



# The NATO Science for Peace and Security Programme

SPS e-flier – E.Maduike / S.Michaelis

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## BELGIUM

### Cooperative Activities under the SPS Programme

Since NATO began offering science cooperation to partners in 1992, Belgian scientists and experts have had leading roles in 429 activities, and more joined various cooperative activities as participants and key speakers.

Today, NATO science activities enable close collaboration on the two key priorities of **defence against terrorism** and **countering other threats to security** and are managed under the

Science for Peace and Security (SPS) Programme. SPS activities contribute to NATO's strategic objective of partnership, helping to connect scientists and experts from NATO countries with their counterparts from Partner and Mediterranean Dialogue countries through workshops, training courses, team collaborations and multi-year projects.



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All activities supported by the SPS Programme are approved by NATO nations on the basis of consensus.

### Examples of Activities

An upcoming Advanced Study Institute led by a Belgian expert in collaboration with Croatian and Swiss colleagues took place in Split, Croatia on 6-16 April 2010. The course **“Defence-Related Intelligent Textiles and Clothing for Ballistic and NBC Protection”** was aimed at creating a high level forum in which 70 scientists and engineers from NATO, Partner and Mediterranean Dialogue countries can meet, present and discuss the most advanced developments in defence related intelligent textiles and clothing in a sustainable way. This is for an effective protection against Ballistic and NBC (Nuclear, Biological, Chemical) or multiple hazards. The forum is geared towards stimulating global research collaboration among universities/institutes and industry for safety

and protection from multiple hazards in an integrated way. [ref 983993]

As part of the project **“Clean-up of Chemicals in Moldova”**, experts from Belgium and their local counterparts have addressed the threat of the large amount of obsolete pesticides and other dangerous chemicals that had been scattered throughout Moldova, in storage or buried in the ground. These stockpiles and dumps, which contained persistent organic pollutants (POPs), posed high health and environmental risks. SPS supported the establishment of a laboratory with the necessary equipment and training to analyse the pesticides, catalogue the dump sites and set standardized sampling procedures. The laboratory was also equipped to test



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Project co-director Prof. Freddy Adams of Belgium (2<sup>nd</sup> from right) talks with his Moldovan collaborator, Maj. Mariana Grama (2<sup>nd</sup> from the left) and members of the laboratory team at the Moldovan State University in Chisinau, which is analysing the pesticide samples.

agricultural products for contamination and in October 2007, Russia and Belarus recommenced importation of Moldovan wine after samples of wine from 15 local companies were certified by the lab to be pesticide-free. Meanwhile, a collaborative effort by NGOs, several NATO agencies and the OSCE has resulted in the repackaging and safe storage of 3,245 tonnes of chemicals. The French company TREDI incinerated about 1,150 tonnes, using the database created by the NATO-funded laboratory to make the process safe and efficient. [ ref 981186]

A team of scientists from Belgium, Belarus, Russia and the United States are working on the “**Development of Electromagnetic Wave Absorbing Coatings Based on Carbon Onions**”, which could be used to reduce radar signatures, as a countermeasure against attacks using electromagnetic radiation to lock-on to airplanes with surface-to-air missiles or to

disrupt their avionics. The basic absorbing component is onion-like carbon (OLC), which is produced by the transformation of nanodiamonds with specific properties that make them ideal materials for electromagnetic wave absorption. The goal is to embed OLC in a polymer layer, which would then be deposited on the surface of the device to be protected. Test results confirmed earlier assumptions that OLC is an efficient shielding material for electromagnetic interference in the 12-230 THz range. A patent application was filed in 2006. [ref 981051]

In addition to NATO-funded activities, the SPS Programme facilitates the development of nationally funded activities, such as the series of workshops on “**Environmental Management Systems (EMS) in the Military Sector**”. Following an earlier pilot study on the same topic, it was recognised among participating countries that an EMS would be a useful tool to manage the impact of military activities on the environment—not only for protecting the environment today, but also for cleaning up after past activities and for creating an environmentally sound future. Through this activity, Belgian experts connected with their counterparts in other NATO and Partner countries to discuss the practical challenges of implementing EMS in the management framework. The final workshop was held in Kyiv Ukraine in November 2008. [ ref 982701]

The SPS programme also engages a number of Belgian consultants to lend their expertise in a variety of fields—such as biotechnology, wastewater management and environmental remediation—to technical advice and monitoring of ongoing projects.