

ESOF2008

Nuclear Forensics: European Commission scientists reveal their role in fight against illicit trafficking of radioactive material

In Barcelona today as part of the Euroscience Open Forum (ESOF2008), scientists from the European Commission's Joint Research Centre (JRC) will explain their evolving role in the international effort to combat proliferation and illicit nuclear trafficking.

Nuclear forensics can be used to provide information on the history, place of origin and intended use of nuclear materials. This exciting scientific field, linking nuclear chemistry and physics, counter-terrorism, criminal prosecution and non-proliferation, is a speciality of scientists working at the **Institute for Transuranium Elements**, which is a part of the European Commission's Joint Research Centre. As part of ESOF2008, the Commission's nuclear experts will present their role within the international effort to address concerns relating to illegal activities involving radioactive materials and the threat of nuclear terrorism.

Like CSI detectives, scientists are combining their skills in the field of nuclear forensics to fight new nuclear threats. Their methodological concepts, scientific achievements, collaborative efforts and actual case work will be outlined at during the scientific symposium.

Tracing the origin of stolen or diverted nuclear material is key to the prevention of illegal trafficking in the future. Recognised as a centre of excellence by national and international policing bodies, the JRC has developed methods that allow identification of the origin of intercepted materials as well as their probable intended use. To this end, the JRC also maintains an extensive database of commercial nuclear materials, together with information on seized illicit materials.

The international community has recognised the above concerns and addressed them in a number of agreements such as the Non Proliferation Treaty. Individual countries are increasing their collaborative efforts, for example by discussing G8 cooperation, as was done last month in Madrid at the fourth plenary meeting of the Global Initiative to Combat Nuclear Terrorism. The JRC also co-chairs the Nuclear Smuggling International Technical Working Group (ITWG), which develops methodologies and establishes guidelines for nuclear forensic investigations involving experts from different disciplines and originating from some 30 countries.

Between 1993 and 2007, the International Atomic Energy Agency (IAEA)'s illicit trafficking database reported 1,340 cases of illicit trafficking of various types of radioactive materials around the world. Since the mid nineties the number of cases involving nuclear material has decreased to around ten per year, but 16 reported recoveries since 1992 involved weapons-grade nuclear materials. The threat of nuclear terrorism calls for strengthened international co-operation and for improved measures for prevention, detection and response to illicit incidents involving nuclear material.

Today's scientific symposium on the above issues will be moderated by **Gabriele Tamborini** of the **European Commission's Joint Research Centre – Institute for Transuranium Elements** (<http://itu.jrc.ec.europa.eu/>) in the Fira de Barcelona as part of **The Euroscience Open Forum (ESOF2008)**. Speakers will include Klaus Meyer, also of the JRC, Diane Fischer of the IAEA, Austria, Paul Thompson of the UK's Atomic Weapons Establishment.

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ESOF is an occasion for leading scientists, young researchers, policy makers, business people and journalists, providing an open platform for debate and communication on research trends in the sciences, humanities and social sciences. This is its third edition, with previous conferences held in Stockholm (2004) and Munich (2006).

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