**G055Za/LPHYS2102: Ionizing Radiation Detection**

**2023-2024**

Students in the Master of Physics, Master en Sciences Physiques, and Master of Medical Physics registered for the courses above give a presentation in **teams of two**.

**Send** your team names and preferred 1st to 3rd choice of topic from the list below not later than Wednesday

April 3rd 2024 by e-mail to nathal.severijns@kuleuven.be, thomas.cocolios@kuleuven.be **and** eduardo.cortinagil@uclouvain.be.
Topics will be assigned on a first-come-first-serve basis.

**Task:**

Study the pages indicated below for the detector type you were given. All text books are available on Toledo and Moodle. In addition, search one or more examples where this detector was actually used in an experiment or application, and include this in your presentation.

Prepare a **presentation of at most 10 minutes**, explaining the principle and properties of the detector type and including the example(s) you found to illustrate its use in a practical situation. After every presentation

**5 to 10 minutes for discussion/questions** will be available, mainly among the group of students.

**When ?**

Your presentation will be for **ALL** students in the Master of Physics, Master en Sciences Physiques, and Master of Medical Physics that have registered for the Ionizing Radiations course (the presentations are an integral part of the course!).

Date: **Thursday April 18th, 2024, from 13 h till 16 h**

 **Thursday April 25th, 2024, from 13 h till 16 h**

**Each group should participate to at least the session in which they present their topic.**

**Evaluation:** 3 out of the total of 20 points for the course will be based on this presentation (content and format of the presentation, answering of questions, asking questions after other presentations, …).

**Topics:**

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|  |  | Knoll 4th ed | Kolanoski | Turner |
| 1 | Micropattern gas detectors  | p.195-202 | p. 214-221 |  |
| 2 | Position sensitive semiconductor detectors | p.502-510 | p.298 -323 |  |
| 3 | Cryogenic and superconducting detectors | p. 741-748 | p.704-713 |  |
| 4 | CdTe, HgI2 en CdZnTe detectors | p. 491-497p. 485-491 (bkg) | p. 363-371 |  |
| 5 | CCD-detectors | p. 502-503,p. 507-510 | p.323-327 |  |
| 6 | Thermoluminescense dosimeters | p. 751-759 |  | p.279-285 |
| 7 | Slow-neutron detectors | p. 519-523p. 532-536 | p.571-574 |  |
| 8 | Resistive Plate Chambers |  | p.196-204 |  |
| 9 | Time Projection Chambers |  | p.241-247 |  |
|  | Cerenkov Detectors |  | p.439-p465 |  |
| 11 | Pixel detectors |  | p314-p318p327-p338 |  |