



CROATIA

Cooperative Activities under the SPS Programme

Croatia has been involved in NATO science activities since it joined the Partnership for Peace in 2000. Croatian scientists and experts have had leading roles in 78 activities, and more joined various cooperative activities as participants.



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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.

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

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Examples of Activities

On 31 May to 11 June 2010 an Advanced Study Institute entitled “**Information Security and Related Combinatorics**” will be held in Opatija, Croatia. The aim of this SPS event is to disseminate recent advances in coding theory, network security and cryptography as well as to discuss open problems. The lectures, as well as the contributed talks and posters, will be focused on combinatorial structures which have applications to information security. This event will be a contribution to the training of young scientists in Partner and Mediterranean Dialogue countries. Their contact with leading scientists from cryptography and coding theory during eleven days will be a motivation to their future work in these branches of mathematics related to information security. Furthermore, during

this meeting young scientists from Partner and Mediterranean Dialogue countries will establish contacts with scientists from NATO countries. [ref 983988]

An upcoming Advanced Study Institute to be held in Split, Croatia on 6-16 April 2010 aims to tackle “**Defence-Related Intelligent Textiles and Clothing for Ballistic and NBC Protection**” This SPS event’s focus will be to create a high level forum in which scientists and engineers from all over the world 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, and Chemical) or multiple hazards. The forum is geared

*Turkey recognises the Republic of Macedonia with its constitutional name.

towards stimulating global research collaboration among universities/institutes and industry for safety and protection from multiple hazards in an integrated way.

[ref 983993]

Since May 2007, scientists from Croatia and Norway have cooperated in a project to measure **“Hazardous Chemical Contamination in the Sava River Basin”**. This river represents the natural north-western boundary of the Balkan Peninsula. It connects the capital cities of Ljubljana, Zagreb and Belgrade and is the source of more than 80% of total available water in the area. The key environmental problem is the discharge of contaminated, untreated effluents from municipalities



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and industrial facilities along the watershed. The project will apply state-of-the-art techniques to identify the most hazardous pollutants in collected samples. The results of the analyses will be made available the Department of Public Health, the Croatian Water Directorate, the Waste Water Treatment plant of the City of Zagreb and the authorities of Vukovar-Srijem.

[ref 982590]

Another effort to enhance environmental security in the country has linked

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researchers from Croatia and the United Kingdom on the development of **“Sensors Based on Biomembranes for the Detection of Toxins and Pollutants”** in Croatian lakes and rivers.

Although the technology of membrane-based sensors is promising, it is currently too complex and not fast, robust or sensitive enough. The goal of this project is to develop a more robust and rapid membrane-based toxicity sensor that is practical for use in rivers and estuaries. The system will first be calibrated in a laboratory and then field-tested in the Krka River estuary on the mid-Adriatic coast and another site in the northern Adriatic region. The principal end-user is Hrvatske Vode, the organisation in charge of water management in Zagreb, which will assist in conducting preliminary trials of the device. Eventually the system will also provide early-warning for environmental emergencies.

[ref 983147]

The SPS programme also facilitates the development of nationally funded activities, such as the pilot study on **“Clean Products and Processes”**. Through their participation, Croatian scientists connected with others from 30 NATO and Partner countries in an international forum to share information on the methods, tools and technologies for making cleaner industrial process applications and production. Such methods include improved “house-keeping” in process plants; modifications of existing technologies; and new process designs that consider environmental impacts. By discussing and sharing expertise about current trends and developments in the use of cleaner technologies and production of cleaner products, the participants aimed to stimulate effective technology transfer.

[ref 981928]