

# Petroleum Geoscience

The international journal of geoenergy and applied earth science

The journal is abstracted and/or indexed in *Current Contents*, *Science Citation Index*, *GeoArchive*, *GeoRef*, *Geobase*, *Petroleum Abstracts*, *Geological Abstracts*, *Mineralogical Abstracts* and *Cambridge Scientific Abstracts*

## CONTENTS – Volume 26, No 1

### Thematic collection: Mechanics of salt systems: state of the field in numerical methods

Editors: M. A. Nikolinakou, R. Goteti & M. Heidari

#### Mechanics of salt systems: state of the field in numerical methods, Part II

R. Goteti, M. A. Nikolinakou & M. Heidari

#### The competition for salt and kinematic interactions between minibasins during density-driven subsidence: observations from numerical models

N. Fernandez, M. R. Hudec, C. A.-L. Jackson, T. P. Dooley & O. B. Duffy

#### Feedback between synrift lithospheric extension, sedimentation and salt tectonics on wide, weak continental margins

J. Allen, C. Beaumont & M. E. Deptuck

#### Comparison of stresses in 3D v. 2D geomechanical modelling of salt structures in the Tarfaya Basin, West African coast

J. J. Hooghvorst, T. W. D. Harrold, M. A. Nikolinakou, O. Fernandez & A. Marcuello

### Research article

#### Structural and lithological controls on the architecture of igneous intrusions: examples from the NW Australian Shelf

N. J. Mark, S. P. Holford, N. Schofield, C. H. Eide, S. Pugliese, D. A. Watson & D. Muirhead

#### Evaporate facies recognition using an unsupervised artificial neural network in the northern Arabia Plate

S.-H. Zhang, Y. Xu & M. K. Teng

#### Rivers, reefs and deltas: geomorphological evolution of the Jurassic of the Farsund Basin, offshore southern Norway

T. B. Phillips, C. A.-L. Jackson, R. E. Bell & A. A. Valencia

#### Bedding-scale geomodelling for effective permeability estimation in the Upper McMurray Formation, NE Alberta, Canada

C. Hao, M. Longxin, H. Jixin & C. Guangfa

#### Raiders of the Lost Mud: the geology behind drilling incidents within the Balder Formation around the Corona Ridge, West of Shetland

D. Watson, N. Schofield, A. Maguire, C. Telford, N. Mark, S. Archer & J. Hardman

### Energy Geoscience Series

#### Reservoir modelling notional CO<sub>2</sub> injection into the Precipice Sandstone and Evergreen Formation in the Surat Basin, Australia

A. D. La Croix, A. Harfoush, I. Rodger, S. Gonzalez, J. R. Undershultz, P. Hayes & A. Garnett

#### Model calibration for forecasting CO<sub>2</sub>-foam enhanced oil recovery field pilot performance in a carbonate reservoir

M. Sharma, Z. P. Alcorn, S. B. Fredriksen, A. U. Rognmo, M. A. Fernø, S. M. Skjæveland & A. Graue

1  
3  
16  
36  
50  
70  
81  
101  
110  
127  
141

### Chief Editor:

P. S. Ringrose, Equinor & NTNU, Trondheim, Norway  
(e-mail: phiri@equinor.com)

### Co-Editors:

P. A. F. Christie, Christie GeoSolutions Ltd, UK  
(e-mail: phil.christie@ntlworld.com)

D. Dewhurst, CSIRO, Australia  
(e-mail: David.Dewhurst@csiro.au)

S. Geiger, Heriot Watt University, Edinburgh, UK  
(e-mail: s.geiger@hw.ac.uk)

K. Klitgord, University of Houston, USA  
(e-mail: kdklitgord@gmail.com)

B. Levell, Oxford University, UK  
(e-mail: Bruce.Levell@earth.ox.ac.uk)

J. Prigmore, Calderdale Geoscience Ltd, UK  
(e-mail: jop@sm-consultants.co.uk)

G. Yielding, Badley Geoscience Ltd, UK  
(e-mail: graham@badleys.co.uk)

### Journal Manager:

L. Bell, Geological Society Publishing House, Bath  
(e-mail: pg@geolsoc.org.uk)

*Petroleum Geoscience* (ISSN 1354-0793) is published in February, May, August and November by the Geological Society Publishing House for the Geological Society, London and the European Association of Geoscientists and Engineers.

### Subscription rates 2020 (volume 26, 4 parts)

All correspondence relating to trade subscriptions should be addressed to the Journal Subscription Department, Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, UK, BA1 3JN (Tel: +44 (0) 1225 445046; Fax: +44 (0) 1225 442836; e-mail: sales@geolsoc.org.uk). The subscription prices for 2019 are as follows: online only £545 + VAT for UK, EU and ROW users; online + print £681 + VAT for UK, EU and ROW users. More information about subscription prices can be found at [www.geolsoc.org.uk/lcaccess](http://www.geolsoc.org.uk/lcaccess)

Periodical postage paid at Middlesex, N.J.  
*Postmaster*: send address changes to *Petroleum Geoscience*, The Geological Society, c/o Pronto Mailers, PO Box 177, Middlesex, NJ 08846.

© The Geological Society of London and EAGE, 2020  
Except as otherwise permitted under the Copyright, Designs and Patents Act, 1988, this publication may only be reproduced, stored or transmitted, in any form or by any other means, with the prior permission in writing of the publisher, or in the case of reprographic reproduction, in accordance with the terms of a licence issued by the Copyright Licensing Agency in the UK, or the Copyright Clearance Centre in the USA. In particular, the Society permits the making of a single photocopy of an article from this issue (under Sections 29 and 38 of this Act) for an individual for the purposes of research or private study. Open access articles, which are published under a CC-BY licence, may be re-used without permission, but subject to acknowledgement.

Full information on the Society's Permission Policy can be found at: <https://www.geolsoc.org.uk/permissions>  
Publishing disclaimer: [www.geolsoc.org.uk/pub\\_ethics](http://www.geolsoc.org.uk/pub_ethics)

### Cover image

The basin-fill model proposed by Banham & Mountney (2013). See Fernandez *et al.*, p. 3.

ISSN 1354-0793