Dziekan Wydziału
Matematyczno-Przyrodniczego
i Dyrektor Instytut Fizyki
Akademii Jana Długosza
w Częstochowie zapraszają
23 maja 2013 r. o godz. 13^{00}
do Audytorium – sala 1023
Akademii Jana Długosza
w Częstochowie
Al. Armii Krajowej 13/15
na

Seminarium Wydziału Matematyczno-Przyrodniczego

na którym

Prof. Jungil Lee

Korea Atomic Energy Research Institute Yuseong Daejeon, Korea

przedstawi wykład:

Current Research Activities of Health Physics Team of Korea Atomic Energy Research Institute

Korea Atomic Energy Research Institute (KAERI) is the national research institute of Korea for the application of nuclear energy for the welfare of the mankind. The institute has multipurpose and multidimensional research and development programs to promote the generation of nuclear energy in the safest way and to cater to the need of radiation sources used in medical, industrial and agriculture applications. Off late, the institute has emerged as a leading global player in providing research reactors and medium size power reactors to other countries and undertaking frontline research projects. Obviously, for such a gigantic and ambitious program, the emphasis on research on safety evaluation of equipment and installations, environmental assessment and protection, standardization of radiation measurements and radiological protection of workers and public at large becomes of paramount importance. The activities of Health Physics Team of KAERI are focusing on not only radiation protection and safety for the radiation workers but also on the associated research and development projects.
The team has constructed several reference radiation fields of gamma rays, x-rays, beta and neutron radiation sources and provides a service of calibrating more than 3,500 radiation measuring devices per year in addition to ensuring the safety and security of radiation sources, and internal and external dosimetry for individual monitoring. On the front of research and development, an ongoing national mid- & long term project for development of radiation safety technologies provides the required input which is evident from large number of publications appearing in reputed international journals. After Fukushima Nuclear Power Plant accident and in view of the growing apprehensions of radiological accidents and terroristic attacks, we have intensified research efforts on development of retrospective accident dosimetry by using optically stimulated luminescence and thermoluminescence techniques. To find materials with appropriate radiation sensitivity that are carried close to human body, are ubiquitously available and which can be used as fortuitous dosimeters in rapid determination of doses of individuals after radiation exposure, components of personal objects have been evaluated. Among the studied components (resistors, resonators, ICs, capacitors, inductors, glass display, antenna switches etc.) of personal objects (mobile phones, USB flush drives, mp3 players etc.), the resistors of mobile phones with Al_2O_3 substrates appears to exhibit high sensitivity (minimum detectable level <10 mGy), smaller sample to sample variation and high reproducibility of OSL signals. In this seminar details of our research activities will be presented. (Jungil Lee)

dr hab. Janusz Kapuśniak, prof. AJD
Dziekan Wydziału Matematyczno-Przyrodniczego

dr hab. Małgorzata Makowska-Janusik, prof. AJD
Prodziekan Wydziału Matematyczno-Przyrodniczego ds. Nauki

dr hab. Zdzisław Stępień, prof. AJD
Dyrektor Instytutu Fizyki

dr Wojciech Gruhn
Sekretarz Seminarium