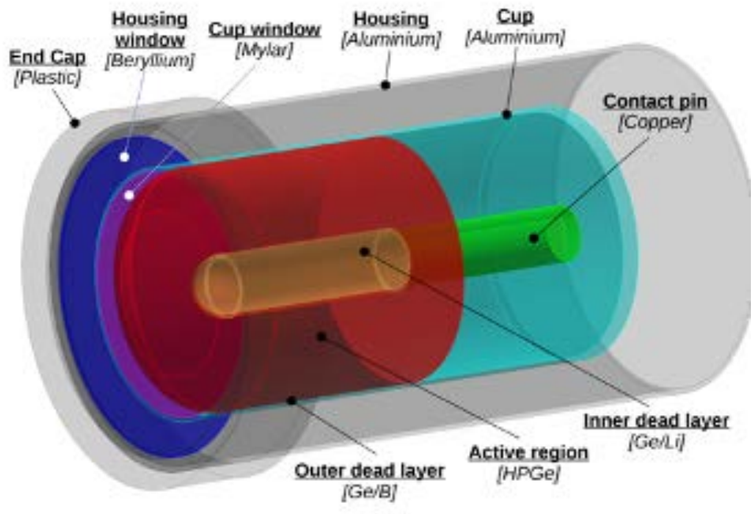
Example of advanced-level resource

Please, play “O-Lab Demo.mp4”

Primary focus on NaI and HPGe for start, but designed to be easy to add in new detectors and change a few broadening parameters



2” Coaxial Germanium (HPGe)



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Additional areas of interest

- Serious games/Scenarios such as emergency simulation/paradigm implementation
- Radiation-less training with dedicated devices or smartphone apps

Example of serious-games/scenarios

Please, play “eNotice.mp4”

Example of radiation-less detector-simulators

Please, play “GammaPix Virtual Training.mov”

Prospects

- Expand collaboration to interested parties
- Refine evaluation criteria
- Create a database of evaluated resources
- Approach site developers with feedback/suggestions
- Address needs/interests of universities, hospitals, radiation safety officers, first responders, government agencies
- Develop proposals seeking EC funding
- Connect with software houses for the development of highly realistic virtual laboratories (including 3D scenarios, augmented reality)