



BULLETIN DE VEILLE GEOSCOPIE n°52 – Juin 2018

Edito

Chers lecteurs, adhérents, membres et partenaires,

Avec toutes nos excuses pour cette période de 6 mois sans bulletin, due à une réorganisation du service de veille au POLE AVENIA, voici (enfin) le n°52 du bulletin de veille Géoscopie, avec sa sélection d'articles d'actualités, de brevets et de publications scientifiques sur toutes les techniques et technologies contribuant à une meilleure connaissance du sous-sol et à sa valorisation énergétique.

Des actualités technologiques où la tendance de fonds de la pénétration des nouvelles technologies numériques (big data, intelligence artificielle, deep learning, etc.) dans les géosciences se confirme assez nettement par un volume grandissant d'articles, et où on l'on voit également poindre les résultats des grands efforts de recherche publique en géothermie dans la dernière décennie, sous la forme de nombreuses publications et brevets

La base de données de veille technologique IP Metrix / Géoscopie contient aujourd'hui plus de 38000 articles. Elle peut être interrogée à tout moment, gratuitement pour les membres du POLE AVENIA sur une recherche basique mais personnalisée et ciblée à partir de vos jeux de mots-clés, par exemple en amont d'un projet de R&D ou d'innovation, pour évaluer l'état de l'art et de la concurrence, identifier les experts sur la ou les thématiques de votre choix, etc. N'hésitez pas contacter via geoscopie@pole-avenia.com!

Bonne lecture à tous !

L'équipe du POLE AVENIA

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ACTUALITES

Les Géosciences en France

18/06/2018 – Le pétrolier canadien Vermilion a plaidé sa cause à Bordeaux [\[source\]](#) - Les représentants de l'Union française des industries pétrolières (Ufip), ont pour la première fois inscrit Bordeaux, où ils sont venus le 14 juin, dans leur circuit national de sensibilisation à la cause de l'industrie du pétrole.

15/06/2018 – Portes ouvertes au laboratoire souterrain de sûreté nucléaire de Tournemire en Aveyron [\[source\]](#) - L'IRSN invite le public à découvrir des activités qu'il mène depuis qu'il s'est installé dans cet ancien tunnel ferroviaire du XIXe siècle de deux kilomètres, en 1989, sur « les mystères de l'eau dans l'argile ».

14/06/2018 – Les ondes sismiques à l'honneur du concours «Ma thèse en 180 secondes» [\[source\]](#) - Philippe Lebouteillier, doctorant en géophysique à l'Université Grenoble Alpes, a remporté le premier prix, ainsi que le prix du public, du concours «Ma Thèse en 180 secondes» pour sa thèse sur «la mesure de la propagation des ondes sismiques dans la terre».

04/06/2018 – La France veut relancer son industrie minière, au prix notamment d'une "Montagne d'or" controversée en Guyane [\[source\]](#) - Depuis 2012, la France ambitionne une nouvelle ère pour ses mines, en réformant notamment cette année le code minier, et en s'appuyant sur un méga projet contesté d'exploitation d'or en Guyane.

19/02/2018 – La transition énergétique ouvre une nouvelle page de l'histoire minière française [\[source\]](#) - C'est la face cachée de la transition énergétique : dans nos éoliennes, panneaux solaires et dans les batteries de nos voitures électriques, il y a des métaux stratégiques extraits pour la grande majorité en Chine dans des conditions environnementales désastreuses.

06/02/2018 - Un rapport suggère une refonte de la réglementation pour faire décoller la petite géothermie - La réglementation des forages de géothermie de faible profondeur est le principal frein à son développement. Elle est complexe, confuse, plus stricte que celle appliquée à d'autres forages similaires, et difficile à mettre en œuvre par les administrations concernées.

Nouvelles des membres du pôle

06/06/2018 - Le POLE AVENIA lance GEO-ENERGY EUROPE, un projet de dimension internationale. [\[source\]](#) - Le projet, coordonné par le POLE AVENIA vise à la mise en réseau de 8 pôles et clusters de la



valorisation du sous-sol énergétique du sous-sol (ou géo-énergie) de 7 pays européens et au développement d'une stratégie conjointe d'internationalisation de leurs PME sur les marchés internationaux de la géothermie profonde.

09/05/2018 – Febus Optics in the list of "Most Promising" Oil & Gas Startups of the Year [\[source\]](#)

18/04/2018 - Développement des EnR : L'IRIS et l'IFPEN lancent le projet GENERATE [\[source\]](#) - L'IRIS et IFP Energies nouvelles (IFPEN) lancent le projet GENERATE sur la Géopolitique des énergies renouvelables et l'analyse prospective de la transition énergétique.

30/03/2018 - Pau : le gazier TIGF devient Teréga [\[source\]](#) - TIGF n'est plus, vive Teréga ! L'entreprise gazière, implantée en Béarn, a dévoilé fin mars dernier sa nouvelle stratégie de marque.

15/03/2018 - Le stockage souterrain de la chaleur comme composant d'un système énergétique local pour la décarbonation des bâtiments [\[source\]](#) - L'optimisation des processus d'autoconsommation/autoproduction des ENR intermittentes pourrait être soutenue par l'introduction d'un stockage de chaleur souterrain dans un système multi-énergies au point de demande. Un démonstrateur est en cours de réalisation sur la plateforme « Géothermie » du BRGM.

15/03/2018 - CGG et Ardisis terminent l'étude sismique la plus dense jamais enregistrée [\[source\]](#) - CGG, en tant que partenaire technologique, et Ardisis, le spécialiste en acquisition sismique au Moyen-Orient, ont terminé avec succès l'acquisition de l'étude sismique à large bande de fréquences la plus dense jamais acquise au monde.

31/01/2018 - Total annonce une découverte majeure dans les eaux profondes du Golfe du Mexique [\[source\]](#) - Total annonce une découverte majeure avec le puits d'exploration de Ballymore, situé en eaux profondes dans la partie Est du Golfe du Mexique américain.

31/01/2018 - ENGIE, Storengy and Graziella Green Power to develop geothermal plant in Italy [\[source\]](#) - Graziella Green Power and French Storengy/ ENGIE have signed a development agreement to develop an innovative binary cycle geothermal plant, located in Castelnuovo Val di Cecina, in Tuscany/ Italy.

07/12/2017 – BRGM - En 2016, sept plateformes scientifiques ont ouvert à Orléans, au bénéfice, aussi, des entreprises - Ces outils servent, en premier lieu, aux chercheurs de l'Institut national de la recherche agronomique (Inra), du Bureau de recherches géologiques et minières (BRGM), du Centre national de la recherche scientifique (CNRS), de l'université d'Orléans, d'Antea groupe.



Marché de la géothermie

23/04/2018 - Research: How optimising positioning of geothermal wells can reduce seismicity [\[source\]](#) - A recent paper published by researchers of the Karlsruhe Institute of Technology looks at how the positioning of wells in a geothermal project can reduce seismicity when drilling.

09/04/2018 - The approach on micro-geothermal units receives prestigious Bloomberg award [\[source\]](#) - The approach on micro-geothermal units receives prestigious Bloomberg award Climeon CEO and Founder Thomas Öström at the Bloomberg Awards 2018.

09/03/2018 - Engineering Bits for Drilling Down Close to the Magma [\[source\]](#) - One of the hottest wells ever was drilled last year in Iceland, with a bit and mud motor from Baker Hughes surviving in a well surrounded by rock as hot as 426°C (static temperature).

07/03/2018 - Geothermal power: an alternate role for redundant North Sea platforms? [\[source\]](#) - Traditionally, once an oil or gas field reaches the end of its productive life, its production platform is decommissioned. Another alternative is becoming a more viable option – re-using the platform to extract geothermal energy.

01/03/2018 - A Cachan, grande première dans la géothermie avec un forage sub-horizontale Pour la géothermie, c'est une première. Et c'est la filiale services énergétiques d'EDF, Dalkia, qui la réalise à Cachan, dans le Val-de-Marne, dans le cadre de la rénovation du réseau de chaleur de la ville.

05/02/2018 - Seismicity research on ultra deep geothermal in the Netherlands receives EUR1.8m grant [\[source\]](#) - A geothermal project in Gelderland in the Netherlands has received a grant of EUR1.8 million for a seismic study to explore the potential for geothermal development in this region.

03/02/2018 - Premier forage de géothermie en région bruxelloise – Le projet Brugeo a pour objectif de valoriser le potentiel géothermique de la région bruxelloise, en particulier la géothermie peu profonde couplée à une pompe à chaleur.

22/01/2018 - German city starts pilot project exploring to use mine water for geothermal heating | [\[source\]](#) - A pilot project in Alsdorf near Aachen in the state of North Rhine Westphalia, Germany is to evaluate the feasibility of utilising geothermally heated water from old coal mining operations.

11/01/2018 - A greener way to get lithium? [\[source\]](#) - A newly improved sorbent could offer an environmentally friendly way to get lithium from a relatively untapped resource in the U.S: the brine produced by geothermal power plants.

Marché du stockage géologique

05/04/2018 - Rotterdam et Manchester tentent de prendre de l'avance sur la décarbonisation [\[source\]](#) - La capture et le stockage du CO2 gagnent en rentabilité avec la valorisation de l'hydrogène imaginée dans le nord de l'Angleterre. Au Pays-Bas, un gazoduc pourrait acheminer le CO2 vers d'anciens gisements de gaz naturel.

15/03/2018 - Tracking technique could help keep captured CO2 stay underground [\[source\]](#) - Scottish Carbon Capture and Storage confirms that chemical tracers added to sequestered CO2 can give an early warning of leakage.

14/03/2018 - \$2.5M grant funds real-time monitoring of underground carbon sequestration [\[source\]](#) - Researchers from Penn State, Lawrence Berkeley National Laboratory, and the University of Texas at Austin are partnering on a new \$2.5-million project to illuminate what happens to carbon dioxide during underground sequestration. The team will use seismic data collected through a novel real-time monitoring system to track the spread of carbon dioxide underground.

15/02/2018 - Big Oil CEOs Urge Norway to Throw a Lifeline to Carbon Capture [\[source\]](#) - Three of the world's biggest oil companies called on Norway to help maintain funding for carbon capture and storage technology that is stagnating amid concerns about whether it can ever be cost-effective.

06/02/2018 - EU to have third attempt at financing CO2 storage - The European Parliament is due to vote on legislation on 6th February which would set up a potentially multi-billion euro fund to support projects in the field of innovative renewable energy, carbon capture and storage (CCS), and recycling CO2 as a resource

01/12/2017 – Pilot study aims to determine feasibility of underground carbon dioxide storage in North Dakota - "When they get that code fully cracked, that could be a huge benefit to the state to take the unbelievable oil play and enhance its production by using CO2," said Mike Holmes, vice president for research and development for the Lignite Energy Council.

Techniques et technologies pour les géosciences



24/04/2018 - Boring technology makes for deeper and safer wells [\[source\]](#) - Thermal borehole enlargement is a technique, which locally increases the well diameter by utilizing the thermal spallation process to excavate rock on the sidewalls of an existing borehole.

24/04/2018 - Total partners with Google Cloud to apply AI to subsurface data interpretation [\[source\]](#) - Total and Google Cloud have agreed to jointly develop artificial intelligence (AI) solutions applied to subsurface data analysis for O&G exploration and production. The agreement focuses on the development of AI programs that will allow to interpret subsurface images, notably from seismic studies and automate the analysis of technical documents.

29/03/2018 - Le sous-sol suisse est décrit en échographie 3D [\[source\]](#) - Swisstopo et le Service géologique national ont mis au point un modèle permettant de voir la géologie du sous-sol molassique suisse en trois dimensions. Un instrument très utile pour les recherches géothermiques ou la construction de tunnels.

26/03/2018 - Hunting accesses microbe stimulating enhanced oil recovery technology [\[source\]](#) - The OOR (Organic Oil Recovery) process involves stimulating the growth of specific species of indigenous microbes within producing reservoirs, which have the effect of reducing the physical size of trapped oil droplets, enhancing production rates at a fraction of the cost of alternate EOR technologies.

08/03/2018 - L'innovation, nouvelle frontière des pétroliers [\[source\]](#) - Pour réduire leurs coûts, les entreprises du secteur ont misé sur la technologie Emerson a, par exemple, développé un système qui simule entièrement le processus d'exploration, de production et de distribution.

08/03/2018 - Geoscience BC, UBC to monitor groundwater for methane in gas [\[source\]](#) - To address persistent concerns that hydraulic fracturing could result in methane seeping into ground water, Geoscience BC and the University of BC have launched a new monitoring project in which 30 wells in the Peace region will be monitored for methane and other hydrocarbons.

02/03/2018 - Fuel Tech announces agreement for dissolved gas technology for water treatment - Demand for water and wastewater treatment is growing and Fuel Tech has identified several potential end markets for Nano2's technology, including utility and industrial wastewater treatment, oil and gas fracking and the pulp and paper markets.

06/02/2018 - China publishes world's first big data journal on geoscience - China has started publishing

the world's first big data journal on earth sciences, the Institute of Remote Sensing and Digital Earth. Big data on the earth is a new area of geoscience and a new tool for understanding the earth.

04/02/2018 - EOR using alumina nanofluids increases rock wettability [\[source\]](#) - Researchers from Egypt ran a series of core flooding experiments to determine the effect of different concentrations of aluminum oxide (alumina, Al₂O₃) nanoparticles. An ultimate recovery factor of 81.13% at 10 g /l. alumina nanofluid led to...

08/01/2018 - HPC Optimizes Energy Exploration for Oil and Gas Startups [\[source\]](#) - In its quest to meet the world's ever-increasing demand for energy, the oil and gas industry has become one of the largest users and leading innovators of high performance computing.

14/12/2017 - Canadian Ultra-Deep Mining Network (UDMN) recognizes Mira Geoscience's hazard reporting software [\[source\]](#) - The award recognizes a technical innovation that is quickly becoming the industry's reputedly most comprehensive and advanced real-time geotechnical data management and hazard reporting system.

05/12/2017 - Using Dark Fiber to Detect Earthquakes, Water, and Other Geophysical Phenomenon [\[source\]](#) - Scientists from the Berkeley Lab have shown for the first time that the vast network of unused fiber-optic cables installed throughout the country and the world - can be used as sensors for detecting earthquakes, the presence of groundwater, changes in permafrost conditions, and a variety of other subsurface activity.

01/12/2017 - Best of 2017: Drilling, Cementing Technologies Recognized For Innovative Designs

30/11/2017 - Strengthening the Regulation of Enhanced Oil Recovery to Align It with the Objectives of Geologic - Capturing carbon dioxide from large point sources, such as power plants and refineries, and permanently disposing of it in deep underground geologic formations through a set of technologies known as carbon capture and geologic sequestration (CCS) can complement the mainstay efforts.

29/11/2017 - Geoscience prof to lead national network for cross-disciplinary education in responsible resource - ReDeveLoP will produce future leaders that will both drive innovation and serve as ambassadors to help bridge the public discourse.

02/11/2017 - Exa Launches DigitalROCK on the Cloud for Enhanced Oil Reservoir Performance [\[source\]](#) - Exa brings its 25 years of expertise and patented algorithms in fluid flow physics to the O&G industry. Automated cloud solution generates reservoir rock permeability results directly from digital scans.

LES PROJETS COLLABORATIFS

2018 - ANR [\[source\]](#) - Retrogression of the resistance of cements of high temperature wells: microstructural origins and methods of remediation - IFSTAR (FRANCE)
- Abstract In the structure of oil and geothermal wells a cement sheath is placed between the rock and the casing for the stability and the sealing of wells. This project concerns the cement sheath integrity in areas of high temperature (110 ° C, below 4km depth). The hydration of cement under high temperature results in a retrogression of the resistance, in the form of a gradual reduction of mechanical properties.

2018 - ANR [\[source\]](#) - Exploration of geological resources and the reservoirs by Geophysical properties of clays - BRGM (FRANCE); INST IC2MP CHIMIE MILIEUX MATERIAUX POITIERS (FRANCE); INSTITUT DE PHYSIQUE DU GLOBE DE STRASBOURG (FRANCE); IRIS INSTRUMENTS (FRANCE); METIS MILIEUX ENVIRONNEMENTAUX (FRANCE) - Abstract Until recently, exploited groundwater resources were especially non-renewable. Now, the potential of energy storage or the exploitation of geothermal energy are major issues of the energy transition. Not only the basement can provide energy, but it is a huge CO2 sequestration storage space, but also for vectors of de-carbonees energy.

2018 - 2021 - GTR [\[source\]](#) - Geomechanical Assessment of CO2 Storage Reservoir Integrity Post-closure (GASRIP) - CTR NATL OCEANOGRAPHY (UK) - ABSTRACT Injecting carbon dioxide (CO2) into deep geological formations is recognized worldwide as the only realistic mitigation technology that can reduce current anthropogenic CO2 emissions to meet national targets by 2050. However, Carbon Capture and Storage (CCS) have aroused public concerns over potential surface leakage of CO2 from geological reservoirs, limiting the number of potential storage sites.

2018 - ANR [\[source\]](#) - Toward a better assessment of the impact of hydraulic damage for geo-engineering applications - 3SR SOLS SOLIDES STRUCTURES RISQUES (FRANCE); GEORESSOURCES; INST IC2MP CHIMIE MILIEUX MATERIAUX POITIERS (FRANCE); INST IMSIA SCIENCES MECANIQUE APPLICATIONS INDUSTRIELLES (FRANCE); INST ISTERRE SCIENCES TERRE (FRANCE); IRSN (FRANCE) - Abstract Predict the appearance of hydraulic damage in geological circles represents a major challenge to a sustainable use of the basement. Indeed, exploitation of resources (geothermal), underground storage (waste, CO2) or even the management of works (tunnel, mine) can be affected



by a progressive damage due to the circulation of fluid in deformable environments.

2018 - 2021 - GTR [\[source\]](#) - Novel multi-scale 3D/4D characterization of pore networks in tight rocks: Enhanced understanding of clean gas extraction and safe carbon sequestration - UNIV MANCHESTER (UK) - ABSTRACT Delivering affordable energy and clean growth' is a crucial goal in the green paper Building Our Industrial Strategy. Clean gas extraction and safe carbon storage, are two essential aspects in achieving this goal. The precise reconstruction of the pore networks and understanding gas transport in tight rocks under subsurface conditions is a core problem in these areas.

2018 - 2019 - GTR [\[source\]](#) - Fibre-optic distributed Acoustic Sensor Technology for seismic Monitoring During shale gas Extraction (FAST-MoDE) - AGENCY ENVIRONMENT (UK); CHEVRON (USA); SILIXA (UK); UNIV BRISTOL (UK) - ABSTRACT Microseismic monitoring during hydraulic stimulation allows operators to monitor the development of fractures as they propagate. They can then optimise their operations, while ensuring that they are conducted in an environmentally safe manner.

2017 - 2019 - EU project [\[source\]](#) - Support to the activities of the European Technology and Innovation Platform on Deep Geothermal - CNR (ITALY); EUROPEAN GEOTHERMAL ENERGY COUNCIL (BELGIUM); INST FLEMISH TECH RESEARCH VITO (BELGIUM) - The overarching objective of the new ETIP- "Deep Geothermal" is to enable deep geothermal technology, in particular Enhanced Geothermal Systems (EGS), to proliferate and move from the current European R and D and pilot-sites to other European countries and different geological situations. The primary objective is overall cost reduction, including social, environmental and technological costs.

2017 - ANR [\[source\]](#) - Seismometer optics to High Performance - ENSA ENVIRONNEMENT (FRANCE); LAB OPTIQUE ATMOSPHERIQUE LOA (FRANCE); LAB PHYSICO CHIMIE ATMOSPHERE (FRANCE) - Abstract We propose to develop and qualify a Seismometer optical (laser) innovative, high-resolution and low-cost, to improve surveillance in time-teel of regions of telluric hazard high (earthquakes, volcanoes, landslides, tsunamis...), as well as areas of exploration, production and storage of the basement (geothermal energy, oil, gas, deep mines, storage of CO2 and nuclear waste...) for purposes of safety and production.



AGENDA DU POLE AVENIA ET DE SES PARTENAIRES

Date	Événement	Lieu
3-5 Juillet 2018	GEOENERGY DAYS – Exhibits, Conferences, B2B & visits organisés par le POLE AVENIA. Pays invité : l'Algérie - Thématique de la conférence technique : l'EAU dans les industries de la géo-énergie.	Palais Beaumont PAU, France
11-12 Septembre 2018	CELLE DRILLING 2018 - International Conference and Exhibition for Advanced Drilling Technology, organisée par GeoEnergy Celle . Le cluster THOMS sera présent avec plusieurs PME membres	Celle, Allemagne
14-17 Octobre 2018	GRC ANNUAL MEETING & EXPO 2018 – Le cluster français GEODEEP sera présent et animera session & workshop on « risk mitigation »	Reno, Nevada, USA
12-15 Novembre 2018	ADIPEC 2018 Abu Dhabi International Petroleum Exhibition & Conference. Le cluster THOMS sera présent avec plusieurs PME	Abu Dhabi, EAU
27-29 Novembre 2018	PETEX 2018 (largest subsurface focussed E&P event in the UK). Invest in Pau sera présent avec 5 PMEs membres du POLE AVENIA	Londres, GB
11-14 Juin 2019	EUROPEAN GEOTHERMAL CONGRESS (EGC) 2019, organisé par l' EGEC	La Haye, Pays-Bas

COMMUNICATION DU POLE AVENIA

GEOENERGY DAYS

INTERNATIONAL CONVENTION FOR SUBSURFACE INDUSTRIES

EXHIBITS – B2B MEETINGS – CONFERENCES – BUSINESS TOURS

3rd - 5th JULY 2018, PAU - FRANCE

A UNIQUE OPPORTUNITY TO DEVELOP YOUR BUSINESS, IDENTIFY NEW PROJECTS AND PARTNERSHIPS !

GEOENERGY DAYS :

- 2-days business meetings, conferences & workshops
- 1 day visit of some pioneer companies

GEOENERGY DAYS is the **first international event in France** offering opportunities to grow business, develop partnerships and share skills and know-how in **subsurface industries**.

- oil & gas
- deep geothermal energy
- geological storage
- mines and quarries

Map locations: LONDON, BERLIN, PARIS, PAU

Logos: Nouvelle-Aquitaine, PAV, INVEST PAV, TOTAL, POLEAVENIA Geosciences Innovation Valley

INTERNATIONAL BUSINESS CONVENTION FOR ALL PROFESSIONALS FROM SUBSURFACE ENERGY INDUSTRIES

FOR WHOM ?

For all professionals (SMEs, companies, research and training organizations, public bodies, local authorities...) from the subsurface energy industries :

- Geoinformation & Geomatics
- Geophysics & Geomodelling
- Drilling & Well equipments
- Logging & Monitoring
- Reservoir management & EOR
- Energy efficiency
- Facilities optimization
- Software development
- Safety & environmental services
- Specialized training and human resources
- ...

ABOUT ?

Develop business in Algeria

- Opportunities of energy – SONATRACH
- Keys of success to develop your activity – BUSINESS France
- Feedback of some French companies

Water in geoenergy

- Water in the geoenergy industries
- What's new in geoscience and water ?
- New trends in water treatment technologies
- Water management and the energy transition: toward new paradigms?

Export business

- New approaches to finance innovation
- Intellectual property
- Risk management (banks, insurance...)

PARTICIPANTS

Guest country :
Algeria

Attending countries :

Azerbaijan	Nigeria
Belgium	Norway
Congo	Oman
Germany	Russia
Hungary	Spain
Iran	Turkey
Ireland	USA
Mexico	...

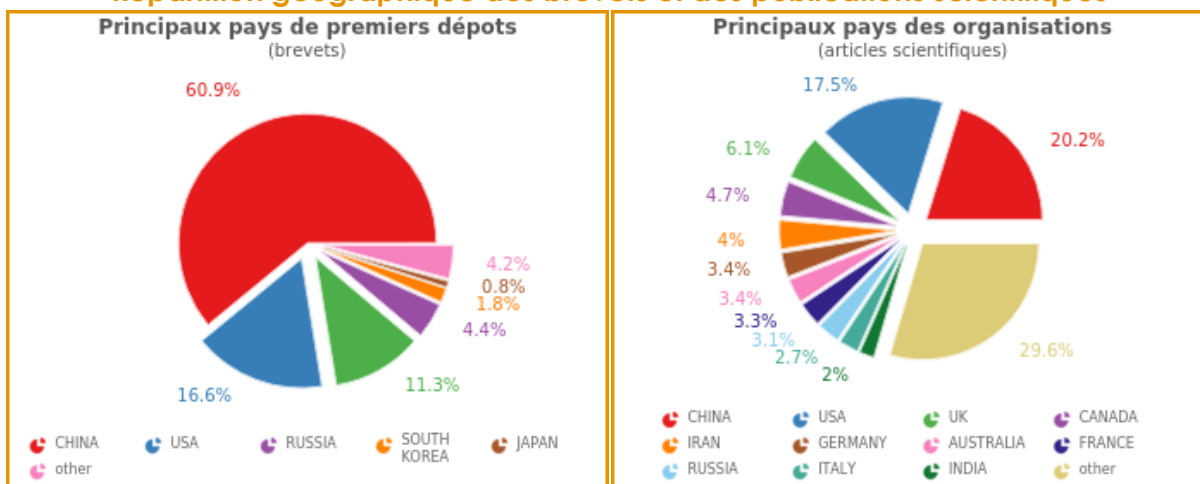
World map showing participating countries with location pins.

Contact: geoenergydays@pole-avenia.com

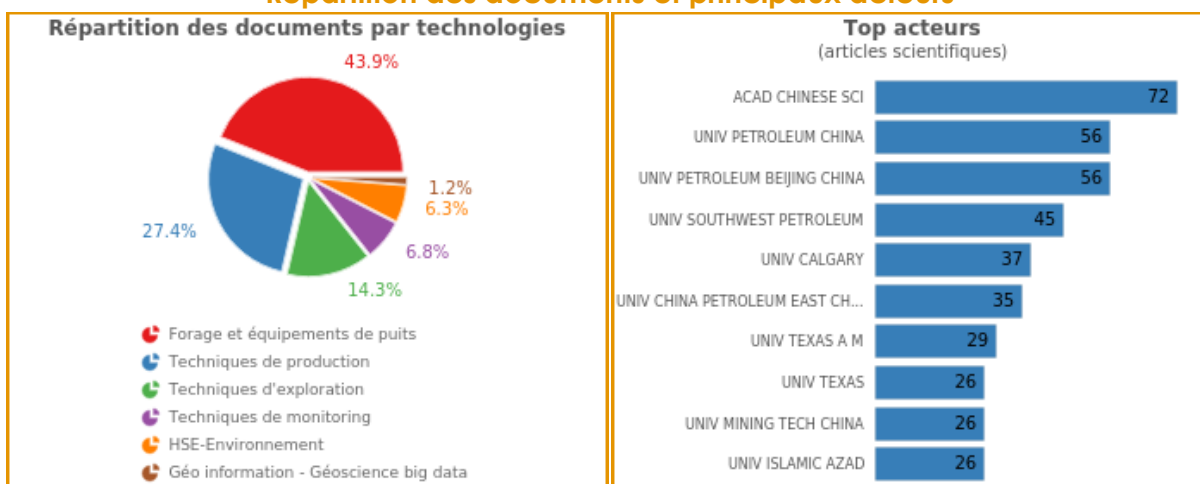


TABLEAUX DE BORD DE L'ACTIVITE SCIENTIFIQUE ET TECHNIQUE

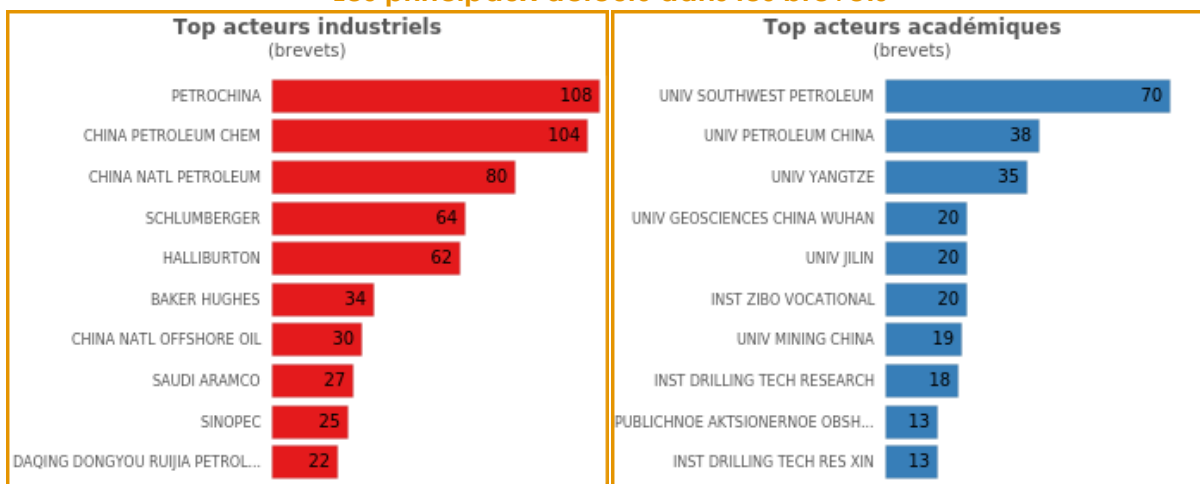
Répartition géographique des brevets et des publications scientifiques



Répartition des documents et principaux acteurs



Les principaux acteurs dans les brevets





LES BREVETS

Techniques d'exploration

20/04/2018 - [CN107942393](#) A DRILLING DIRECTION ACOUSTIC LOGGING DATA COLLECTING METHOD - INST GEOLOGY GEOPHYSICS CAS - The invention belongs to logging while drilling technology field specifically claims a drilling direction acoustic logging data collecting method. Drilling acoustic logging instrument in a certain depth at any drilling tool is rotated by using square is equal interval mode data collecting.

30/03/2018 - [CN107859515](#) A WELL LOGGING SOUND WAVE EMITTING UNIT - HANGZHOU RUILI ACOUSTOELECTRIC TECH (CHINA) - This invention claims a well logging sound wave emitting unit the magnetostrictive material and energy converting device is excitation source and rod type vibration generator vibration source to construct a transmitter acoustic sonde unit.

22/02/2018 - [WO2018035498](#) METHOD FOR FRACTURING ACTIVITY AND INTENSITY MONITORING AND PRESSURE WAVE RESONANCE ANALYSIS - PRAKLA SEISMOS (USA) - A method for characterizing a hydraulic fracture treatment both operationally and in a subsurface formation includes inducing a pressure change in a well drilled through the subsurface formation. At least one of pressure and a time derivative of pressure is measured in the well for a selected length of time.

01/02/2018 - [US2018031718](#) REAL-TIME PATTERN RECOGNITION AND AUTOMATIC INTERPRETATION OF ACOUSTIC REFLECTION IMAGES - BAKER HUGHES (USA) - Methods, systems, devices, and products for performing well logging in a borehole intersecting an earth formation to obtain and transmit an acoustic reflection image of the formation. Methods include identifying a set of features in the acoustic reflection image substantially fitting a pattern, wherein the set of features corresponds to a portion of at least one reflecting structural interface of the formation.

11/01/2018 - [WO2018007775](#) METHOD OF CHARACTERISING A SUBSURFACE REGION USING MULTIPLE POINT STATISTICS - TOTAL (FRANCE) - Disclosed are methods of modelling a subsurface region. One method comprises defining a plurality of variables for describing said subsurface region, each variable having a corresponding, domain set, neighbourhood set, and conflict set. The conflict set comprises conflict variables, which are previously assigned variable which reduces the domain set of its corresponding variable.

27/12/2017 - METHOD AND SYSTEM OF PROCESSING SEISMIC DATA BY PROVIDING SURFACE APERTURE COMMON IMAGE GATHERS - TOTAL (FRANCE)

21/12/2017 - MULTI-VESSEL SEISMIC DATA ACQUISITION SYSTEM - SERVICE CGG MASSY CEDEX

Forage et équipements de puits

30/03/2018 - [RU2649195](#) METHOD OF DETERMINING HYDRAULIC FRACTURE PARAMETERS - ULYANOV VLADIMIR NIKOLAEVICH (RUSSIA) - FIELD: oil and gas industry. SUBSTANCE: invention relates to oil production and can be used in hydraulic fracturing of a formation while simultaneously monitoring geometric and hydrodynamic fracture parameters in real time. Method includes measuring distributed temperature and pressure in a well, and then calculating the geometrical parameters of the fracture based thereon.

27/03/2018 - [CN207144875](#) INCLINOMETER DURING DRILLING WELL MOUTH DEVICE FOR FIXING - CHINA NATIONAL PETROLEUM CORPORATION WEST DRILLING ENGINEERING (CHINA) - This utility model relates to inclinometer during drilling mounting auxiliary tool technology field it is a inclinometer during drilling well head fixing device it comprises an opening relative to the arrangement of the left half ring chuck and right half ring chuck left half ring the chuck top end and right half ring the chuck top end through the first hinge joint shaft is installed on the other end of left half ring chuck.

27/03/2018 - [CN207148019](#) FIELD THERMAL PHYSICAL PROPERTY TESTER CALIBRATION DEVICE - UNIV SHANDONG JIANZHU (CHINA) - This utility model claims an in-situ thermal physical property tester calibration device of said device includes a sand box buried pipe loop and external pipe; Sand box buried pipe loop comprises a sand box the sand box is filled with even fine sand sand box the central horizontal place of drilling hole drill hole is inserted into the u-shaped ground pipe.



09/03/2018 - [CN107779183](#) WELL CEMENTING SLURRY LARGE TEMPERATURE DIFFERENCE RETARDING AGENT AND PREPARATION METHOD THEREOF - UNIV SOUTHWEST PETROLEUM (CHINA) - This invention claims a well cementing slurry large temperature difference retarder and its preparation method refers to petroleum exploration and development field cementing engineering.

12/01/2018 - [RU2640844](#) METHOD FOR RUNNING CASING STRING IN HORIZONTAL LONG-DISTANCE WELLBORE - INST FEDERALNOE GOSUDARSTVENNOE BYUDZHETNOE UCHREZHDENIE NAUKI ZEMNOJ KORY SIBIRSKOGO OTDELENIYA ROS (RUSSIA) - FIELD: oil and gas industry. Method includes drilling a horizontal wellbore interval drawdown, lowering the casing string. After the casing string has reached the depth of the production string shoe, the descent is stopped, an intermediate washing with drilling fluid is carried out with simultaneous controlled supply of nitrogen.

15/03/2018 - [WO2018047009](#) SYSTEM AND METHOD FOR USING GEOLOGICAL ANALYSIS FOR THE DESIGNING OF STIMULATION OPERATIONS - CGG (FRANCE) - Well completion is accomplished by obtaining a sample of geological material from the subsurface and generating primary data for the sample of geological material. The primary data include textural data, chemical data and mineralogical data.

15/02/2018 - [WO2018029454](#) METHOD AND SYSTEM FOR ANALYSING DRILLING DATA - DATA CLOUD INT (USA) - There is provided a method of analysing drilling data from a drilling operation in real-time, the method comprising a processor: receiving a real-time data stream of drilling data, wherein the drilling data is received from at least one sensor at the drilling operation and the drilling data is time-indexed and/or depth indexed.

15/02/2018 - [CA2974075](#) DURABLE ROCK BIT FOR BLAST HOLE DRILLING - VAREL INT IND LP - A rock bit for blast hole drilling includes: a bit body having a coupling formed at an upper end thereof, a plurality of lower legs, a dome formed between the legs, and a bore formed through the coupling and the dome; a plurality of skirts, each skirt covering a gap formed between adjacent legs and each skirt mounted to edges of adjacent legs.

14/02/2018 - [EP3282084](#) FIXED CUTTER DRILL BIT HAVING ROLLING CUTTERS - VAREL EUROPE (FRANCE) - A bit for drilling a wellbore includes: a shank having a coupling formed at an upper end thereof; a bit body mounted to a lower end of the shank; a gage section forming an outer portion of the drill bit; and a cutting face forming a lower end of the drill bit.

18/01/2018 - [WO2018011217](#) WEAR BUSHING OR BORE PROTECTOR RUNNING AND RETRIEVAL TOOL - TOTAL (FRANCE) - The present invention relates to a tool for running or retrieving a wear bushing or bore protector, comprising: - a tubular body, having an external diameter smaller than an internal diameter of the wear bushing or bore protector, the tubular body comprising threaded ends adapted to engage with drill strings, and - a plurality of gripping members adapted to engage on an interior portion of a wear bushing.

04/01/2018 - [WO2018005568](#) MEASUREMENT WHILE DRILLING IN CONSTANT CIRCULATION SYSTEM - SCHLUMBERGER (FRANCE) - A measurement while drilling system for making drilling-related and/or geological formation measurements and communicating measurement data to the earth's surface includes at least one sensor on a drill string proximate a drill bit for measuring a parameter and a transmitter of parameter measurements on the drill string proximate the at least one sensor.

Techniques de production

20/04/2018 - [CN107939460](#) USED FOR POWER LEVEL COMPRESSED AIR ENERGY STORAGE SYSTEM OF EXPANSION MACHINE - ACAD CHINESE SCI (CHINA) - The invention claims a high power level compressed air energy storage system of expansion machine it is mainly composed of high pressure gas storage tank pressure adjusting expander the expander motor heat exchanger heat resistance cold and hot water tank cold and hot water circulating pump hydraulic coupler adjusting valve and pipe circuit is composed of.

30/03/2018 - [CN107862160](#) COMPRESSED AIR ENERGY STORAGE SYSTEM THE FUTURE EVOLUTION NETWORK MODEL METHOD AND DEVICE FOR GENERATING - UNIV TSINGHUA (CHINA) - The invention claims a compressed air energy storage system the future evolution network model method and device for generating the method comprises the following steps: Collecting collecting electric network data and generating the transmission power distribution factor matrix and the electric network topological structure.



08/03/2018 - [US2018066504](#) GEOCHEMICAL METHODS FOR MONITORING AND EVALUATING MICROBIAL ENHANCED RECOVERY OPERATIONS - LAWSON MICHAEL (USA); ROBINSON AMELIA C (USA); STOLPER DANIEL A (USA) - Described herein are methods and techniques that utilize molecular geochemistry and isotopic signatures to monitor microbial enhanced gas and oil recovery operations. The methods and techniques utilize multiply substituted isotopologue signatures, clumped isotope signatures, and/or position-specific isotope signatures of one or more byproducts of the microbial stimulation techniques to determine the effectiveness of a microbial stimulation.

01/03/2018 - [JP2018030088](#) SCALE INHIBITOR FOR GEOTHERMAL POWER GENERATION APPARATUS AND SCALE PREVENTION METHOD FOR GEOTHERMAL WATER - NIPPON SHOKUBAI (JAPAN) - To provide scale preventive agent for geothermal power generation equipment and scale preventing method of geothermal water used for preventing silica scale of geothermal water used in geothermal power generation equipment.

22/02/2018 - [DE102016115421](#) A PROCESS FOR THE ENERGY STORAGE AND RELEASE OF ENERGY INTO A POWER SUPPLY NETWORK, COMPRESSED GAS STORAGE FORCE FACTORY AND COMPUTER PROGRAM - ERNEO ENERGIESPEICHERSYSTEME (GERMANY) - The present invention relates to a process for the energy storage and release of energy into a power supply network force by means of a compressed gas storage mechanism, the at least a first and a separate second memory space, wherein for energy storage compressed gas from the reservoir chamber to the lower pressure is removed.

08/02/2018 - [US2018038211](#) COINJECTION OF DIMETHYL ETHER AND STEAM FOR BITUMEN AND HEAVY OIL RECOVERY - UNIV BOARD REAGENTS TEXAS SYSTEM; UNIV TEXAS (USA) - Provided are oil recovery techniques, which may include enhanced oil recovery techniques in which a heated combination of water vapor (steam) and dimethyl ether (DME) vapor are injected into an oil reservoir, such as containing heavy oil and/or bitumen, to facilitate extraction of the oil from the reservoir.

18/01/2018 - [US2018016884](#) METHOD OF INCREASING PRODUCTIVITY OF OIL AND GAS RECOVERY FROM PREVIOUSLY USED WELLS - FRANKEL YURI (USA); KESLER EUGENIA (USA); MARMORSHTEYN LEON (USA) - Oil and gas recovery includes selecting a previously used oil or gas containing layer in which cumulative perforation was utilized, closing micro cracks over a thickness of the oil or gas containing layer, carrying out slotting of the oil or gas containing layer to form slots, producing micro cracks over the thickness of the oil or gas containing layer.

11/01/2018 - [WO2018007305](#) STABILISATION OF FOAMS BY CLAY PARTICLES - IFP ENERGIES NOUVELLES (FRANCE); RHODIA OPERATIONS (FRANCE) - The invention concerns a method for forming a stabilized foam suitable, in particular, for enhanced oil recovery, by expanding a foaming composition by means of at least one gas and/or steam, in which said foaming composition comprises, within an aqueous medium: - a surfactant or a mixture of surfactants suitable for forming a foam, under the effect of the introduction of the gas and/or the steam; and - clay particles.

30/11/2017 - METHOD OF EXPLOITATION OF HYDROCARBONS OF AN UNDERGROUND FORMATION BY MEANS OF OPTIMIZED SCALING - CNRS (FRANCE); IFP ENERGIES NOUVELLES (FRANCE); UNIV CA (FRANCE)

30/11/2017 - HIGH EFFICIENCY BINARY GEOTHERMAL SYSTEM - TURBODEN (ITALY)

Techniques de monitoring

06/02/2018 - [RU2643871](#) METHOD OF MONITORING SAFETY OF FUNCTIONING OF WELL FOR UNDERGROUND GAS STORAGE - LIMITED LIABILITY COMPANY ENERGY DIAGNOSTIC (RUSSIA); OBSHCHESTVO S OGRANICHENNOJ OTVETSTVENNOSTYU ENERGODIAGNOSTIKA (RUSSIA) - FIELD: oil and gas industry.SUBSTANCE: invention relates to monitoring and ensuring safety of technological processes of underground gas storage, can be used in nuclear, gas, oil, and chemical industries.

22/03/2018 - [US2018080319](#) METHOD FOR EXPLOITATION AND/OR MONITORING OF AN AQUIFER COMPRISING AT LEAST ONE DISSOLVED GAS - IFP ENERGIES NOUVELLES (FRANCE) - The invention is a method for the exploitation and/or monitoring of an underground formation having at least one reservoir comprising water, at least one gas species of interest and at least one atmospheric isotope of at least one rare gas present in dissolved form in the water of the reservoir.

01/02/2018 - [FR3054675](#) METHOD AND SYSTEM OF DETECTION OF SEISMIC EVENT - SERCEL (FRANCE) - The invention relates to a method for detecting seismic events, which comprises acquiring (110) a digital signal x characteristic of a signal measured by at least one seismic sensor; and calculating (130) a time-frequency distribution of at least one



slice of a given duration of said signal, in a given frequency band. For each frequency of said frequency band, the calculated time-frequency distribution is normalized.

HSE-Environnement

01/03/2018 - [US2018056272](#) PRODUCT FOR OIL POLLUTION REMEDIATION - UNIV FAYETTEVILLE STATE (USA) - The invention is both a product and a method for the safe, harmless and effective remediation of oil spills on water and on land. The oil can then be successfully recovered from the product for use. The invention also allows for the reuse of two waste products post-consumer plastics and coal combustion products into a material that is used for the clean-up of oil spills and for site remediation.

08/02/2018 - [EP3279428](#) MODULAR BLOWOUT PREVENTER CONTROL SYSTEM - CAMERON INTERNATL (USA) - Disclosed here is a system and method for modular BOP control. The modular BOP control unit system of one embodiment includes a skid (36) having a plurality of module pockets configured to receive a group of modular control units, one dedicated to the annular BOP, one dedicated to the diverter and one dedicated to the ram BOPs.

01/02/2018 - [WO2018020175](#) METHOD FOR TREATING PRODUCTION WATER FROM A METHOD FOR ENHANCED OIL AND/OR GAS RECOVERY - SPCM (FRANCE) - The present invention concerns a method for treating the production water originating from enhanced hydrocarbon recovery, and containing one or more hydrosoluble polymers and Fe²⁺ ions, consisting of at least partially oxidising the Fe²⁺ ions by introducing at least one reaction activator and oxygen into said production water, the molar ratio of introduced oxygen to Fe²⁺ ions being less than or equal to 0.25.

18/01/2018 - [WO2018013077](#) ANALYZER FOR A BLOWOUT PREVENTER - HALLIBURTON (USA) - A computing device can determine the integrity of a blowout preventer in a well system using a model generated from real-time sensor data. For example, the computing device can receive predetermined values associated with how pressure decays or otherwise changes in a pressurization subsystem over time. The pressurization subsystem can be for pressurizing the blowout preventer.

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