

Annual Report

1st NATO/CCMS Pilot Study "Clean Products and Processes" Phase II

sponsored by



hosted by



Cetraro (CS) – Italy, 11 – 15 May 2003



ITM - CNR

Presentations

Participants

Final Remarks

2004 Host Country

CD Info

Introduction

The Council of the North Atlantic Treaty Organization (NATO) established in 1969 the Committee on the Challenges to Modern Society (CCMS) with the aim to create a network of Countries for exchanging information, ideas, knowledge, technologies on topics of interest for the Society. In particular, the achievement of a sustainable growth is one of the issues that the CCMS Pilot Study on Clean Products and Processes considers as really important for the next future: in order to produce "in harmony" with the environment, while successfully competing, industries need cleaner and economically attractive technologies. The series of meetings held during the Phase I of the Pilot Study had the positive fallout of the creation of an international infrastructure which actively shared expertises in cleaner processes. The Phase II, which is in progress, will focus on increasing the collaboration among countries in solving common problems and on in-depth discussions and assessments in the already identified industry sectors of importance.

The NATO Committee on the Challenges to Modern Society (CCMS) has sponsored until now five Pilot Study meetings on Clean Products and Processes – Phase I:

- ❖ the first meeting was held in Cincinnati, Ohio, USA, in 1998;
- ❖ the second meeting in Belfast, Northern Ireland, in 1999;
- ❖ the third meeting in Copenhagen, Denmark, in 2000;
- ❖ the fourth meeting in Oviedo, Spain, in 2001;
- ❖ the fifth and concluding meeting in Vilnius, Lithuania, in 2002.

The five years of activity have been very useful for creating the infrastructure for the Pilot Study network; five more years of Phase II have been approved (November 2002-October 2007).

The meeting held in Calabria, Italy, on May 2003, was the first meeting of the NATO/CCMS Pilot Study on Clean Products and Processes-Phase II. It was hosted by the Institute on Membrane Technology, ITM-CNR, Rende (CS), Italy.

Its object was the discussion about the progresses made worldwide in developing clean technologies in the logic of the sustainable growth. The aim of the meeting was the exchange of experience among all countries involved on problems related to the environmental impact of industrial productions. Techniques and methodologies developed for improving the performance of existing productive cycles and/or for defining new cleaner systems of productions were illustrated. The share of the knowledge would help in reaching possible solutions to specific problems, especially among countries with similar environmental impact.



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Sunday, May 11, 2003

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- ❖ **A Review on the Membrane Research Activities in Italy**
Enrico Drioli
- ❖ **Overview of the Meeting Agenda, Technical Program and Tours**
Daniel Murray
- ❖ **Report on 2002 Meeting**
Jurgis Staniskis
- ❖ **Selection and Use of Environmental Indicators in Different NATO Member States**
Horst Pohle
- ❖ **Life Cycle (Impact) Assessment**
David Pennington
- ❖ **Sustainability Indicators and Reporting Mechanisms in European Regions**
Annik Fet
- ❖ **Environmental Management Accounting (EMA)**
Gyula Zilahy
- ❖ **TRACI-Tool for the Reduction and Assessment of Chemical and other Environmental Impacts**
Dan Murray



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Monday, May 13, 2003

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- ❖ **Design and Simulation of Environmental Conscious Chemical Processes**
Teresa Mata
- ❖ **Beyond the Molecular Frontier: Challenges for Chemistry and Chemical Engineering**
Tomas Chapman
- ❖ **Programme on Sustainable Industrial Development in Lithuania**
Jurgis Staniskis
- ❖ **Clean Products and Processes Update - University of Natal**
Chris Buckley
- ❖ **Break-through of Water Reuse in Textile Industry through Development of Generic Water Recycle Schemes**
Henrik Wenzel
- ❖ **Ionic Liquid Research and Application**
Jim Swindall
- ❖ **Some Case Studies on Clean Products and Processes**
David Wolf, Chaim Forgacs



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Wednesday, May 14, 2003

- **Process Intensification in European Union : Current Work and Future Plans, *Giorgos Gallios***
- **Wettability Determination as an Important Factor in Design and Environmental Performance of Some Industrial Processes, *Andrzej Doniec***
- **Development and Integration of New Processes for Greenhouse Gases Management in Multi-Plant Chemical Production Complexes, *Ralph Pike***
- **Studies on the Purification of Nonwater Media by Ceramic Membranes, *Gueorgui G. Kagramanov***
- **Alternatives for the Separation of Organic Acids as Examples of Process Intensification, *José Coca***
- **Process Intensification by Modeling and Modifying Packed Bed Reactor, *Antonio Martins***
- **New Technologies for Improving Gas Liquid Transfer Processes and Catalytic Reactions, *Alessandra Criscuoli***
- **Rationalization of Productive Cycles in the Agro-Food Industries by Innovative Processes, *Alfredo Cassano***
- **Slovak By-products in Intensification of Wastewater Treatment Processes, *M. Vaclavikova***
- **Reuse of Waste Materials from Zinc Industry for Sorption of Hydrogen Sulfide, *Aysel Atimtay***
- **Experience with Cleaner Production in the Ledeko, Inc. Agricultural Enterprise, Letovice, The Czech Republic, *František Božek***
- **Establishing and Managing Waste Minimisation Clubs in South Africa, *Chris Buckley***
- **Network of Excellence – TELES, *Viorel Harceag***
- **Topics for Cooperation**



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Thursday, May 15, 2003

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- ❖ **Sustainable Development using Macroeconomic and Microeconomic Indicators**
Peter Glavič
- ❖ **"Food grade" MgCO₃·3H₂O – clean chemical production from waste brine**
Stefka Tepavitcharova and Christo Balarew
- ❖ **Chemical Dispersants and Bioremediation for the Treatment of Oil Spills**
José Coca
- ❖ **Cleaner Production Policy in context of Market Economy & Sustainable Development for Ukraine and other countries of transition economy**
William Zadorsky
- ❖ **Evaluation of the Progress of the Pilot Study and Open Discussion**
Subhas Sikdar
- ❖ **Annual Report Presentation**
Dan Murray
- ❖ **Discussion on Future Directions for the Pilot Study**
Dan Murray
- ❖ **Meeting Wrap Up**
Subhas Sikdar



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Bulgaria



Czech Republic



Denmark



Germany



Greece



Hungary



Israel



Italy



Lithuania



Norway



Slovak Republic



Poland



Portugal



Romania



Russia



Slovenia



Spain



South Africa



Turkey



Ukraine



U.K.



USA



Sweden



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The 2003 NATO CCMS Meeting has been an useful opportunity to point out the common interest among participants on topic related to environmental concerns. It has been characterized by intensive discussions in all the presentations; various suggestions for further activities have been also presented.

Six topics for cooperation have been underlined during the five days of Workshop, and coordinators have been indicated:

[1] Sustainability metrics-reporting mechanisms

(Coordinator: **Annik Magerholm Fet**, Faculty of Social Sciences and Technology Management, Department of Industrial Economics and Technology Management, Norwegian University of Science and Technology, e-mail: fet@iot.ntnu.no)

[2] Train the trainers implement EMA

(Coordinator: **Gyula Zilahy**, Hungarian Cleaner Production Centre, Budapest University of Economic Sciences and Public Administration, e-mail: zilahy@enviro.bke.hu)

[3] Education and training on sustainable production

(Coordinator: **Peter Glavic**, University of Maribor, Faculty of Chemistry and Chemical Engineering, e-mail: glavic@uni-mb.si)

[4] Cleaner production policy in transition economy Countries

(Coordinator: **William Zadorsky**, Ukrainian Ecological Academy of Sciences, Ukrainian State University of Chemical Engineering, e-mail: ecofond@ecofond.dp.ua)

[5] Indicators for potential new sustainable technologies

(Coordinator: **Enrico Drioli**, ITM – CNR at University of Calabria, e-mail: e.Drioli@itm.cnr.it)

[6] Waste minimization club

(Coordinator: **Chris Buckley**, Pollution Research Group, University of Natal, e-mail: BUCKLEY@nu.ac.za)



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The possibility to organize specific projects to be carried out under the umbrella of the CCMS Pilot Study, with financial sponsorship from International Agencies or other organizations has been also analyzed.

Prof. Drioli suggested, in particular, the use of the FP6 instruments for elaborating specific joint projects on the topics of interest and the creation of a roadmap of the FP6 projects (by ITM-CNR; Italy) suitable for that purpose. Prof. Drioli was asked to elaborate a short report on the opportunities existing in the FP6 of the European Union.

During the meeting technical visits to industrial sites of the region were organized and in particular to:

1. Amarelli Liquorice

C/da Amarelli S.S. 106 - 87068 Rossano Scalo CS (Italy)

tel. +39/0983511219 - fax +39/0983510512

amarelli@mediterranea-net.it, www.amarelli.it

2. OSAS agro-foods

Contrada Ciparsia

87012 Castrovillari (CS)

tel 0981 - 480960 , fax 0981 – 480903

3. Mediterranea R.&S.

Mediterranea R. & S.

C/da Coretto

87046 Montalto Uffugo CS

4. GIAS

Gruppo Industriale Alimenti Surgelati - Mongrassano



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At the end of the Workshop the host Country for the 2004 meeting has been chosen:

Hungary!





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Notice

This report was prepared under the auspices of the North Atlantic Treaty Organization's Committee on the Challenges of Modern Society (NATO/CCMS) as a service to the technical community by the United States Environmental Protection Agency (U.S. EPA) and the Institute of Membrane Technology at the University of Calabria, Italy. The views expressed in these proceedings are those of the individual authors and do not necessarily reflect the views and policies of the U.S. EPA. Scientists in EPA's Office of Research and Development have prepared the EPA sections, and those sections have been reviewed in accordance with EPA's peer and administrative review policies and approved for presentation and publication. This report was produced as a result of a cooperative agreement with U.S. EPA's National Risk Management Research Laboratory (NRMRL) and the Institute of Membrane Technology (ITM) at the University of Calabria, Italy. This report was produced and edited by Dr. Maria A. Liberti, ITM, and reviewed by Mr. Daniel J. Murray and Dr. Subhas K. Sikdar of NRMRL. Mention of trade names or specific applications does not imply endorsement or acceptance by U.S. EPA or the University of Calabria.

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