

NATO ADVANCED RESEARCH WORKSHOP



ADVANCE IN CO₂ GEOLOGICAL SEQUESTRATION
IN EASTERN AND WESTERN EUROPEAN COUNTRIES



ORGANIZING COMMITTEE

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**PAPER
PRESENTATIONS**

Papers will be presented at oral sessions.

The time of presentation will be limited to 15 min.

Speakers will have at their disposal: a transparency projector (A4) and a multimedia projector for a computer version (MS Power Point).

SCHEDULE

November 14 – arrival and excursion;

November 15-17 – scientific program;

November 18 – departure.

The starting time is 9 a.m.

The Workshop will be held at the Institute of Petroleum Chemistry SB RAS.

REGISTRATION

Participants can register on November 15 from 9 to 9.30 at the Institute of Petroleum Chemistry.

ACCOMMODATION

Participants of the Workshop will be accommodated in the “Rubin” hotel located in 16, Akademichesky Avenue.

**FOR ADDITIONAL
INFORMATION
PLEASE CONTACT**

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We will be glad to meet you in Tomsk

**MONDAY,
November 15**

SCIENTIFIC PROGRAM

9.30-10.00

OPENING OF THE WORKSHOP
Greetings of organizers

**CO₂ GEOLOGICAL SEQUESTRATION IN THE CONTEXT OF
CURRENT AND FUTURE INTERNATIONAL CLIMATE
POLICIES**

10.00–10.30

N. RILEY. An Overview of UK and European Research in Geological CO₂ Sequestration.

10.30–11.00

I. LAKATOS. Role of Hydrocarbons in the XXI. Century: Energy Scenario and Climatic Aspects.

11.00-11.20

Coffee break

11.20–11.50

L.I. INISHEVA. Role of Bogs in the Carbon Cycle.

11.50–12.20

B.M.M. KROOSS. State of CO₂ Capture and Subsurface Storage Activities in Germany.

12.20-12.50

T. BABADAGLI. Optimization of CO₂ Injection for Sequestration/Enhanced Oil Recovery and Current Status in Canada

13.00-14.30

Lunch

**CO₂- EOR, MONITORING AND VERIFICATION,
METHODOLOGICAL ASPECT**

14.30-14.55

J.B. RIDING. The IEA Weyburn CO₂ Monitoring and Storage Project.

14.55-15.20

M. SHEVALIER. Geochemical Monitoring of Gas-Fluid-Rock Interaction at the IEA Weyburn CO₂ Storage Project, Saskatchewan, Canada.

15.20-15.45

F. QUATTROCCHI. Strontium Isotope (⁸⁷Sr/⁸⁶Sr) Chemistry in Produced Oilfield Waters: The IEA Weyburn CO₂ Monitoring and Storage Project.

15.45 – 16.05

Coffee break

16.05-16.30

V.A. KUVSHINOV. The Use of CO₂ and Combustion Gases to Enhance Oil Recovery.

16.30-16.55

Y. LE GALLO. Geological Storage of CO₂ in Mature Oil Fields: the Modeling Challenges.

16.55-17.20

A.H. MOHAMMADI. Subsurface CO₂ Storage Through Hydrate Formation.

17.20-17.45 **A. CHADWICK.** 4D Geophysical Monitoring of the CO₂ Plume at Sleipner, North Sea: Verification and Processes.

17.45-18-10 **B. M. SCHROOT.** Seismic Anomalies Indicating Leakage – Application to Monitoring Gas Storage.

19.00 Welcome Party

**TUESDAY,
November 16**

**CO₂- EOR, MONITORING AND VERIFICATION,
METHODOLOGICAL ASPECT**

9.00-9.25 **S. PERSOGLIA.** 4-D Seismics, Hydrate/Free-Gas Detection and Overpressure Prediction as a Combined Methodology for Application to CO₂ Sequestration.

9.25–9.50 **A.G. TELIN.** Controls of CO₂ Filtration in Heterogeneous Reservoirs with Foam-Emulsion Systems.

9.50-10.15 **B.M.M. KROOSS.** Experimental Studies on CO₂ Transport Processes in Sedimentary Rocks and Coals.

10.15-10.40 **S. LOMBARDI.** What Can We Learn on CO₂ Sequestration from Natural Analogue: a Review from Italian Study Sites.

10.40-11.00 Coffee break

THE LONG TERM FATE OF CO₂ IN THE GEOSPHERE

11.00-11.25 **M. STENHOUSE.** Long-Term Assessment Modeling Associated with a Geological CO₂ Storage Project.

11.25-11.50 **I. CZERNICHOWSKI.** Geochemical Interactions between CO₂, Porewaters and Reservoir Rocks: Lessons Learned from Laboratory Experiments, Field Studies and Computer Simulations.

11.50-12.15 **N. VOLTATTORNI.** Study of CO₂ Natural Emissions in Different Italian Geological Scenarios: Refinement of Natural Hazard and Risk Assessment.

12.15-12.40 **J. PEARCE.** The Possible Impacts on the Surface Environment due to CO₂ Underground Storage: Lessons Learned from Natural Analogue Studies.

12.40-13.05 **J. KLERKX.** Tectonically Controlled Methane Venting in Lake Baikal.

13.05-14.30 Lunch

INDUSTRIAL GAS EMISSIONS IN RUSSIA

14.30-14.55 **M. Yu. ARSHINOV.** Dynamics of the Vertical Distribution of CO₂ and CO Concentrations over West Siberia (1997-2003).

14.55-15.20 **B.D. BELAN.** Study of Long-Term Variations of CO₂ and CO Concentrations in the Lower Atmospheric Layer nearby Tomsk (West

Siberia).

15.20-15.45 **Y.M. POLISHCHUK.** Remote Sensing Techniques for Assessment of Anthropogenic CO₂ Emission.

15.45-16.10 **E.A. VAGANOV.** Carbon Balance and Emission of Greenhouse Gas in Boreal Forests and Bogs of Siberia.

16.10–16.30 **Coffee break**

16.30-16.55 **M.V. PANCHENKO.** Interaction of CO₂ between Atmosphere and Superficial Waters of Lake Baikal.

16.55-17.20 **V.M. DOMYSHEVA.** Influence of Chemical Composition of Water of Lake Baikal on Processes of Interaction of CO₂ with Atmosphere.

17.20-17.45 **N.P. KIRIK.** Possibilities of Storage of SO₂ under Permafrost, Different Schemes of Dioxide Storage in Geological Strata at Permafrost Terrain.

17.45-18.10 **L. I. KURTEEVA.** The Sources of Carcinogenic PAH Emission in Aluminium Production Using Soderberg Cells.

**WEDNESDAY,
November 17**

POSSIBILITIES OF INDUSTRIAL GAS SEQUESTRATION IN THE PERMAFROST

9.00 - 9.30 **V.P. MELNIKOV.** Distribution of Permafrost in Russia.

9.30-10.00 **A.D. DUCHKOV.** Characteristics of Permafrost in Siberia.

10.00-10.30 **L.K. ALTUNINA.** Cryogels – Promising Material for Underground Works in Permafrost.

10.30-11.00 **F.A. KUZNETSOV.** Generalities about Gas Hydrates.

11.00-11.30 **A.R. KURCHIKOV.** Gas Hydrate Resources in West Siberia North.

11.30-12.00 **Coffee break**

PUBLIC ACCEPTANCE

12.00-12.20 **S. VERCELLI.** Stakeholders Acceptance and Understanding of CO₂ Geological Storage.

12.20-12.40 **F. ZARLENGA.** Natural Leakage of Helium from the Italian Sedimentary Basins of the Adriatic Structural Margin. The Perspective for the Geological Sequestration of CO₂.

12.40-13.00 **O.O. UDOVYK.** GHG Emissions in Ukraine.

13.00 – 14.30 **Lunch**

14.30-17.00

ROUND TABLE

**INDUSTRIAL GAS SEQUESTRATION IN PERMAFROST:
PRO AND CONTRA**

GENERAL DISCUSSION

**Conclusions and approval of workshop
recommendations**

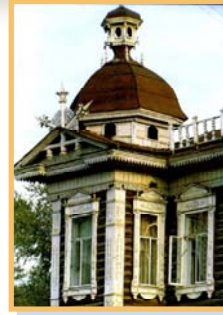
18.00

Evening Party



Tomsk is a regional centre of the Russian Federation. Tomsk is situated in the south of the West Siberia, 56°29' N and 54°38' E, at a distance of 3000 km from Moscow.

Tomsk was founded in 1604. In 2004 Tomsk celebrated its 400th anniversary.



Tomsk is an ancient scientific and educational centre of Russia, often referred to as the 'Siberian Athens'.

The municipal arms of the city of Tomsk approved on July 5, 1878 by the royal decision represent a silver horse on a green escutcheon.



There are 29 research institutes and 6 state universities in Tomsk.



Teaching staff numbers 4 000 persons, including 450 Professors and 2160 Doctors of Science (Ph.D.). About 50500 students study at Tomsk Universities.