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Research output

Influence of Local Aperture Heterogeneity on Invading Fluid Connectivity During Rough Fracture Drainage

Phillips, T., Bultreys, T., Van Stappen, J., Singh, K., Achuo Dze, S., Van Offenwert, S., Callow, B., Borji, M., Boersheim, E. C., Novak, V., Schlepütz, C. M., Cnudde, V., Doster, F. & Busch, A., Sept 2024, In: *Transport in Porous Media*. 151, 12, p. 2387-2403 17 p.

New insights into the structural and stratigraphic evolution of the Malay Basin using 3D seismic data: Implications for regional carbon capture and storage potential

de Jonge-Anderson, I., Widyanita, A., Busch, A., Doster, F. & Nicholson, U., 7 Jul 2024, In: *Basin Research*. 36, 4, e12885.

Numerical modelling of the effects of permeability contrasts on underground hydrogen storage in sandstone reservoirs

Smith, D., Busch, A., Arnold, D. & Hough, E., 31 Dec 2024, In: *Geoenergy*. 2, 1, geoenergy2023-039.

Subsurface hydrogen storage controlled by small-scale rock heterogeneities

Jangda, Z., Menke, H., Busch, A., Geiger, S., Bultreys, T. & Singh, K., 22 Mar 2024, In: *International Journal of Hydrogen Energy*. 60, p. 1192-1202 11 p.

Modelling geological CO₂ leakage: Integrating fracture permeability and fault zone outcrop analysis

Rizzo, R. E., Forbes Inskip, N., Fazeli, H., Betlem, P., Bisdorn, K., Kampman, N., Snippe, J., Senger, K., Doster, F. & Busch, A., Mar 2024, In: *International Journal of Greenhouse Gas Control*. 133, 104105.

Multiscale Imaging in Understanding Pore Structure and Alignment of Seal Rock for Long Term CO₂ Containment

Sazali, W. M. L., Buckman, J., Ma, J., Leite, R. J., Plumper, O. & Busch, A., 22 Feb 2024, *Offshore Technology Conference Asia 2024*. Offshore Technology Conference, OTC-34557-MS

Compaction and clay content control mudrock porosity

Rezaeyan, A., Kampman, N., Pipich, V., Barnsley, L. C., Rother, G., Magill, C., Ma, J. & Busch, A., 15 Feb 2024, In: *Energy*. 289, 129966.

Evolution of Pore Structure in Organic-Lean and Organic-Rich Mudrocks

Rezaeyan, A., Kampman, N., Pipich, V., Barnsley, L. C., Rother, G., Magill, C., Ma, J. & Busch, A., 2 Nov 2023, In: *Energy and Fuels*. 37, 21, p. 16446–16460 15 p.

Caprock Porosity and Permeability Characterisation for CO₂ Storage Seal Integrity Assessment Using Preserved Core and Drill Cuttings

Sazali, W. M. L., Buckman, J., Jingsheng, M., Yong, W. P. & Busch, A., 2 Oct 2023, *ADIPEC 2023*. Society of Petroleum Engineers, SPE-216035-MS

The Harpers THMC flow bench: A triaxial multi-reactor setup for the investigation of long-term coupled thermo-hydro-mechanical-chemical fluid-rock interaction

Harpers, N., Wen, M., Miller, P., Hangx, S. & Busch, A., 21 Sept 2023, In: *Review of Scientific Instruments*. 94, 9, 095112.

Mechanical weakening of a mudrock seal by reaction with CO₂-charged fluids

Busch, A., Hangx, S., Vialle, S., Rizzo, R. & Kampman, N., 1 Jul 2023, In: *Geology*. 51, 7, p. 616-620 5 p.

Evaluating propensity for fugitive gas migration from integrity compromised oil and gas wells in the Peace Region, British Columbia, Canada, with a petrophysical approach

Gonzalez Samano, P. S., Beckie, R. D., Busch, A. & Cahill, A. G., Jul 2023, In: *Marine and Petroleum Geology*. 153, 106260.

Pore-Scale Visualization of Hydrogen Storage in a Sandstone at Subsurface Pressure and Temperature Conditions: Trapping, Dissolution and Wettability

Jangda, Z., Menke, H., Busch, A., Geiger, S., Bultreys, T., Lewis, H. & Singh, K., Jan 2023, In: *Journal of Colloid and Interface Science*. 629, Part B, p. 316-325 10 p.

Determination of Caprock Porosity and Permeability Using Drill Cuttings and Core Samples of a Potential CO₂ Storage Site – A Case Study

Sazali, W. M. L. B. & Busch, A., 31 Oct 2022, *ADIPEC 2022*. Society of Petroleum Engineers, SPE-211673-MS

Comparison of Porosity and Permeability from Drill Cuttings and Core Samples for Mudrocks: A Proof of Concept Study

Bin Sazali, W. M. L. & Busch, A., 14 Oct 2022, *SPE Asia Pacific Oil and Gas Conference and Exhibition 2022*. Society of Petroleum Engineers, SPE-210755-MS

Constraining well integrity and propensity for fugitive gas migration in surficial soils at onshore decommissioned oil and gas well sites in England

Samano, P. S. G., Cahill, A. G., Timmis, R. & Busch, A., Sept 2022, In: *International Journal of Greenhouse Gas Control*. 119, 103712.

Modelling of long-term along-fault flow of CO₂ from a natural reservoir

Snippe, J., Kampman, N., Bisdorn, K., Tambäch, T., March, R., Maier, C., Phillips, T., Inskip, N. F., Doster, F. & Busch, A., Jul 2022, In: *International Journal of Greenhouse Gas Control*. 118, 103666.

Molecular Structure of Adsorbed Water Phases in Silica Nanopores

Rother, G., Gautam, S., Liu, T., Cole, D. R., Busch, A. & Stack, A. G., 10 Feb 2022, In: *Journal of Physical Chemistry C*. 126, 5, p. 2885–2895 11 p.

Digital Image-Based Stress–Permeability Relationships of Rough Fractures Using Numerical Contact Mechanics and Stokes Equation

Kubeyev, A., Forbes Inskip, N., Phillips, T., Zhang, Y., Maier, C., Bisdorn, K., Busch, A. & Doster, F., Jan 2022, In: *Transport in Porous Media*. 141, 2, p. 295-330 36 p.

Predicting Fluid Flow Regime, Permeability, and Diffusivity in Mudrocks from Multiscale Pore Characterisation

Rezaeyan, A., Pipich, V., Ma, J., Leu, L., Seemann, T., Rother, G., Barnsley, L. C. & Busch, A., Jan 2022, In: *Transport in Porous Media*. 141, 1, p. 201-229 29 p.

Geothermal Power Generated from UK Granites (GWatt)

Rochelle, C., Busby, J., Kilpatrick, A., Shail, R., Yeomans, C., Eyre, M., den Hartog, S., Arnold, D., Geiger, S., Busch, A., Ledingham, P., Law, R. & Carroll, C., 27 Oct 2021, *Proceedings of the World Geothermal Congress 2020+1*. International Geothermal Association (IGA)

The role of supercritical carbon dioxide for recovery of shale gas and sequestration in gas shale reservoirs

Lyu, Q., Tan, J., Li, L., Ju, Y., Busch, A., Wood, D. A., Ranjith, P. G., Middleton, R., Shu, B., Hu, C., Wang, Z. & Hu, R., 1 Aug 2021, In: *Energy and Environmental Science*. 14, 8, p. 4203-4227 25 p.

Model for calcite spherulite formation in organic, clay-rich, lacustrine carbonate shales (Barbalha Formation, Aptian, Araripe Basin, NE Brazil)

Claes, H., Miranda, T., Falcao, T. C., Soete, J., Mohammadi, Z., Zieger, L., Erthal, M. M., Aguilar, J., Schmatz, J., Busch, A. & Swennen, R., Jun 2021, In: *Marine and Petroleum Geology*. 128, 104988.

MATSAS: a small-angle scattering computing tool for porous systems

Rezaeyan, A., Pipich, V. & Busch, A., 1 Apr 2021, In: *Journal of Applied Crystallography*. 54, 2, p. 697-706 10 p.

A Systematic Investigation Into the Control of Roughness on the Flow Properties of 3D-Printed Fractures

Phillips, T., Bultreys, T., Bisdorn, K., Kampman, N., Van Offenwert, S., Mascini, A., Cnudde, V. & Busch, A., Apr 2021, In: *Water Resources Research*. 57, 4, ewrcr.25233.

Carbonate rock mechanical response to CO₂ flooding evaluated by a combined X-ray computed tomography – DEM method

Zhang, Y., Zhang, Z., Arif, M., Lebedev, M., Busch, A., Sarmadivaleh, M. & Iglauer, S., Dec 2020, In: *Journal of Natural Gas Science and Engineering*. 84, 103675.

Controls on the intrinsic flow properties of mudrock fractures: A review of their importance in subsurface storage

Phillips, T., Kampman, N., Bisdorn, K., Forbes Inskip, N. D., den Hartog, S. A. M., Cnudde, V. & Busch, A., Dec 2020, In: *Earth-Science Reviews*. 211, 103390.

Laboratory-based investigation into the fluid flow properties of natural and 3D-printed rough fractures

Phillips, T., Forbes Inskip, N. D., Esegbue, O., Borisochev, G., Bultreys, T., Cnudde, V., Bisdorn, K., Kampman, N. & Busch, A., Nov 2020, *1st Geoscience and Engineering in Energy Transition Conference, GET 2020*. EAGE Publishing BV, 202021014

Water Uptake by Silica Nanopores: Impacts of Surface Hydrophilicity and Pore Size

Rother, G., Stack, A. G., Gautam, S., Liu, T., Cole, D. R. & Busch, A., 16 Jul 2020, In: *Journal of Physical Chemistry C*. 124, 28, p. 15188–15194 7 p.

Nano-mechanical Properties and Pore-Scale Characterization of Different Rank Coals

Zhang, Y., Lebedev, M., Smith, G., Jing, Y., Busch, A. & Iglauer, S., Jun 2020, In: *Natural Resources Research*. 29, p. 1787–1800 14 p.

Swelling clay minerals and containment risk assessment for the storage seal of the Peterhead CCS project

Busch, A., Hangx, S. J. T., Marshall, J. D. & Wentinck, H. M., Mar 2020, In: *International Journal of Greenhouse Gas Control*. 94, 102924.

Understanding fault and fracture networks to de-risk leakage from subsurface storage sites

Rizzo, R. E., Fazeli, H., Maier, C., March, R., Egya, D., Doster, F., Kubeyev, A., Kampman, N., Bisdorn, K., Snippe, J., Senger, K., Betlem, P., Phillips, T., Inskip, N. F., Esegbue, O. & Busch, A., 2020, *1st Geoscience and Engineering in Energy Transition Conference, GET 2020*. EAGE Publishing BV, 202021016. (1st Geoscience and Engineering in Energy Transition Conference, GET 2020).

Paleofloral dependence of coal methane sorption capacity

Busch, A., Han, F. & Magill, C., 1 Jul 2019, In: *International Journal of Coal Geology*. 211, 103232.

Improved visualization of heterogeneity within shales: Colour contoured maps constructed from large area high-resolution SEM montages

Buckman, J. & Busch, A., 28 Apr 2019, *6th EAGE Shale Workshop*. EAGE Publishing BV

Microstructural investigation of mudrock seals using nanometer-scale resolution techniques

Rezaeyan, A., Pipich, V., Bertier, P., Seemann, T., Leu, L., Kampman, N., Feoktystov, A., Barnsley, L. & Busch, A., 28 Apr 2019, *Sixth EAGE Shale Workshop*. EAGE Publishing BV

Resolving the pore structure and sorption properties of methane in mudrocks - A small angle neutron scattering study

Seemann, T., Bertier, P., Maes, N., Rezaeyan, A., Pipich, V., Barnsley, L., Busch, A. & Cnudde, V., 28 Apr 2019, *Proceedings of the 6th EAGE Shale Workshop*.

SAXS and WAXS microscopy applied to mudrocks: A new method for systematic multiscale studies of porosity, pore orientation and mineralogy

Leu, L., Bertier, P., Georgiadis, A., Busch, A., Diaz, A., Klaver, J., Schmatz, J., Lutz-Bueno, V., Ihli, J., Ott, H. & Blunt, M., 28 Apr 2019, *Proceedings of the 6th EAGE Shale Workshop*.

Quantitative analysis of the pore structure of premature-to-postmature organic rich mudrocks using small angle neutron scattering

Rezaeyan, A., Pipich, V., Bertier, P., Seemann, T., Leu, L., Kampman, N., Feoktystov, A., Barnsley, L. & Busch, A., 2019, *6th EAGE Shale Workshop*. EAGE Publishing BV

Understanding pore structure of mudrocks and pore-size dependent sorption mechanism using small angle neutron scattering

Rezaeyan, A., Seemann, T., Bertier, P., Pipich, V., Leu, L., Kampman, N., Feoktystov, A., Barnsley, L. & Busch, A., 2019, *SPE/AAPG/SEG Asia Pacific Unconventional Resources Technology Conference 2019*. Unconventional Resources Technology Conference (URTEC), URTEC-198285-MS

Architecture, stress state and permeability of a fault zone in Julishan coal mine in China: Implication for coal and gas outbursts

Li, W., Ren, T., Busch, A., den Hartog, S. A. M., Cheng, Y., Qiao, W. & Li, B., 1 Oct 2018, In: *International Journal of Coal Geology*. 198, p. 1-13 13 p.

Model-free classification of X-ray scattering signals applied to image segmentation

Lutz-Bueno, V., Arboleda, C., Leu, L., Blunt, M. J., Busch, A., Georgiadis, A., Bertier, P., Schmatz, J., Varga, Z., Villanueva-Perez, P., Wang, Z., Lebugle, M., David, C., Stampanoni, M., Diaz, A., Guizar-Sicairos, M. & Menzel, A., Oct 2018, In: *Journal of Applied Crystallography*. 51, 5, p. 1378-1386 9 p.

Predicting Effective Diffusion Coefficients in Mudrocks Using a Fractal Model and Small-Angle Neutron Scattering Measurements

Busch, A., Kampman, N., Bertier, P., Pipich, V., Feoktystov, A., Rother, G., Harrington, J. F., Leu, L., Aertens, M. & Jacobs, E., Sept 2018, In: *Water Resources Research*. 54, 9, p. 7076-7091 16 p.

Swelling stress development in confined smectite clays through exposure to CO₂

Zhang, M., de Jong, S. M., Spiers, C. J., Busch, A. & Wentinck, H. M., Jul 2018, In: *International Journal of Greenhouse Gas Control*. 74, p. 49-61 13 p.

Quantifying the risk of CO₂ leakage along fractures using an integrated experimental, multiscale modelling and monitoring approach

Bisdorn, K., Dean, M., Snippe, J., Kampman, N., Busch, A., Zihms, S., Doster, F., March, R., Bertier, P., Claes, H., Fink, R., Krooss, B., Hurst, S., Lidstone, A. & van Rossum, P., 2018, *5th CO₂ Geological Storage Workshop*. EAGE Publishing BV

Validating Reactive Transport Models of CO₂-brine-Rock Reactions in Caprocks Using Observations from a Natural CO₂ Reservoir

Kampman, N., Bertier, P., Busch, A., Snippe, J., Harrington, J., Pipich, V., Maskell, A. & Bickle, M., 18 Jul 2017, In: *Energy Procedia*. 114, p. 4902-4916 15 p.

Multiscale Description of Shale Pore Systems by Scanning SAXS and WAXS Microscopy

Leu, L. D., Georgiadis, A., Blunt, M. J., Busch, A., Bertier, P., Schweinar, K., Liebi, M., Menzel, A. & Ott, H., 15 Dec 2016, In: *Energy and Fuels*. 30, 12, p. 10282-10297 16 p.

Observational evidence confirms modelling of the long-Term integrity of CO₂-reservoir caprocks

Kampman, N., Busch, A., Bertier, P., Snippe, J., Hangx, S., Pipich, V., Di, Z., Rother, G., Harrington, J. F., Evans, J. P., Maskell, A., Chapman, H. J. & Bickle, M. J., 28 Jul 2016, In: *Nature Communications*. 7, 12268.

On sorption and swelling of CO₂ in clays

Busch, A., Bertier, P., Gensterblum, Y., Rother, G., Spiers, C. J., Zhang, M. & Wentinck, H. M., Jun 2016, In: *Geomechanics and Geophysics for Geo-Energy and Geo-Resources*. 2, 2, p. 111-130

Bridging pore and macroscopic scale - Scanning SAXS-WAXS microscopy applied to shales

Leu, L. D., Georgiadis, A., Blunt, M. J., Busch, A., Liebi, M., Menzel, A., Bertier, P., Schweinar, K. & Ott, H., 2 May 2016, *5th EAGE Shale Workshop: Quantifying Risks and Potential*. EAGE Publishing BV, p. 18-21 4 p.

Shale porosity - What can we learn from different methods?

Busch, A., Schweinar, K., Kampman, N., Coorn, A., Pipich, V., Feoktystov, A., Leu, L., Amann-Hildenbrand, A. & Bertier, P., 2 May 2016, *5th EAGE Shale Workshop: Quantifying Risks and Potential*. EAGE Publishing BV, p. 13-17 5 p.

Chemical-mechanical coupling observed for depleted oil reservoirs subjected to long-term CO₂-exposure - A case study of the Werkendam natural CO₂ analogue field

Hangx, S., Bakker, E., Bertier, P., Nover, G. & Busch, A., 15 Oct 2015, In: *Earth and Planetary Science Letters*. 428, p. 230-242 13 p.

CO₂ wettability of seal and reservoir rocks and the implications for carbon geo-sequestration

Iglauer, S., Pentland, C. H. & Busch, A., 20 Jan 2015, In: *Water Resources Research*. 51, 1, p. 729-774 46 p.

Importance of mineral surface areas in Rotliegend sandstones for modeling CO₂-water-rock interactions

Waldmann, S., Busch, A., Van Ojik, K. & Gaupp, R., 15 Jun 2014, In: *Chemical Geology*. 378-379, p. 89-109 21 p.

Development of swelling strain in smectite clays through exposure to carbon dioxide

De Jong, S. M., Spiers, C. J. & Busch, A., May 2014, In: *International Journal of Greenhouse Gas Control*. 24, p. 149-161 13 p.

Drilling and sampling a natural CO₂ reservoir: Implications for fluid flow and CO₂-fluid-rock reactions during CO₂ migration through the overburden

Kampman, N., Bickle, M. J., Maskell, A., Chapman, H. J., Evans, J. P., Purser, G., Zhou, Z., Schaller, M. F., Gattacceca, J. C., Bertier, P., Chen, F., Turchyn, A. V., Assayag, N., Rochelle, C., Ballentine, C. J. & Busch, A., 13 Mar 2014, In: *Chemical Geology*. 369, p. 51-82 32 p.

Gas saturation and CO₂ enhancement potential of coalbed methane reservoirs as a function of depth

Gensterblum, Y., Merkel, A., Busch, A., Krooss, B. M. & Littke, R., Feb 2014, In: *AAPG Bulletin*. 98, 2, p. 395-420 26 p.

Molecular concept and experimental evidence of competitive adsorption of H₂O, CO₂ and CH₄ on organic material

Gensterblum, Y., Busch, A. & Krooss, B. M., Jan 2014, In: *Fuel*. 115, p. 581-588 8 p.

The green river natural analogue as a field laboratory to study the long-term fate of CO₂ in the subsurface

Busch, A., Kampman, N., Hangx, S. J., Snippe, J., Bickle, M., Bertier, P., Chapman, H., Spiers, C. J., Pijenburg, R., Samuelson, J., Evans, J. P., Maskell, A., Nicholl, J., Pipich, V., Di, Z., Rother, G. & Schaller, M., 2014, In: *Energy Procedia*. 63, p. 2821-2830 10 p.

Scientific drilling and downhole fluid sampling of a natural CO₂ reservoir, Green River, Utah

Scientists of the GRDP, 7 Nov 2013, In: *Scientific Drilling*. 16, p. 33-43 11 p.

CO₂ storage is feasible and further demonstration projects are needed. CO₂ storage at the EGU general assembly 2012

Kühn, M., Busch, A., Niemi, A., Amann-Hildenbrand, A., Kempka, T. & Lüth, S., Nov 2013, In: *International Journal of Greenhouse Gas Control*. 19, p. 606-608 3 p.

Experimental investigation of the sealing capacity of generic clay-rich caprocks

Amann-Hildenbrand, A., Bertier, P., Busch, A. & Krooss, B. M., Nov 2013, In: *International Journal of Greenhouse Gas Control*. 19, p. 620-641 22 p.

High-pressure CH₄ and CO₂ sorption isotherms as a function of coal maturity and the influence of moisture

Gensterblum, Y., Merkel, A., Busch, A. & Krooss, B. M., 1 Oct 2013, In: *International Journal of Coal Geology*. 118, p. 45-57 13 p.

Predicting capillarity of mudrocks

Busch, A. & Amann-Hildenbrand, A., Aug 2013, In: *Marine and Petroleum Geology*. 45, p. 208-223 16 p.

CH₄ and CO₂ sorption isotherms and kinetics for different size fractions of two coals

Han, F., Busch, A., Krooss, B. M., Liu, Z. & Yang, J., Jun 2013, In: *Fuel*. 108, p. 137-142 6 p.

An experimental and numerical study of gas transport and imbibition processes in coal matrix

Han, F., Busch, A., Krooss, B. M., Liu, Z. & Yang, J., 2013, *30th Annual International Pittsburgh Coal Conference 2013*. International Pittsburgh Coal Conference, Vol. 1. p. 756-777 22 p.

X-ray diffraction study of k- and ca-exchanged montmorillonites in CO₂ atmospheres

Giesting, P., Guggenheim, S., Koster Van Groos, A. F. & Busch, A., 15 May 2012, In: *Environmental Science and Technology*. 46, 10, p. 5623-5630 8 p.

Interaction of carbon dioxide with Na-exchanged montmorillonite at pressures to 640bars: Implications for CO₂ sequestration

Giesting, P., Guggenheim, S., Koster Van Groos, A. F. & Busch, A., May 2012, In: *International Journal of Greenhouse Gas Control*. 8, p. 73-81 9 p.

The Importance of Mineral Surface Areas Exposed to Open Pores in Rotliegend Sandstones for Modelling CO₂ Water-rock Interactions

Waldmann, S., Busch, A., Wei, L., Van Ojik, K. & Gaupp, R., 27 Mar 2012, *3rd EAGE CO₂ Geological Storage Workshop: Understanding the Behaviour of CO₂ in Geological Storage Reservoirs*. EAGE Publishing BV

Clay/CO₂ interactions in the context of geological storage of carbon dioxide

Busch, A., Bertier, P., Gensterblum, Y., Giesting, P., Guggenheim, S., Koster Van Groos, A. F. & Weniger, P., 23 Jan 2012, *3rd EAGE Shale Workshop: Shale Physics and Shale Chemistry*. EAGE Publishing BV

CBM and CO₂-ECBM related sorption processes in coal: A review

Busch, A. & Gensterblum, Y., 1 Aug 2011, In: *International Journal of Coal Geology*. 87, 2, p. 49-71 23 p.

A study on permeability of CH₄ pre-adsorbed Yangquan coal matrix-plug to CO₂ and He

Yang, J., Tang, F., Zhang, J., Liu, Z., Li, Y., Niu, H., Busch, A. & van Wageningen, N., 2011, *28th Annual International Pittsburgh Coal Conference 2011*. Vol. 4. p. 2892-2900 9 p.

Determining CO₂/brine relative permeability and capillary threshold pressures for reservoir rocks and caprocks: Recommendations for development of standard laboratory protocols

Busch, A. & Müller, N., 2011, In: *Energy Procedia*. 4, p. 6053-6060 8 p.

Sealing rock characteristics under the influence of CO₂

Amann, A., Waschbüsch, M., Bertier, P., Busch, A., Krooss, B. M. & Littke, R., 2011, In: *Energy Procedia*. 4, p. 5170-5177 8 p.

Experimental study on fluid transport processes in the cleat and matrix systems of coal

Han, F., Busch, A., Krooss, B. M., Liu, Z., van Wageningen, N. & Yang, J., 16 Dec 2010, In: *Energy and Fuels*. 24, 12, p. 6653-6661 9 p.

High-pressure methane and carbon dioxide sorption on coal and shale samples from the Paraná Basin, Brazil

Weniger, P., Kalkreuth, W., Busch, A. & Krooss, B. M., 1 Dec 2010, In: *International Journal of Coal Geology*. 84, 3-4, p. 190-205 16 p.

CO₂ storage at the EGU general assembly 2009

Kühn, M., Busch, A. & Juhlin, C., Dec 2010, In: International Journal of Greenhouse Gas Control. 4, 6, p. 889 1 p.

European inter-laboratory comparison of high pressure CO₂ sorption isotherms II: Natural coals

Gensterblum, Y., van Hemert, P., Billefont, P., Battistutta, E., Busch, A., Krooss, B. M., de Weireld, G. & Wolf, K. H. A. A., 1 Nov 2010, In: International Journal of Coal Geology. 84, 2, p. 115-124 10 p.

Experimental investigation of the CO₂ sealing efficiency of caprocks

Wollenweber, J., Alles, S., Busch, A., Krooss, B. M., Stanjek, H. & Littke, R., Mar 2010, In: International Journal of Greenhouse Gas Control. 4, 2, p. 231-241 11 p.

High-pressure sorption isotherms and sorption kinetics of CH₄ and CO₂ on coals

Li, D., Liu, Q., Weniger, P., Gensterblum, Y., Busch, A. & Krooss, B. M., Mar 2010, In: Fuel. 89, 3, p. 569-580 12 p.

Experimental study of gas and water transport processes in the inter-cleat (matrix) system of coal: Anthracite from Qinshui Basin, China

Han, F., Busch, A., van Wageningen, N., Yang, J., Liu, Z. & Krooss, B. M., 1 Feb 2010, In: International Journal of Coal Geology. 81, 2, p. 128-138 11 p.

The significance of caprock sealing integrity for CO₂ storage

Busch, A., Amann, A., Bertier, P., Waschbüsch, M. & Krooss, B. M., 2010, *SPE International Conference on CO₂ Capture, Storage, and Utilization 2010*. Society of Petroleum Engineers, Vol. 1. p. 300-307 8 p.

European inter-laboratory comparison of high pressure CO₂ sorption isotherms. I: Activated carbon

Gensterblum, Y., van Hemert, P., Billefont, P., Busch, A., Charrière, D., Li, D., Krooss, B. M., de Weireld, G., Prinz, D. & Wolf, K. H. A. A., Nov 2009, In: Carbon. 47, 13, p. 2958-2969 12 p.

Caprock and overburden processes in geological CO₂ storage: An experimental study on sealing efficiency and mineral alterations

Wollenweber, J., Alles, S., Kronimus, A., Busch, A., Stanjek, H. & Krooss, B. M., Feb 2009, In: Energy Procedia. 1, 1, p. 3469-3476 8 p.

Effects of physical sorption and chemical reactions of CO₂ in shaly caprocks

Busch, A., Alles, S., Krooss, B. M., Stanjek, H. & Dewhurst, D., Feb 2009, In: Energy Procedia. 1, 1, p. 3229-3235 7 p.

Laboratory experiments on environmental friendly means to improve coalbed methane production by carbon Dioxide/Flue Gas Injection

Mazumder, S., Wolf, K. H. A. A., van Hemert, P. & Busch, A., Oct 2008, In: Transport in Porous Media. 75, 1, p. 63-92 30 p.

A preliminary evaluation of the CO₂ storage potential in unminable coal seams of the Münster Cretaceous Basin, Germany

Kronimus, A., Busch, A., Alles, S., Juch, D., Jurisch, A. & Littke, R., Jul 2008, In: International Journal of Greenhouse Gas Control. 2, 3, p. 329-341 13 p.

Carbon dioxide storage potential of shales

Busch, A., Alles, S., Gensterblum, Y., Prinz, D., Dewhurst, D. N., Raven, M. D., Stanjek, H. & Krooss, B. M., Jul 2008, In: International Journal of Greenhouse Gas Control. 2, 3, p. 297-308 12 p.

Guest editorial

Busch, A., Kühn, M. & Etheridge, D., Jul 2008, In: International Journal of Greenhouse Gas Control. 2, 3, p. 287 1 p.

Inter-laboratory comparison II: CO₂ isotherms measured on moisture-equilibrated Argonne premium coals at 55 °C and up to 15 MPa

Goodman, A. L., Busch, A., Bustin, R. M., Chikatamarla, L., Day, S., Duffy, G. J., Fitzgerald, J. E., Gasem, K. A. M., Gensterblum, Y., Hartman, C., Jing, C., Krooss, B. M., Mohammed, S., Pratt, T., Robinson, R. L., Romanov, V., Sakurovs, R., Schroeder, K. & White, C. M., 22 Nov 2007, In: International Journal of Coal Geology. 72, 3-4, p. 153-164 12 p.

High-pressure sorption of nitrogen, carbon dioxide, and their mixtures on Argonne Premium Coals

Busch, A., Gensterblum, Y. & Krooss, B. M., May 2007, In: Energy and Fuels. 21, 3, p. 1640-1645 6 p.

Measurement and interpretation of supercritical CO₂ sorption on various coals

Siemons, N. & Busch, A., 1 Mar 2007, In: International Journal of Coal Geology. 69, 4, p. 229-242 14 p.

Flue gas and pure CO₂ sorption properties of coal: A comparative study

Mazumder, S., van Hemert, P., Busch, A., Wolf, K. H. A. A. & Tejera-Cuesta, P., 3 Jul 2006, In: International Journal of Coal Geology. 67, 4, p. 267-279 13 p.

Evolution of methane sorption capacity of coal seams as a function of burial history - a case study from the Campine Basin, NE Belgium

Hildenbrand, A., Krooss, B. M., Busch, A. & Gaschnitz, R., 3 Mar 2006, In: International Journal of Coal Geology. 66, 3, p. 179-203 25 p.

Investigation of high-pressure selective adsorption/desorption behaviour of CO₂ and CH₄ on coals: An experimental study

Busch, A., Gensterblum, Y., Krooss, B. M. & Siemons, N., 3 Feb 2006, In: International Journal of Coal Geology. 66, 1-2, p. 53-68 16 p.

CO₂ and CH₄ sorption kinetics on coal: An experimental and modeling approach

Krooss, B. M., Busch, A. & Gensterblum, Y., 2005, *Greenhouse Gas Control Technologies 7: Proceedings of the 7th International Conference on Greenhouse Gas Control Technologies 5– September 2004, Vancouver, Canada*. Elsevier, Vol. 2. p. 2243-2246 4 p.

Field experiment of ECBM-CO₂ in the Upper Silesian Basin of Poland (RECOPOL)

Pagnier, H., van Bergen, F., Krzystolik, P., Skiba, J., Jura, B., Hadro, J., Wentink, P., De-Smedt, G., Kretzschmar, H. J., Fröbel, J., Müller-Syring, G., Krooss, B. M., Busch, A., Wolf, K. H., Mazumder, S., Bossie-Codreanu, D., Choi, X., Grabowski, D., Hurtevent, D., Gale, J., & 6 others Winthaegen, P., van der Meer, B., Kobiela, Z., Bruining, H., Reeves, S. & Stevens, S., 2005, *Greenhouse Gas Control Technologies 7: Proceedings of the 7th International Conference on Greenhouse Gas Control Technologies 5– September 2004, Vancouver, Canada*. Elsevier, Vol. 2. p. 1391-1397 7 p.

Methane and carbon dioxide adsorption-diffusion experiments on coal: Upscaling and modeling

Busch, A., Gensterblum, Y., Krooss, B. M. & Littke, R., 3 Dec 2004, In: International Journal of Coal Geology. 60, 2-4, p. 151-168 18 p.

An Inter-laboratory Comparison of CO₂ Isotherms Measured on Argonne Premium Coal Samples

Goodman, A. L., Busch, A., Duffy, G. J., Fitzgerald, J. E., Gasem, K. A. M., Gensterblum, Y., Krooss, B. M., Levy, J., Ozdemir, E., Pan, Z., Robinson, R. L., Schroeder, K., Sudibandriyo, M. & White, C. M., Jul 2004, In: Energy and Fuels. 18, 4, p. 1175-1182 8 p.

CO₂-speicherung in kohleflözen: Adsorptions/desorptions-experimente mit CO₂/CH₄-mischungen im Rahmen des EU-RECOPOL projektes

Busch, A., Krooss, B. M. & Gensterblum, Y., 2004, In: DGMK Tagungsbericht. 2, p. 473-483 11 p.

CO₂-speicherung in kohleflözen: Sorptionskinetische untersuchungen im rahmen des EU-RECOPOL projektes

Busch, A., Krooss, B. M. & Gensterblum, Y., 2004, In: DGMK Tagungsbericht. 2, p. 485-496 12 p.

Reduzierung von Treibhausgas-Emissionen durch CO₂-Speicherung in Kohleflözen: Das RECOPOL Projekt

Krooss, B. M., Kretschmar, H. J., Busch, A., Fröbel, J., Van Bergen, F. & Pagnier, H., 2004, *Vorträge der DGMK-ÖGEW-Frühjahrstagung am 29. und 30.04.2004 in Celle*. p. 439-448 10 p.

Methane and CO₂ sorption and desorption measurements on dry Argonne premium coals: Pure components and mixtures

Busch, A., Gensterblum, Y. & Krooss, B. M., Aug 2003, In: *International Journal of Coal Geology*. 55, 2-4, p. 205-224 20 p.

High-pressure adsorption of methane, carbon dioxide and their mixtures on coals with a special focus on the preferential sorption behaviour

Busch, A., Krooss, B. M., Gensterblum, Y., Van Bergen, F. & Pagnier, H. J. M., May 2003, In: *Journal of Geochemical Exploration*. 78-79, p. 671-674 4 p.

Assessing the Kinetics and Capacity of Gas Adsorption in Coals by a Combined Adsorption/ Diffusion Method

Siemons, N., Busch, A., Bruining, H., Krooss, B. M. & Gensterblum, Y., 2003, *Proceedings - SPE Annual Technical Conference and Exhibition*. Society of Petroleum Engineers, p. 2477-2484 8 p.