

The preliminary ARW program

Day 0, Wednesday, May 19 - Arrival, evening program

Dinner, pre-workshop discussion

Day 1, Thursday, May 20 - Advanced Water Treatment

Workshop scope and objectives, introductions. Strategies for enhancing sustainability of urban waters. Real-time management of urban water systems, challenges and future developments. Overall concept of urban water management. Advanced Oxidation Processes for Water Treatment. Advances in membrane desalination technology for reliable potable water supply. Ozonation of tertiary treated wastewater - a solution for micro pollutant removal and disinfection. Regulation of anthropogenic load on the natural water objects in Ukraine: problems and possible ways of mitigation. Discussion on Advanced Water Treatment. The water Cycle Impact on the Peace Process in the Middle East. Drinking water sources in the Baltic region.

Day 2, Friday, May 21 - Advanced Wastewater Treatment

Present state and near future of advanced wastewater treatment. Single Household MBR plant - advanced wastewater treatment for decentralized discharge. Recent developments in desalination and wastewater treatment. Pollution of sea and fresh water with oil products: analytical determination and transformation of the pollutants. A conceptual approach of adaptive water management infrastructure with wastewater reuse. Advanced Wastewater Systems. Integrated Approach for Wastewater Reuse. Wastewater treatment in SR - current situation, legislation, use of standard and advanced technologies. Discussion on Advanced Wastewater Treatment. Tariffs and cost efficiency in water supply systems. Estimation of shadow prices for the pollutants removed in the wastewater treatment process. Risk in Wastewater Reuse. Discussion on Advanced Wastewater Treatment.

Workshop Summary and Conclusions.

Day 3, Saturday, May 22 - Field Trip

Departure of participants



ARW directors

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The Science for Peace and Security

The Science for Peace and Security (SPS) Committee is the primary NATO committee supporting practical cooperation in civil science and innovation. This new organization oversees a programme which contributes to NATO's mission by linking science to society through projects conducted under well-established procedures. It focuses on security, environmental sustainability and other defined priorities of its Partner nations. The SPS Programme enables NATO to demonstrate its commitment to practical, visible projects with tangible output.

The aim of the Science for Peace and Security Programme is to contribute to security, stability and solidarity among nations, by applying the best technical expertise to problem solving. Collaboration, networking and capacity-building are means used to accomplish this end. A further aim is to facilitate continued democratic growth and support economic development in NATO's Partner countries.

Other ARWs in 2010 on Environmental Security

Security of Industrial Water Supply and Management
07 - 10 May 2010, Ankara, Turkey

Managing Global Environmental Threats to Air, Water and Soil -
Examples from South Eastern Europe
28 - 30 Jun 2010, Ljubljana, Slovenia

Effect of Climate Change on Water Supplies - Issues of National
and Global Security
01 - 04 Sep 2010, Cesme, Izmir, Turkey

Environmental Security: Water Security, Management and Control
To be confirmed, Marrakech, Morocco



NATO Advanced Research Workshop

Advanced water supply and wastewater treatment: a road to safer society and environment

under
Science for Peace and Security Programme

Lviv, Ukraine
19. - 22.5. 2010

Sponsored by
NATO

and supported by

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Background

Stable, safe, secure and readily available water supply is one of the key factors, which ensure a good level of the public health, safe and stable society, and improvement of the living standards. Scientific assessments show that about 80 % of diseases and one third of the total death toll in the developing countries are caused by the low quality of the drinking water. Other countries are also suffering because of water shortages and insufficient quality of the drinking water. Many rivers in Europe and in other parts of the world are significantly polluted by insufficiently treated or untreated wastewater discharge. This causes low quality of the drinking water in the downstream regions, increased cost of its treatment and production and, also serious impacts on aquatic organisms, including fish populations. Therefore, rational treatment of the wastewater is a very topical issue because this point source of pollution is gaining more and more on importance especially in highly urbanized areas. Reclamation and reuse of various industrial wastewaters and greywater is a promising way for diminishing consequences of the wastewater discharges into the environment.

Water-transmitted diseases can seriously undermine regional security and economic development and even provoke social conflicts. On other hand, many of the water supply problems can be solved, or at least partly mitigated, through relatively inexpensive but still quite technologically effective solutions related to water management/distribution and wastewater treatment (especially in the regions where local population uses mostly septic tanks or cesspools).

This ARW will strive to answer the following challenges:

- Environment and public health protection through the complex and multipurpose use of the available water resources, and effective treatment of greywater.
- Wider involvement of the communities and local authorities in water management, water resources use and improvement of the sanitary conditions;
- More effective financial management in the water treatment, water distribution and wastewater management.

Besides that, it is very important to address the following problems:

- Effective protection of the aquifer regions and their complete separation (isolation) from the landfill areas;
- Wider collection of the municipal greywater in centralized sewage systems, which can ensure better treatment at local wastewater treatment plants;
- Design and construction of separate drainage and stormwater collection systems ("separate" means isolation from the regular greywater sewage system);
- Discussion of possible ways of reuse and recycling of some categories of greywater and/or stormwater just near the points of collection. This means possible uses of such subpotable water for landscape irrigation, industrial supply and other.

- Control of transmission of pharmaceutical, personal care products and some other chemical agents through the water cycle

Therefore, the main output of the ARW will consist in exchange of views between many scientists and water supply and treatment specialists. This should give the scientists a wider understanding of possible solutions, which are needed in their home countries. Potential end-users of the ARW's results and conclusions can be significantly extended through publication of the workshop proceedings in a specialized scientific volume.

Proposed Workshop

The proposed ARW aims to bring together the scientists from various NATO and NATO partner countries in order to discuss recent advances in the field of municipal and industrial water supply and wastewater treatment. This event would be especially focused on the issues related to lowering the risk of failure and malfunctioning of the water supply/wastewater treatment systems, by application of advanced methods of the water treatment, rational water management aiming to enhance environmental sustainability, and also by considering other important issues in this field.

Language

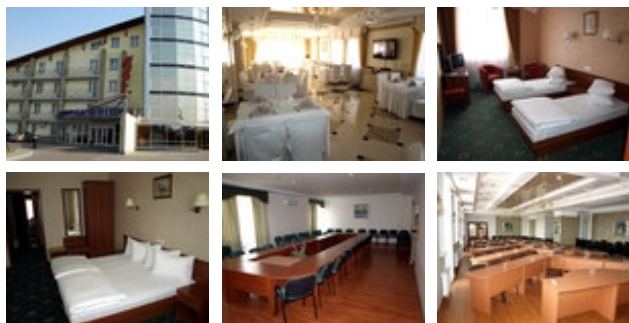
The ARW will be conducted in English. To fully contribute to, and benefit from, the workshop program, all participants must be proficient in this language.

Venue

Lviv is located on the edge of the Roztochia Upland, approximately 70 km from the Polish border and 160 km (100 miles) from the eastern Carpathian Mountains. Map is located at webpage.

Accommodation

The new comfortable hotel is the best place for tourist groups, businessmen, conferees. Hotel can accommodate 52 guests. All together there are 24 rooms including singles, doubles, twins, semi-suites and de luxe. All rooms have private facilities (bath or shower), telephone, TV, refrigerators with minibar. Some rooms have air-conditioner.



Participation

This ARW is open to scientists and professionals with experience related to municipal water management. The attendance will be limited to 45 experts, by invitation only.

To obtain an Official Invitation, please send the Application to Attend, preferably by email, to the ARW Secretary before March 31, 2010. Late applications will be considered only if space is available. The final selection of participants will be made in consultation with NATO, respecting the recommendations on numbers of participants from various countries. The selected participants will receive an Official Invitation to Attend by April 10, 2010, and will be responsible for obtaining the own health, accident and travel insurance, as well as visa to enter Ukraine (if required).

Costs of Attendance and Financial Assistance

The workshop registration fee of 150 € will be waived for all NATO-sponsored participants. The cost of room and board (approximately 150 €), and travel expenses may be partly or fully subsidized for the selected candidates from the NATO, Co-operation Partner Countries and Mediterranean Dialogue Countries, provided that:

- (a) they do not work for commercial or industrial undertakings, or
- (b) are invited as key speakers.

Travel support will be awarded for the most economical way of travel and in competition for the limited funds available. Invitations to attend will be conditional - pending the candidate's final confirmation and posting a deposit (150 €) for hotel costs (where required). After May 10, 2010, this deposit will be non-refundable.

Contributed Papers

Participants are invited to submit a paper on the workshop topic of the choice (see the preliminary ARW Program). Paper abstracts (about 200 words) should be enclosed with the Application to Attend. Full papers must be delivered by May 10, 2010, according to the instructions to be distributed later. Edited workshop proceedings will be published as a book.

For further information (Call for application to Attend):

<http://www.aquaprocon.cz/arw>

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