

Natural Hydrogen: A New Frontier for Energy Geoscience

4-5th July 2023

The Geological Society (Burlington House, Piccadilly, London) & Virtual via Zoom

Provisional Programme

Day One	
08.30	Registration
08.50	Welcome
Session One: Natural Hydrogen Exploration Plays	
09.00	KEYNOTE: Actively exploring the midcontinent rift natural hydrogen play in the central mid west, USA <i>Avon McIntyre, HyTerra Ltd</i>
09.30	The Natural Hydrogen System – how success can be achieved through the system and play approach <i>Owain Jackson, H2Au Ltd</i>
09.55	Natural Hydrogen Exploration Workflows: Insights from South Australia <i>Grant McMurtrie, 2H Resources Pty Ltd</i>
10.20	Natural hydrogen in the Pyrenees and implications for exploration <i>Chris Atkinson, Helios Aragon</i>
10.45	BREAK
11.10	Why aren't there more native hydrogen accumulations? <i>Thomas Becker, Astris Advisors</i>
11.35	Defining an Architecture for Subsurface Hydrogen Play Concepts <i>Owen Sutcliffe, Halliburton</i>
11.55	DISCUSSION – What are the key geoscience knowledge gaps for Hydrogen Exploration?
12.15	LUNCH
Session Two: The Hydrogen System – Generation, Migration & Hosting	
13.15	KEYNOTE: Trapping processes of natural hydrogen in subsurface: The case of the emblematic H2 field of Bourakebougou (Mali) <i>Omar Maiga, IFPEN</i>
13.45 Virtual	Computation of vertical fluid mobility: Implications for hydrogen exploration and CO2 storage <i>Bhavik Lodhia, CSIRO</i>
14.10	Numerical Modelling of Hydrogen Migration and Trapping in Geological Settings: Comparisons between Natural Hydrogen and Petroleum Systems <i>Tiago Cunha, MARUM - University of Bremen</i>

14.35	Heterogeneity of serpentinization through a km-size upper mantle body: The Turon de Técoùère case (Pyrenees, France) Loiseau Keanu, <i>LFCR</i>
15.00	BREAK
15.20	KEYNOTE: How to quantify the initial and remaining potential of a H2 source rock? Isabelle Moretti, <i>UPPA</i>
15.50	A model of dynamic gas accumulation of hydrogen, helium, nitrogen and methane Marie-Christine Cacas-Stentz, <i>IFPEN</i>
16.15	Possible generation mechanisms for an organic hydrogen system John Hansen, <i>Independent</i>
16.40	DISCUSSION – Comparisons between the Hydrogen System and the Petroleum System
17.00	End of day one
17.00 – 18.00	Drinks Reception

Day Two	
08.30	Registration
08.50	Welcome
	Session Three: Global Occurrences & Habitats of Natural Hydrogen
09.00	KEYNOTE: Exploring Natural H2 in the Balkans Benoit Hauville, <i>45-8 Energy</i>
09.30 Pre-recorded	Natural Hydrogen Exploration in South Australia Elinor Alexander, <i>South Australia Department for Energy & Mining</i>
09.55 Virtual	Natural hydrogen and helium occurrences of the Eastern Trans-Australian Corridor (Darling-Curnamonda-Delamerian) in New South Wales, Australia Emma Black, <i>Geoscience Australia</i>
10.20 Virtual	Anatomy of a Natural Hydrogen Seep: An Example from the Yilgarn Craton in Western Australia Krista Davies, <i>Edith Cowan University</i>
10.45	BREAK
11.05 Virtual	KEYNOTE: Identification of Hydrogen-Rich Zones as a First Step in Natural Hydrogen Exploration in China Xueying Yin, <i>Beijing Santai-Tongdi Exploration Technologies Co. Ltd</i>
11.35	Surface Circular Depressions: how are they formed? A Western Australian Example Emanuelle Frery, <i>CSIRO Energy</i>
11.55	DISCUSSION – Trap vs flux – how are surface expressions important for discovering commercial hydrogen?
12.15	LUNCH
	Session Four: Natural Hydrogen Workflows, Techniques & Datasets

13.15	KEYNOTE: Natural hydrogen resource potential of the conterminous US Geoffrey Ellis, <i>USGS</i>
13.45 Virtual	Natural hydrogen – Estimating the resource, a case study from South Australia Adam Craig, <i>RISC Advisory</i>
14.10 Virtual	NATURAL HYDROGEN. Estimating the Resource: Flux vs. Accumulation, Tools for Evaluation and Analysis. Proposed Drilling Techniques Development Vitaly Vidavsky, <i>Curtin University</i>
14.35	A Mineral Systems Approach to Targeting Natural Hydrogen Deposits David Tierney, <i>GETECH</i>
15.00	BREAK
15.25	Early Exploration Services to aid in predicting the presence of Native Hydrogen at scale Ranald Kelly, <i>CGG</i>
15.50	A Statistical Approach as a tool for Native H₂ Exploration: A Case Study in the Western Pyrenean Foothills (SW France) Nicolas Lefeuvre, <i>CVA</i>
16.15	Assessing hydrogen migration and accumulation potential: characterisation of the Adelaide Geosyncline basement structures and their mineral fills Zak Milner, <i>Durham University</i>
16.40	Natural Hydrogen Exploration: Risk Assessment Gonzalo Zamora, <i>Repsol</i>
17.05	Conference Wrap Up
17.30	End of Conference

Posters	
	Biogeochemical hydrogen alteration of in hydrogen rich gas seeps from Italy Rebecca Tyne, <i>Woods Hole Oceanographic Institution</i>
	Helium, Hydrogen and Hydrocarbon exploration in the Amadeus Basin, Central Australia– exploration strategies for understanding the similarities and differences in play models Julie Daws, <i>Mosman Oil and Gas Ltd</i>
	The transport and accumulation of helium in a nitrogen-dominated reservoir Anran Cheng, <i>University of Oxford</i>
	Reassessing the role of magnetite during natural H₂ generation Ugo Geymond, <i>IPGP</i>
	A multiscale petrology study on Fe-rich clays minerals in fayalite-bearing gabbros within the Kansas (USA) Precambrian basement: an attempt to quantify natural hydrogen generated Valentine Combaudon, <i>IFPEN</i>
	Unlocking Tanzania's Helium Province Lorna Blaisse, <i>Helium One Global Ltd</i>
	Advanced Gas Mud logging in Natural Hydrogen settings Caroline Magnier, <i>Abysens</i>
	New Approaches to Helium Exploration Field Gas Sampling for Helium and Hydrogen- a trial study Mick Small, <i>Devil Resources Ltd. / Global Oil and Gas</i>

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