Thank you

Thank you for your valuable participation in the BCF 2025 Conference. We hope the experience was insightful, rewarding, and filled with opportunities for learning and connection. We look forward to welcoming you again next year!
Stay connected with us through our social media channels for updates, highlights, and future events.
If you have any questions or inquiries, feel free to reach out to us using the contact information below:

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Graphic Designer
Pardis Parnian

BALTIC CARBON FORUM

2025 Conference Agenda

From Research to Reality: Scaling CCUS Solutions

9th – 10th Of October

Radisson Blu Hotel
Olümpia Liivalaia
33, 10118 Tallinn, Estonia

WELCOME

Dear Attendees,

On behalf of the organizing committee, we are delighted to welcome you to the Baltic Carbon Forum (BCF) 2025 conference. Whether this is your first time attending or you're returning to join us again, thank you for being here. Your presence and trust mean a great deal to us, and we are committed to providing a valuable and enriching experience. As in previous years, BCF 2025 offers a diverse program designed to bring together researchers, professionals, and students to exchange innovative ideas, explore cutting-edge technologies, foster collaboration, and expand networks in the field of Carbon Capture, Utilization, and Storage (CCUS).

Please refer to this Agenda Booklet for the full schedule and speaker list. The booklet is organized into the following sections: Welcome Message, Acknowledgement, Committee Members, BCF and BASRECCS Introduction, BCF Conference Partners, CCUS Definition, Conference Agenda, Speakers, Panel Discussion, Past Activities, and Poster Presentations.

All sessions will be live streamed on YouTube (@Basreccs), so those who are unable to attend in person can still follow the conference online. Additionally, refreshments will be available after each session, and meals will be provided throughout the two-day event to keep you energized and engaged. We hope you enjoy your time with us and gain meaningful insights, connections, and inspiration from this year’s conference.

Warm regards,
The BCF Organizing Committee

BALTIC CARBON FORUM

ACKNOWLEDGMENTS

I would like to express my heartfelt gratitude to the Nordic Council of Ministers, whose support through Nordic Energy Research made the organization of BCF 2025 possible. My sincere thanks also go to BASRECCS and our valued industry partners—SCHWENK Latvija SIA, Minijos Nafta, and Akmenės Cementas—for their generous contributions and continued commitment to advancing the goals of this forum.

I am especially grateful to the Conference Organizing Committee — Peter Molander, Alla Šogenova, Thomas Haselton, Michal Wendolowski, Monika Konieczyńska, Sarah Eileen Gasda, Auli Niemi, Shruti Malik, and Janis Volberts — for their dedication, hard work, and voluntary efforts in ensuring the successful preparation and delivery of this event. A special note of thanks goes to BCF 2025 Secretary, Parsa alimohammaiardakani, whose tireless efforts and attention to detail greatly contributed to the success of this forum. My special thanks go to Pardis Parnian for generously volunteering her time and creativity in designing the BCF 2025 posters and program booklet.
Finally, I extend my warm thanks to all our partners, colleagues, invited speakers, and participants. Your contributions, insights, and active engagement are what make the Baltic Carbon Forum a truly collaborative, inspiring, and impactful platform.

With appreciation,
Mayur Pal
Conference Chair

Committee Members

Mayur Pal (Conference Chair)
Kaunas University of Technology, Lithuania

Parsa Alimohammadiardakani
(Conference Secretary)
Kaunas University of Technology,
Lithuania

Peter Molander
(Treasurer, BASRCESS board members)
Projectum, Finland

Alla Šogenova (BASRCESS board members)
Tallinn University of Technology, Estonia

Michal Wendolowski (BASRCESS board members)
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Monika Konieczyńska (Adviser)
Polish Geological Institute,
Poland

Auli Niemi (Adviser),
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Janis Volberts (Adviser)
Bellona Europa, Latvia

Sarah Eileen Gasda
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NORCE Energy,

Thomas M Haselton (Adviser),
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Shruti Malik (Adviser)
Kaunas University of
Technology, Lithaunia

BASRECSS

The BASRECCS network of CCS expertise in the Baltic Sea Region was formed and established to support the exploration and gradual implementation of CCS in the Baltic Sea Countries. Under the network umbrella a pre-study about geological conditions for storage was published in 2017. New projects are underway with serious applications for funding. Industry and government take important steps for national plans. BASRECCS is primarily there to facilitate regional collaboration and joint projects, research, pilots and demonstration.

You are welcome to join the network and invite colleagues, peers and friends:
http://basrec.net/ccs-initiative/network/!

Baltic Carbon Forum (BCF)

BCF was established as BASRECCS's long-term strategy to foster large-scale development of Carbon Capture, Utilization and Storage (CCUS) in the Baltic Sea Region, as one of the key solutions and technology to mitigate climate change. Each year, the BCF Conference serves as a platform to promote CCUS solutions, offering attendees opportunities to expand their networks, share breakthroughs and experiences, engage in meaningful discussions, discuss the policy and financial aspects, and collaborate on identifying gaps that can accelerate the deployment of large-scale CC(U)S projects within the Baltic Sea Region (BSR).
The speakers will be invited to:

- Inform about the current situation regarding the development of CC(U)S and related technologies in the BSR.
- Present and discuss the regionalization of ongoing and finalized projects.
- Present the ongoing and potential future cooperation and networking on CC(U)S, Carbon Management, and related technologies.

The theme of the BCF 2025 conference, “From Research to Reality: Scaling CCUS Solutions,” reflects our core mission to introduce Carbon Capture, Utilization, and Storage (CCUS) to a broader audience while shaping public perception through technical insights and by addressing the policy and financial dimensions of CCUS deployment.

Partners

Nordic Energy Research

Nordic Energy Research (NER) is the platform for cooperative energy research and policy development under the auspices of the Nordic Council of Ministers. NER has a staff of 19 and are based in Oslo together with its sister organisations Nordforsk and Nordic Innovation.
Nordic cooperation in energy research started in 1975, leading to common pot research funding since 1985 and the establishment of Nordic Energy Research as an institution under the Nordic Council of Ministers in 1999.
The Board comprises representatives from the authorities and ministries responsible for energy research funding in the five Nordic countries, who contribute the majority of the organization's funding.The Nordic region has ambitious goals to reduce carbon emissions and its dependence on fossil fuels, and at the same time create new growth industries based on green technology. Nordic Energy Research funds research of joint Nordic interest that supports these ambitions by expanding knowledge on sustainable energy and contributing to the development of new, competitive energy solutions.

MINIJOS NAFTA

The Lithuanian and Danish joint venture Minijos Nafta was founded in 1995. It started as a small company with a few employees and expanded to more than a hundred employees during the period of its activity. Meantime the company employs 130 qualified specialists in different fields.
Due to qualified and professional employees the company is always among the most innovative companies in the Lithuanian business environment. The specialists of the company are continually looking for new up-to-date oil production methods that are socially and environmentally friendly.Investments in advantageous and modern technologies allow the company to produce oil in an environmentally safe manner.
Minijos Nafta was the first to introduce modern petroleum technology not only in Lithuania but also in the Baltic States. Minijos Nafta is also among one of the first companies in Baltics to have conducted series of CO_2 injection tests in subsurface reservoirs injecting upto 1000 tons of CO_2.

Akmenės CEMENTAS

Akmenės Cementas, being one of the largest industry companies in Lithuania, takes regular development as its strategic business objective. Akmenės Cementas give constant attention to product quality, reasoned decisions of pollution problems, improvement of employee's professional skills and implementation of investment projects. Modernization is currently in progress in a company – wet cement production process is being modified to dry production process. Such conversion will enable to reduce fuel consumption per unit of production by half. Because of that the amount of CO_2 emission will decrease. Environment protection is one of the most important spheres of regular development for Akmenės cementas. Akmenės cementas has set a task to change about 50 percent of main fuel into alternative fuel including burning of waste.

SCHWENK

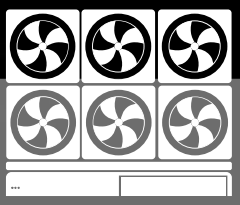
The SCHWENK Building Materials Group – producing cement, sand & gravel, concrete, pumping services, and recycling. Thanks to its products and services, large and powerful structures can be brought to life. Not only its products, but also the company itself offers stability: For over 175 years, SCHWENK been a cornerstone of the German building materials industry. As a fifth-generation family business, SCHWENK recognizes its responsibility toward people, nature, the environment, and the climate.
SCHWENK thinks across generations and place a strong emphasis on the sustainability of its building material solutions. It knows that its success is built on the active dedication and collaboration of its employees. That's why continuous development and growth are at the heart of its employee culture. From raw material extraction to production control, quality assurance, administration, and IT, they all have one thing in common: passion, enthusiasm, and curiosity for the work they do every day. SCHWENK offer an exciting and diverse working environment that brings together exceptional people and innovative technologies.

CCUS DEFINITION

Carbon dioxide (CO_2) is the most influential human-driven greenhouse gas contributing to global warming. While naturally part of the Earth's carbon cycle, its concentration has risen dramatically due to fossil fuel combustion, industrial activity, and deforestation. This buildup traps more heat in the atmosphere, intensifying climate change impacts such as rising sea levels, extreme weather events, and ecosystem disruption. Because CO_2 lingers in the atmosphere for centuries, reducing emissions alone is not enough to stabilize the climate.

This is where Carbon Capture, Utilization, and Storage (CCUS) becomes essential. CCUS provides a pathway to intercept CO_2 before it reaches the atmosphere, repurpose it into useful products, or securely store it underground for the long term. It addresses emissions from industries that are difficult to decarbonize while also enabling negative emissions through direct air capture. By combining emission reductions with active management of CO_2, CCUS plays a pivotal role in achieving global net-zero goals and mitigating the worst effects of climate change.

Carbon Capture



Carbon capture refers to a range of technologies designed to prevent CO_2 from entering the atmosphere. It typically involves separating CO_2 from power plant flue gases, industrial processes, or even ambient air using chemical, physical, or biological methods. This step is particularly crucial for sectors where decarbonization is difficult, such as cement, steel, and heavy transportation.

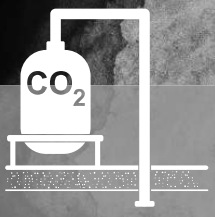
By intercepting emissions at their source, carbon capture helps reduce the carbon footprint of industries without completely overhauling existing infrastructure. Recent advancements in direct air capture (DAC) also allow the removal of CO_2 already in the atmosphere, offering a way to actively reverse emissions in addition to preventing them.

Carbon Utilization

Rather than treating CO_2 solely as waste, carbon utilization seeks to transform it into valuable resources. Captured CO_2 can be used to produce synthetic fuels, polymers, fertilizers, and building materials like concrete, providing an economic incentive for CCUS adoption. This circular approach not only reduces emissions but also creates pathways for sustainable industrial innovation.

In addition, CO_2 can serve functional roles in industries—for example, in enhanced oil recovery (EOR), where it is injected into oil fields to increase extraction efficiency while simultaneously storing part of the CO_2 underground. Expanding utilization technologies can help close the carbon loop and make low-carbon systems more financially viable.

Carbon Storage



For CO_2 that cannot be reused, storage in deep geological formations offers a secure, long-term solution. These formations include depleted oil and gas reservoirs, unmineable coal seams, and deep saline aquifers, where CO_2 is injected and permanently trapped under impermeable rock layers. This process mimics natural storage mechanisms that have kept gases underground for millions of years.

Effective monitoring and risk management ensure that stored CO_2 remains safely contained, protecting the environment and public health. Large-scale storage is essential for achieving net-zero climate goals, as it provides a means to offset unavoidable emissions from industries and balance the global carbon budget.

AGENDA

Day 1: October 09th

Schedule :

8:00 – 8:30 | Conference Registration

8:30 – 9:00 | Keynote 1: Jan Martin Nordbotten–Talk Title “CO2 storage: Experimental and computational validation”

9:00 – 10:30 | Session 1: Status of CCUS in the Nordic and Baltic Regions
Chair: Mayur Pal

- Justinas Jazbutis – Talk title “Advancing Carbon Capture and Storage in the Baltic Region.” – Duration: 15+5 min
- Apostolos Segkos – Talk title “From CO_2 to Critical Raw Materials: Scaling CCU Project in Estonia” – Duration: 20 min
- Erika Laajalahti – Talk title “Bio-based CCUS and Nordic integration.” – Duration: 15+5 min
- Ignas Vaičeliūnas – Talk title “Lithuanian Subsurface resources: An Overview.” – Duration: 15+5 min

10:30 – 10:45 | Coffee Break and Poster Presentation

10:45 – 11:15 | Keynote 2: Eve Tamme –Talk Title “Role of Policy in Scaling CCUS in the EU and the Baltic Sea Region”

11:15 – 13:00 | Session 2: Regulatory Framework and Public Perception

Chair: Alla Šogenova

- Clara Axblad – Talk title “Nordic Industrial Decarbonization & Public Perception.” – Duration: 15+5 min
- Paweł Gładysz – Talk title “CCUS markets and Regulatory Developments in Poland.” – Duration: 15+5 min
- Alva Nåmdal Kjensli – Talk title “CCUS Regulation and legal aspects.” – Duration: 15+5 min
- Ehsan Marzban – Talk title “Envisioning CCS in the Nordic Context: Trends, Uncertainties and Scenarios.” – Duration: 15+5 min

13:00 – 14:00 | Lunch Break

14:00 – 15:30 | Session 3: Carbon Capture and Storage in the Industrial Sector
Chair: Eglė Jankauskienė
Søren Reinhold Poulsen – Talk title “CCS progressing full speed ahead in Denmark – case examples Greensand (Offshore T&S) and Greenstore (Onshore T&S).” – Duration: 15+5 min

- Nathalie Brixy – Talk title “From Capture to Storage, some technical-economic challenges to optimise the value chain” – Duration: 15+5 min
- Mirosław Wojnicki – Talk title “Progress and Challenges in Developing CO_2 Storage Capacity in Poland.” – Duration: 15+5 min
- Alar Saluste – Talk Title “A Great Example of How Captured Carbon Could Be Utilized To Build The Future Industry in EU.” – Duration: 15+5 min

15:30 – 16:00 | Coffee Break and Poster Presentation

16:00 – 17:30 | Session 4: Commercialization Models for CCUS
Chair: Mayur Pal

- Shantanu Agarwal [online]– Talk title “Enhanced Rock Weathering for farmer resilience and climate action in Indian rice systems.” – Duration: 20+5 min
- Carlo Maccherini – Talk title “State of play of CCS in Europe.” – Duration: 20+5 min
- Aliaksei Patonia – Talk Title “Hydrogen & CCUS market.” – Duration: 20+5 min

17:45 – 19:00 | Site visit to UP Catalyst Facilities

19:00 – 21:00 | Conference Dinner and Networking Reception

Day 2: October 10th

Schedule :

09:00 – 09:30 | Keynote 2: Krists Mertens – Talk title “Brocēni carbon capture project and progress.” – Duration: 15+5 min

09:30 – 11:00 | Session 5: Technologies and Recent Advances in CCS
Chair: Janis Volberts

- Hannah P. Menke – Talk Title “AI and digital twins in CO_2 storage.” – Duration: 20+5 min
- Shruti Malik – Talk Title “Pore and Field Scale Computational Simulation of CO2 Subsurface Storage”- Duration: 20+5 min
- Eugene Holubnyak – Talk title “CCUS and Challenges with Porespace and Liabilities.” – Duration: 20+5 min

11:00 – 11:30 | Coffee Break and Poster Presentations

11:30 – 13:30 | Session 6: Case studies from regions and countries
Chair: Alla Šogenova

- Mai Uibu – Talk Title “Reclaiming Mining and Industrial Waste for Use in Green Building and Metal Recovery.” – Duration: 20+5 min
- Kazbulat Šogenov – Talk Title “Techno-Economic CCUS Modelling for the Baltic Offshore Cross-Border Scenario Using Direct Injection from Ships” – Duration: 20+5 min
- Alexandra Dudu – Talk title “Status of carbon capture and storage in Romania” – Duration: 20+5 min

13:30 – 14:30 | Lunch Break

14:30 – 15:45 | Panel Discussion: Carbon Capture, Utilization, and Storage: A Solution to Climate Change or a False Hope?
Moderator: Parsa Alimohammadiardakani

- Sayuri Shirai [online], Asian Development Bank
- Janis Volbert, Bellona
- Alva Nåmdal Kjensli, IOM Law
- Eugene Holubnyak, University of Wyoming, USA.

15:45 – 16:00 | Closing Remarks & Farewell

SPEAKERS

Alar Saluste

Bio: He is the COO of R-S OSA Service OÜ, the subsidiary of the environmental company Ragn Sells Group. Under his leadership, the company is implementing an innovative circular economy project aimed at producing ultra-pure and climate-neutral calcium carbonate by valorizing oil shale ash from the electricity industry. Alar has extensive experience in engineering and project management, leading both local and international engineering and production projects in the fields of water and wastewater treatment, circular economy concepts, chemical industries, and crude oil refineries across Europe, the Far East, and Russia. His previous positions include project manager roles at Aqua Consult Baltic OÜ, FLUOR B.V., Eesti Energia AS, and the University of Tartu. Alar holds a master's degree from the University of Tartu in environmental technology. He has published numerous articles in international scientific journals and author in 2 patents.

Title: A Great Example of How Captured Carbon Could Be Utilized to Build the Future Industry in EU.

Summary: More than 140-year Ragn-Sells has been in the forefront of utilizing waste and in last 20 year focused on developing circular economy project that can potentially change the world. We have in our portfolio many exciting new projects. This experience and knowledge have resulted in one of the projects we call Ragn-Sells OSA project that is focused on using industrial waste and CO_2 (that is also an industrial waste) for making circular products that can utilize CO_2, by removing it from the environment and at the same time can produce valuable raw materials for EU and global industry.
Our closest goal is to start commercially producing precipitated calcium carbonate from Ca and Si rich industrial waste (like oil shale ash) in large scale. Now we are building a demonstration plant in Narva, Estonia that will be the final step before commercialization of the production process.

Alexandra Dudu

Bio: The head of CO_2 geological storage department within GeoEcoMar, Alexandra is a geophysicist graduated from the Faculty of Geology and Geophysics – University of Bucharest, with a PhD Degree in Geology and a master in Evaluation of Sedimentary Basins. She is deeply involved in the research of CO_2 geological storage and participated in many national and international projects.

Title: Status of carbon capture and storage in Romania.

Summary: Romania is committed to reducing emissions and meeting European climate targets, with growing interest in CCS from both hard-to-abate industries and major oil and gas companies. Under the Net Zero Industry Act (NZIA), Romanian companies face a storage target of over 10 million tonnes per year until 2030, among the largest in the EU. The regulatory framework is centered on the CCS Directive, transposed in 2011 and approved as Law in 2013, followed by specific procedures for granting exploration and storage permit by the National Regulatory Authority for Mining, Petroleum and Geological Storage of Carbon Dioxide.
Recently, important modifications have been made to the CCS law for harmonization with Petroleum Law and efforts undergo for elaboration of secondary legislation on CO_2 transport. Regarding CO_2 geological storage, Romania has a great potential, onshore and offshore, especially since it has more than 160 years of oil and gas exploration and exploitation. Due to the country's strategic location, different possibilities for cross-border cooperation for implementation of CCS can be seen also as an important opportunity.

Aliaksei Patonia

Bio: A Research Fellow at the Oxford Institute for Energy Studies, focusing on commercial hydrogen development within the Hydrogen Research Programme. He explores challenges and opportunities in the hydrogen value chain, drawing on prior energy sector experience in Europe and Southeast Asia. Alex holds graduate degrees from the Universities of Liverpool, St Andrews, and Oxford.

Title: Hydrogen and CCUS markets – numbers, projects, policies.

Summary: Hydrogen and CCUS are frequently portrayed as rival solutions, yet in practice they are evolving into complementary markets with distinct roles in industrial decarbonization. Clean hydrogen is currently emerging around regional hubs, where production is located close to demand centers, with trade occurs mainly through derivatives such as ammonia and methanol rather than bulk H_2. By contrast, CCUS is taking shape as a service-based 'waste management' market, focused on CO_2 transport and permanent storage, with revenues underpinned by policy incentives.
This presentation will compare the scale, business models, and policy drivers of hydrogen and CCUS, drawing on real-world data and flagship projects such as Northern Lights, Porthos, and the US Regional Clean Hydrogen Hubs. It will argue that while green hydrogen is expanding, it is unlikely to scale rapidly or cheaply enough in the near term. Consequently, CCUS remains indispensable for low-carbon hydrogen and hard-to-abate sectors, making these technologies interdependent rather than competitive in shaping future low-carbon markets.

Alva Nåmdal Kjensli

Bio: A legal assistant at IOM LAW, Alva works on projects related to CCS, CCUS, negative emissions technologies, and the energy transition in the EU. She is currently studying law at the University of Oslo, where she also holds a bachelor's degree in International Relations with a focus on international law and conflict resolution.

Title: CCUS Regulation and legal aspects.

Summary: Alongside the development of CCUS, regulations and policies have been established to create a framework for the legalization and governance of CCUS activities. This presentation provides an overview of the current regulatory landscape governing cross-border CO_2 storage, and addresses the challenges posed by the Helsinki Convention. These legal considerations form the foundation for understanding the complexities of enabling safe, effective, and legally compliant cross-border carbon storage projects.
The second part of the presentation highlights both current and emerging developments within the EU, including the Emissions Trading System (ETS), the forthcoming CO_2 Transport Package, the new NIZA initiative, and anticipated future regulatory trends across the EU.

Apostolos Segkos

Bio: A chemical engineer with over a decade of experience in nanomaterials research. Dr. Apostolos holds a PhD in Chemical Engineering from the National Technical University of Athens, specialising in carbon nanomaterials and their applications in microelectronics. Dr. Segkos joined UP Catalyst in 2023 and, as Head of Development, leads multidisciplinary teams advancing core technologies for sustainable carbon materials derived from CO_2 emissions and biomass, driving innovation in the field.

Title: From CO_2 to Critical Raw Materials: Scaling CCU Project in Estonia.

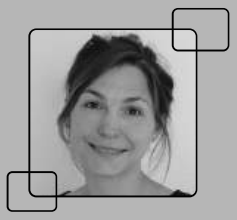
Summary: Graphite and carbon nanotubes are indispensable for energy storage technologies, yet their mining and conventional synthesis are linked to large environmental impacts. UP Catalyst, an Estonia-based deep-tech company, has developed an electrolysis process that transforms captured CO_2 into graphite and carbon nanotubes, eliminating fossil feedstocks and enabling a carbon-negative production pathway. Scaling such CO_2 utilization technologies presents both opportunities and challenges, including securing stable CO_2 supply streams, mitigating exposure to volatile electricity prices, and navigating regulatory frameworks. This presentation will highlight UP Catalyst's technology development and share lessons learned from Estonia's industrial and policy context in advancing CO_2–derived carbon materials for Europe's critical raw materials value chain.

Carlo Maccherini

Bio: A Senior BD Lead Europe for Global CCS Institute, Carlo has over 15 years of experience working in Business Development and Account Management roles for financial institutions, Private companies, European Institutions and Startups operating both in solar and energy storage.

Title: State of play of CCS in Europe.

Summary: An outlook on the state of play of CCS in Europe, which will include current project pipelines, local regulations and what is needed to achieve the 2050 net zero target. The focus will be on growth requirements, main ccs drivers, current status of CCS/CCUS projects and project locations.



Clara Axblad

Bio: Clara manages Bellona's work in the Nordic countries Denmark, Finland and Sweden. Focusing on industrial decarbonization, Clara's work spans energy systems, CCS, CCU and CDR. Before joining Bellona, Clara worked for the United Nations and Sweden on sustainable development and climate action, including on green economic policy at UNEP in Geneva, and on sustainable food systems, biodiversity and climate resilience at FAO and the Permanent Representation of Sweden to the UN in Rome.

Title: Industrial Decarbonization in the Nordics: Public Perception & Progress.

Summary: CCS is necessary to help decarbonize heavy industry in Europe and meet our climate targets. The Nordic countries are making important progress to decarbonize their own industry, while also acting as front-runners, innovating capture and transport solutions and developing CO2 storage available to other countries. In several instances, public funds are used to support these developments. But is the public on board, and how will their views on CCS affect the progress made? This presentation will explore the importance of public perception in shaping industrial decarbonization, drawing on recent surveys and examples.

Ehsan Marzban

Bio: A futures researcher and currently a postdoctoral researcher at the Department of Social Sciences and Philosophy, University of Jyväskylä. His expertise lies in futures studies with a focus on energy governance, and he has experience in the socio-political dimensions of Carbon Capture and Storage (CCS) technologies.

Title: Envisioning CCS in the Nordic Context: Trends, Uncertainties and Scenarios.

Summary: The presentation will explore the possible futures of CCS-related technologies, focusing on key drivers and uncertainties affecting their deployment. Despite its potential as a bridging technology toward a low-carbon future, CCS faces significant technical, social, political, and economic challenges. The study analyses 15 critical factors and identifies four primary driving forces, drawing on insights from the Nordic region. It applies the Generic Futures framework to develop four scenario archetypes that illustrate potential growth pathways and future images for CCS by 2050. The presentation concludes with policy implications offering guidance for navigating uncertainty and addressing resilience in sustainable carbon management.

Erika Laajalahti

Bio: The Sector Manager for Carbon Removal and Carbon Capture, Utilization, and Storage (CCUS) at the Bioenergy Association of Finland, representing the interests of the bioenergy and biochar sectors. Erika leads the association's committee on CDR and CCUS and is dedicated to positioning Finland as a global leader in developing sustainable, bio-based and even carbon-negative solutions. Erika has background in environmental economics, and she has been with the association since 2016.

Title: Bio-based CCUS and Nordic integration.

Summary: The presentation provides an overview of bio-based CCUS initiatives currently under development in Finland. It examines recent developments in the Finnish regulatory landscape governing CCUS deployment, together with EU-level drivers, and considers their implications for project development. The discussion also addresses the broader regional dimension, underscoring the necessity of coordinated action among Nordic and Baltic countries. Such collaboration is highlighted as a key enabler for building cross-border value chains, aligning infrastructure, and ensuring that CCUS contributes effectively and in a timely manner to shared climate goals.

Eugene Holubnyak

Bio: The director of latest center of excellence in the University of Wyoming School of Energy Resources (SER), taking the helm in the Hydrogen Energy Research Center (H2ERC). Before joining SER, Holubnyak established himself as an expert in carbon capture, utilization and storage (CCUS), with more than 14 years of experience in applied geoscience and energy-related research. He previously served as a CCUS program lead at Kansas Geological Survey and spent substantial time working on the Plains CO2 Reduction.

Title: CCUS and Challenges with the Pore-space and Liabilities.

Summary: Pore space, a seemingly unlimited resource, is becoming increasingly scarce due to growing demands for energy generation and production. This resource is application and location-specific and is increasingly becoming a subject of competition between entities and applications. With new CCS and Hydrogen projects in development, competition for the pore space will only increase, making some prospective locations for hub development infeasible.

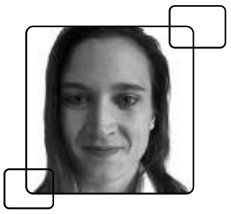
This paper discusses methods for accurately locating projects, citing previous examples from North Dakota, Texas, Kansas, Oklahoma, and Louisiana in the USA. It examines state and federal policies and regulations, and how the experiences and direct competition of businesses, local governments, and stakeholders influence them. Existing and past legal actions in response to resource competition are considered, such as the KS legislative response by the Kansas Corporate Commission to induced seismicity and wastewater injection, and the Mosser v. Denbury pore space case. The study also explores new resource discovery, recognition, and enabling, as well as the challenges associated with alternative pore space options, such as basalts.

Eve Tamme

Bio: A seasoned climate policy expert with over 20 years of experience across government, intergovernmental organizations, and advisory roles, Eve is currently leading Climate Principles to guide clients on European and global climate strategies, including carbon markets and carbon capture technologies. She has held pivotal roles in Estonian and EU climate governance, notably building Estonia's Climate Department, advancing EU ETS reforms, and negotiating key agreements during Estonia's 2017 EU Council Presidency. A recognized thought leader, she chairs the Zero Emissions Platform, serves on boards like Puro.earth, and holds an MSc in Environmental Engineering from TalTech University.

Title: Role of Policy in Scaling CCUS in the EU and the Baltic Sea Region.

Summary: Both the EU and regional policies can accelerate the deployment of industrial carbon management as a key tool for achieving climate neutrality. Regulatory clarity, cross-border CO_2 infrastructure, and investment frameworks all play a role in unlocking CCS at scale. The session will illustrate how coordinated policy action can turn climate targets into industrial opportunities, while supporting both EU-wide decarbonization and cooperation in the Baltic Sea region.



Hannah P. Menke

Bio: An Associate Professor specializing in AI for GeoEnergy, Hannah is a co-founder of the GeoChemFoam project, and a co-leader of the DigiPorFlow group. Her work integrates fluid mechanics, computational modeling, and machine learning to develop data-driven solutions for energy, water, and environmental challenges. With a focus on sustainability and innovation, she bridges disciplines to advance scientific understanding and real-world impact.

Title: AI and digital twins in CO_2 storage.

Summary: Dissolution of minerals by reactive fluids governs key subsurface operations (e.g. CO_2 storage, geothermal, hydrogen, EOR), with injection and mineral properties producing patterns - from compact to worm holing - that reshape permeability, yet pore-scale simulation is prohibitively costly. We use our fast GeoChemFoam model to run 2D simulations on ultra-large, stochastic geometries spanning heterogeneity, flow, and reaction regimes, then train two surrogates: (1) a neural network that maps local image-derived features to Darcy-scale porosity and permeability updates, and (2) a reduced-order geochemical emulator using deep residual recurrent networks with a U-Net for approximate explicit time stepping. Integrated into GeoChemFoam, these models markedly accelerate computation and enable accurate upscaling to reservoir-scale volumes.

Ignas Vaičeliūnas

Bio: The Head of the Gas Storage Department at UAB "Minijos nafta" with 50 years of experience in petroleum geology. He graduated from the Gubkin Moscow Institute of Oil and Gas Chemical Industry.

Title: Lithuanian Subsurface resources: An overview.

Summary: The prevailing opinion is that the depths of Lithuania are not rich in resources. This is not true. There are many and various minerals in our depths: water from fresh to strongly saline, construction materials and raw materials, iron ore and oil, heat in the depths and cavities. Not everything has been explored. We do not use everything that we have discovered and explored rationally.
This report discusses resources that lie deep, with knowledge obtained during the search, exploration and production of hydrocarbons. A brief overview will be given of hydrocarbons, traditional, accumulated in structures, and those that remained in the source rocks - shales. There are great prospects for oil production on the Lithuanian Baltic Sea shelf. A pronounced geothermal anomaly has been identified in the southwestern part of Lithuania. We are rich, we can use our own resources, but we tend to import raw materials from other countries, transport pollutants to other countries. We want to be clean, ecological and "fluffy".

Jan Martin Nordbotten

Bio: A mathematician with a strong interest for interdisciplinary collaborations. Professor Jan Martin Nordbotten completed his PhD at the age of 22 as the youngest ever in Norway, and became a full professor at the age of 27. As early as in his PhD, he worked simultaneously on numerical analysis, while collaborating with environmental engineers on issues related to CO_2 storage. Nordbotten has co-authored papers with over 130 researchers, and was the primary author on the first text-book on modelling and simulation of CO_2 storage.

Title: CO_2 storage: Experimental and computational validation.

Summary: The fundamental physical mechanisms governing subsurface CO_2 storage are well known, and are supported by substantial experimental and theoretical work. However, as these physical mechanisms interact during injection and storage, new coupled dynamics may emerge. Such interactions are difficult to assess within the temporal and spatial constraints of a laboratory, and may be sensitive to computational issues within existing computer simulation software. In this talk, we review the main characteristics of subsurface CO_2 storage, and provide an overview of recent laboratory and computational studies verifying and validating our knowledge and simulation tools.

Janis Volberts

Bio: He joined Bellona to identify and support the role to be played by ports for industrial decarbonisation solutions, such as CO_2 capture, transport and storage. Janis' work is focused on projects in Central and Eastern Europe, with a particular emphasis on the Baltic region.

Justinas Jazbutis

Bio: Involved in floating LNG regasification project developments in EU, Latin America, SE Asia. Lately major focus on Carbon Capture Storage initiatives. Taking a role of PM for CCS value chain feasibility study performed by KN and international partners.

Title: Advancing Carbon Capture and Storage in the Baltic Region.

Summary: This presentation will provide an overview of the progress and challenges in developing CCS solutions across the Baltic region. It will highlight the CCS Baltic Consortium initiative, which has received PCI6 recognition and a €3.0 million studies grant in 2025 through the Connecting Europe Facility – Energy program, enabling decarbonization pathways for regional industries. Special emphasis will be placed on recent achievements, key focus areas for the near future.

Kazbulat Šogenov

Bio: Researcher at the Department of Geology at Tallinn University of Technology (Tall Tech) and founder and CEO of the SHOGenergy consulting company.

Title: Techno-Economic CCUS Modelling for the Baltic Offshore Cross-Border Scenario Using Direct Injection from Ships.

Summary: The Baltic scenario addresses CO_2 emissions from Estonia, Latvia, and Lithuania, focusing on transporting captured CO_2 to the E6 storage site offshore Latvia via pipelines and ships. Around 8.1 Mt/y of CO_2 from 16 plants in three clusters (including four sub-clusters) will be shipped from four ports, covering a total distance of 1820 km.
The costs for the conventional Baltic CCUS scenario were compared with the costs of the same scenario using direct injection from the ship. The possible economic benefits of the new injection technology will be discussed.

Mai Uibu

Bio: A senior Researcher at the Inorganic Materials Research Laboratory of Tallinn University of Technology (TalTech) and Program Manager for the Chemical, Materials, and Energy Technology specialization within the doctoral program in Engineering Sciences. She earned her PhD in 2008 with a dissertation on reducing CO_2 emissions in Estonia's oil shale-based power sector. Her research focuses on climate-neutral valorization of industrial waste —particularly oil shale ash — through CO_2 mineralization technologies. Since 2022, she has also served as Laboratory Test Coordinator at R-S OSA Service OÜ, supporting the advancement of applied development projects.

Title: Reclaiming Mining and Industrial Waste for Use in Green Building and Metal Recovery.

Summary: This study addresses the valorization of mineral and industrial waste streams through two synergistic pathways aimed at advancing sustainable construction and critical raw material recovery. The first pathway develops CO_2-reactive construction materials from mineral by-products—such as ashes, slags, and cement waste—that retain latent binding properties. These materials are engineered to sequester CO_2 from flue gases via accelerated carbonation, reducing carbon footprint. The second pathway targets the utilization of landfilled Ca-rich oil shale ash, a legacy waste exceeding 600 million tons. Through mineral carbonation, it is transformed into precipitated calcium carbonate (PCC), offering the first scalable application of this resource. Further processing enables in addition to selective calcium extraction, the hydrometallurgical recovery of magnesium, aluminum, and silica. The approach is supported by thermodynamic and process modeling, energy and material balance assessments, and CO_2 sequestration efficiency calculations. Outcomes include the creation of low-carbon, high-performance building materials and optimized extraction strategies for low-grade Mg resources, contributing to circular economy goals and near-zero-waste industrial practices.

Mirosław Wojnicki

Bio: A Geologist and Petroleum Engineer, Mirosław is currently working as an Assistant Professor at the Petroleum Engineering Department of the Oil and Gas Institute – National Research Institute (INiG – PIB), Poland.

Title: Progress and Challenges in Developing CO_2 Storage Capacity in Poland.

Summary: EU decarbonization makes CO_2 storage in Poland essential—especially for industries with unavoidable process emissions. The NZIA adds urgency: Orlen Group, controlled by the State Treasury, must secure 4.1 Mt of CO_2 storage capacity annually. Despite legislative delays, funding constraints, and public-acceptance challenges, momentum is building.

The Oil and Gas Institute – National Research Institute (INiG – PIB) and ORLEN Petrobaltic are advancing a Baltic Sea CO_2 storage readiness through laboratory testing, and multiscale modelling from pore space to regional appraisal. Supercritical CO_2 flow experiments on Cambrian sandstones (CM2pp), with before/after rock characterization, show pore-structure changes from salt precipitation, dolomite dissolution, and particle migration. Near-wellbore scale modelling in CMG-GEM indicate slight, and localized porosity shifts due to the drying front propagation, and salt deposition. At regional scale, PetroMod simulations explore CO_2 plume migration and pressure responses under different 30-year injection scenarios, also evaluating boundary-fault permeability to constrain leakage risk.

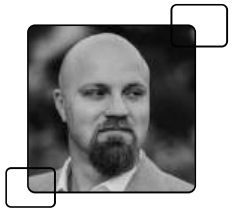
Maturation of Poland's offshore CO_2 storage area is further supported through Horizon Europe's COREu project (coordinated by SINTEF; grant 101136217), which includes deeper subsurface characterization, comprehensive risk assessment, and development of a full CCS chain concept.

Nathalie Brixy

Bio: A Senior Business Development manager for ZeCarbÒ, the dedicated brand of Messer SE & Co KGaA for "Carbon Capture Utilisation & Storage as a Service". With a background as a process chemical engineer, Nathalie has initially developed extensive experience in carbon dioxide management for merchant markets and acquired a broad understanding of the product "CO_2" useful for the CCUS development. With the experienced support of Messer Engineering team, Nathalie is now accompanying the hard-to-abate industrial sector in its efforts of decarbonisation, building the optimum sustainable solution along the entire CCUS value chain.

Title: From Capture to Storage, some technical-economic challenges to optimize the value chain.

Summary: The CCUS value chain is still in construction, starting from the carbon capture technologies, continuing with an emerging value chain. I will explore some still outstanding topics, such as CO_2 purity and phases, potential CO_2 losses along the supply chain.



Paweł Gładysz

Bio: Assistant Professor at the Faculty of Energy and Fuels, AGH University of Kraków, Poland, and the President of the CCUS Poland Association. Since 2010, he has actively contributed to numerous research and industrial projects encompassing thermal engineering, modeling and optimization of thermal processes - particularly focusing on carbon capture, utilization, and storage (CCUS) technologies and combined heat-and-power cycles. His expertise also extends to life cycle assessment, techno-economic analyses, as well as comprehensive energy policy development. As President of the CCUS Poland Association, Dr. Gładysz leads strategic initiatives aimed at fostering collaboration between industry, research institutions, and governmental bodies to advance the adoption and integration of CCUS technologies in Poland.

Title: CCUS markets and Regulatory Developments in Poland.

Summary: Poland's carbon capture, utilization, and storage landscape is rapidly evolving with new policy initiatives, establishing CCUS as a strategic tool to decarbonize hard-to-abate sectors such as cement and lime. Presentation provides an overview of the emerging CCUS market and regulatory framework in Poland, highlighting recent legal reforms like the 2023 amendment to the Geological and Mining Act that lifted barriers to full-scale CO_2 storage projects and simplified permitting. It identifies key legislative and institutional gaps that still need to be addressed – for example, the lack of clear CO_2 transport infrastructure rules and high barriers to accessing geological data for storage sites – and explains how ministerial working groups are tackling these challenges through ongoing initiatives. Finally, the presentation will discuss how CCUS is being integrated into Poland's updated National Energy and Climate Plan, which outlines a dedicated national CCUS strategy, legal framework improvements, and support mechanisms such as carbon contracts for difference to drive deployment in industry.

Krists Mertens

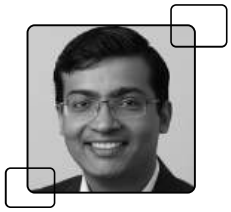
Bio: Director of Decarbonisation and Energy Projects at SCHWENK Latvija SIA. Mertens gained his experience in management and the energy sector in Latvia, having worked for Enefit for the last eight years. He has served on the company's Board of Directors since 2018 and as Chief Executive Officer and Chairman of the Board since 2020. Previous work experience related to financial consulting and banking sector. Mertens holds a Bachelor's degree in Engineering Economics from Riga Technical University and a Master's degree in International Business Administration (MBA) from Riga Business School.

Title: Brocēni carbon capture project and progress.

Summary: Developments since BCF 2024, with a focus on carbon management options of the Broceni cement plant managed by SCHWENK Latvija SIA. Overview of CC testing activities and main tasks for advancing the project.

Sayuri Shirai

Bio: She is a Professor of Economics at Keio University and an Advisor for Sustainable Policies at the Asian Development Bank Institute. In November 2023, she launched the ADBI-ADB Climate Finance Dialogue for financial supervisors and central banks. Her research and project focuses intensively on climate-related corporate disclosure, including various standards, carbon credits, avoided emissions, and financed emissions. Additionally, she works on bond integrity, climate finance, and transition finance frameworks. As a former central bank board member involved in monetary policy decisions, she also closely monitor central banks' actions, including their monetary and green policies.



Shantanu Agarwal

Bio: The founder and CEO of Mati Carbon, USA, Shantanu is a climate-tech entrepreneur with more than 20 years of energy industry experience. He has successfully founded number of companies in the past including Susteon, Sustaera in climate-tech domain.

Title: Enhanced Rock Weathering for farmer resilience and climate action in Indian rice systems

Summary: Mati Carbon partners with smallholder farmers to deploy basalt-based Enhanced Rock Weathering (ERW), improving farm incomes while delivering durable carbon removal. By integrating agronomic monitoring with a robust MRV system, Mati creates a pathway for smallholders to access future carbon markets and strengthens resilience in climate-vulnerable regions of the Global South.

At scale in central India, Mati has distributed more than 200,000 metric tons of basalt across Chhattisgarh and Madhya Pradesh. Deployment is tracked through control/treatment comparisons, crop yield surveys, biomass sampling, and farmer-level agronomic assessments. In the 2023 and 2024 Kharif (monsoon) seasons, rice yields increased by 14.4% (n=162) and 27.8% (n=44), respectively, on ERW-treated plots compared to controls. These results demonstrate that ERW can simultaneously enhance farmer productivity and generate high-quality CDR credits, building a model for gigaton-scale impact across the Global South..

Shruti Malik

Bio: She earned her Ph.D. from Indian Institute of Technology, Roorkee, India. She is working as a post-doctoral researcher in the Department of Mathematical Modelling, Kaunas University of Technology (KTU), Lithuania, supported by a research grant from Research Council of Lithuania. Her work focuses on assessing the feasibility of Lithuanian reservoirs for safe and long-term subsurface CO_2 storage.

Title: Pore and Field Scale Computational Simulation of CO_2 Subsurface Storage.

Summary: Carbon storage, a key component in the successful implementation of CCUS initiatives, requires reliable methods to predict and identify the most suitable conditions for subsurface CO_2 injection. This highlights the importance of a profound comprehension of CO_2 interactions with subsurface structures and environments, and the use of this knowledge to develop advanced and reliable simulations. Such simulations can predict the potential impacts of CO_2 storage on the subsurface, providing valuable guidance for future projects and studies.
The present work gives an overview of the role of pore-scale experiments in enhancing our understanding of CO_2 storage. Pore-scale (microfluidic) experiments provide critical data for the development of computational simulations by minimizing the variables that influence the results. The results obtained from these experiments are explained, followed by a discussion of the methods used to replicate the experimental results using computational simulations
.

Soeren Reinhold Poulsen

Bio: M.Sc. in Chemical Engineering, he has been working within the Oil and Gas Upstream business for more than 25 years in Denmark and internationally. Started as a drilling engineer, transitioned into becoming a Reservoir Engineer and has during the last 15 years been involved in large capital projects within project management and general Asset management. During the recent 3 years main focus, as Head of CCS, has been on supporting development of INEOS Energy's Danish CCS portfolio including (1) the Greensand first commercial CO2 offshore storage project, Future 1, with expected COD in early 2026 and (2) the Greenstore CO2 onshore storage project currently undergoing seismic acquisition efforts, further drilling of wells in 2026 and relevant midstream infrastructure maturation with anticipated start-up in 2030 provided appraisal results and offtake contracts warrants so.

Title: CCS progressing full speed ahead in Denmark – case examples Greensand (Offshore T&S) and Greenstore (Onshore T&S).

Summary: Several projects within carbon capture as well as transport & storage is progressing rapidly in Denmark. This presentation will focus on the INEOS operated Greensand first commercial project aiming to start storing CO_2 using direct ship injection in the Danish North Sea in the first half of 2026. Also, insights will be given into the maturation stage of one of the largest CO_2 storage sites being developed with main current activities related to 3D seismic acquisition, appraisal drilling and maturation of necessary midstream infrastructure.

PANEL DISCUSSION

Carbon Capture, Utilization, and Storage: A Solution to Climate Change or a False Hope?

CCUS could not receive the necessary promotion and was overlooked by the public as one of the solutions to carbon mitigation. Achieving the objectives of the Paris Agreement would not be possible by relying only on limited methods due to the pace of climate change. The panel discussion mainly targets the public audience to introduce them to CCUS, its challenges, and why it can play a key role in carbon mitigation and address their possible worries about the risks of CCUS. The panel discussion also targets the policy aspects, encouraging the public and policymakers to support change or improvement of laws and policies that facilitate the execution of CCUS. Eventually, the panel discussion aims to acquaint the public and improve their perception of CCUS to have a direct impact on the future of CCUS by discussing controversial topics and questions where it can answer public doubts and worries.

Parsa Alimohammadiardakani
Moderator
Kaunas University of Technology
Lithuania

Janis Volberts
Panelist
Bellonia
Latvia

Alva Nåmdal Kjensli
Panelist
IOM LAW
Norway

Sayuri Shirai
Panelist
Asian Development Bank Institute
Japan

Eugene Holubnya
Panelist
Wyoming School of Energy Resources
USA

PERVIOUS BCF CONFERENCES

BCF 2019 was held in hybrid format on October 22–23 at the Nordic Hotel Forum in Tallinn, Estonia. The event brought together 68 participants, including 30 speakers.

BCF 2020 took place fully online on October 14 due to the pandemic. The recording of the conference can be viewed at:https://www.youtube.com/watch?v=QP7ZF2Xj1xQ
(You can also watch it by scanning the QR code.)

BCF 2021 was also held fully online on October 15 due to the pandemic. The recording of the conference can be viewed at: https://youtu.be/9i_Enk9AhjU
(You can also watch it by scanning the QR code.)

BCF 2022 was organized in hybrid format on October 13–14 in Kaunas, Lithuania, with over 45 participants joining either onsite or online.

BCF 2023 was held in hybrid format on October 12–13 in Riga, Latvia, with more than 50 participants.

BCF 2024 took place in hybrid format on October 3–4 at the Radisson Hotel in Vilnius, Lithuania, with over 55 participants attending.

For more information, please visit the BCF archive:
https://www.baltic-carbon-forum.com/2025/archive/
(You can also access it by scanning the QR code below.)

BCF WORKSHOP

We are proud to announce BCF has organized its first workshop in hybrid titled as “Decarbonizing the Future - Innovation in CCUS, Geothermal, and Hydrogen” on September 15, 2025 at Mlab building in Kauns University of Technology, Lithuania.

The workshop explored the innovations and research trends in Carbon Capture, Utilization, and Storage (CCUS), Geothermal, and Hydrogen, emphasizing their role in transforming the energy landscape. Key themes included:

- Carbon Capture, Utilization & Storage (CCUS) – focused on industrial decarbonization through technology development and upscaling from demo projects to large CCUS networks.
- Geothermal Energy – advances in geothermal energy extraction were discussed, with a focus on enhanced geothermal systems (EGS) and co-production from hydrocarbon reservoirs.
- Hydrogen – it was evaluated as a flexible energy vector, with innovations in production, and subsurface storage.

Engaging sessions were led by Industry leaders , academic researchers, and students at all levels – fostering collaboration toward a low-carbon energy future.

Session Highlights:

- Direct interaction with industry experts in CCUS, Geothermal & Hydrogen Storage.
- Discovering the latest breakthroughs from academia and innovators in clean energy.

For more information, please visit the BCF at:
https://www.baltic-carbon-forum.com/2025/workshop/

Poster Presentations

Poster are presented during coffee breaks on October 9 and 10:

Poster 1
Authors: Abdul Rashid Abdul Nabi Memon, Mayur Pal
Title: Modeling Thermal Front Dynamics in Geothermal Reservoirs: Integrating Physics-Based Simulation and Data-Driven Approaches in Reducing Carbon Emissions.

Poster 2
Title: CTS project: CO_2 geological transport and storage in the Black Sea
Authors: Alexandra-Constanța Dudu, Yuliia Demchuk, Corina Avram, Ivan Virshylo, Mariia Kurylo, Roman Berenblyum, Nematollah Zamani, Paulo Mesquita, Gabriel Iordache, Andrei-Gabriel Dragoș, Constantin-Ștefan Sava , Lia Stelea, and Sorin Anghel

Poster 3
Title: CO_2 geological storage research in Romania
Authors: Alexandra-Constanța Dudu, Corina Avram, Gabriel Iordache, Andrei-Gabriel Dragoș, Constantin-Ștefan Sava , Lia Stelea, Sorin Anghel, Bogdan Marius Bărăităreanu

Poster 4
Title: Evaluation of solubility and mineral interactions during co-injection of CO_2 and H_2 into sandstone reservoirs
Authors: Apoorv Verma, Shankar Lal Dangi, Shruti Malik, Mayur Pal.

Poster 5
Title: Methodology of conserving carbon dioxide pollution through CCT and through carbon negative or carbon neutral methods with reference to architectural practices which use concrete.
Authors: Sargam Dey

Poster 6
Title: Methodology of conserving carbon dioxide pollution through CCT and through carbon negative or carbon neutral methods with reference to architectural practices which use concrete.
Authors: Tanisha Kumar, Shankar Lal Dangi

Poster 7
Title: Subsea CO2 transportation pipeline crack detection: An image processing approach to enhance the neural network performance.
Authers: Parsa Alimohammadiardakani, Mayur Pal.

Poster 8
Title: Microfluidic investigations of pore-scale flow dynamics for CO_2 Storage
Authors: Shruti Malik, Parsa Alimohammadiardakani, Mayur Pal.