

Geo-soundings

NEWSLETTER – SEPTEMBER 2012

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WELCOME

Welcome to the 3rd edition of Geo-soundings for 2012.

We hope you enjoy this issue and look forward to again keeping our readers informed of our activities during 2012 and hope that the remainder of the year is rewarding and productive for all.

CONFERENCE PRESENTATIONS

Lwin, M., and M. Urosevic, 2012, *A link between seismic attributes and fluid content in coal seams*. Presented at 34th International Geological Congress, Brisbane, Australia, August 2012.

S. Yavuz, K. Tertyshnikov, E. Strobach, M. Urosevic, 2012. *The Use of Seismic Methods for Imaging Complex Mineral Bodies in Hard Rock Environments*. Presented at 18th European Meeting of Environmental and Engineering Geophysics, Paris, France, September 2012.

JOURNAL PUBLICATIONS

Nadri, D., J. Sarout, **A. Bona**, and D. Dewhurst, 2012, *Estimation of the anisotropy parameters of transversely isotropic shales with a tilted symmetry axis*. Published in *Geophysical Journal International* on-line, 2012, doi:10.1111/j.1365-246X.2012.05545.x

Malehmir, A., C Juhlin, C Wijns, **M Urosevic**, P Valasti, and Emilia Koivisto 2012. *3D reflection seismic imaging for open-pit mine planning and deep exploration in the Kevitsa Ni-Cu-PGE deposit, northern Finland*. Published in *Geophysics*, vol. 77, (5), WC95–WC108, September - October 2012.

Greenwood, A., C. Dupuis, M. Urosevic, and A. Kepic 2012 *Hydrophone VSP surveys in hard rock*, Published in *Geophysics*, vol. 77, (5), WC223–WC234 September - October 2012.

Malehmir, A., **M. Urosevic**, G. Bellefleur, C Juhlin, and B Milkereit, 2012. *Seismic methods in mineral exploration and mine planning — Introduction*, Published in *Geophysics*, vol. 77, (5), WC1–WC2 September - October 2012.

Malehmir, A., R. Durrheim, G. Bellefleur, **M. Urosevic**, C. Juhlin, D. White, B. Milkereit, and G. Campbell., 2012,

Seismic methods in mineral exploration and mine planning: A general overview of past and present case histories and a look into the future, Published in *Geophysics*, vol. 77, (5) WC173–WC190, September - October 2012.

Harrison, C. and **M Urosevic**, 2012, *Seismic processing, inversion, and AVO for gold exploration — Case study from Western Australia*. Published in *Geophysics*, Vol 77, (5), WC235–WC243, September - October 2012.

Urosevic, M., G. Bhat, and M.Groshau, 2012, *Targeting nickel sulfide deposits from 3D seismic reflection data at Kambalda, Australia*. Published in *Geophysics*, Vol 77, (5), WC123–WC132, September - October 2012.

HONOURS/GRANTS/AWARDS

We congratulate **Mr Osni De Paula** on being awarded his Doctor of Philosophy degree, officially approved on the **23rd August 2012**. His thesis entitled “*Elastic properties of carbonates: measurements and modelling*” was supervised by Dr Boris Gurevich.

Curtin University of Technology and AWE Ltd, Norwest Energy. **Gurevich, Prof Boris; Lebedev, A/Prof Maxim; Rasouli, A/Prof Vamegh; Dyskin, Prof Arcady V; Pasternak, Prof Elena; Broome, Mr Steven; Sutherland, Mr Andrew J** were awarded an ARC-Linkage Grant Results (LP120200797)

“*Upscaling laws for hydraulic fracturing of tight formations using reproducible true tri-axial laboratory testing*”

2012	\$95,000.00
2013	\$180,000.00
2014	\$85,000.00
Total	\$360,000.00

Primary Field of Research Resources Engineering And Extractive Metallurgy.

Upscaling models for designing hydraulic fracture stimulation of gas reservoirs will be developed. Innovative laboratory methods of reproducing the field stress conditions and rock structure will be used. The results will advance the mechanics of hydraulic fracturing and increase efficiency of reservoir stimulation, especially in tight formations.

RESEARCH ACTIVITIES

On 9th July a group of Year 12 students visited the Department as part of the *Focus on Mining* program which was organised by WASM Marketing. The program includes a 5 day camp for the students who are studying TEE Maths and Science and are considering studying mining related courses at university. The tours include visits to both the Bentley and the Kalgoorlie Campuses and visits to mine sites. **Dominic Howman** gave a presentation on what geophysics is and how to gain entry into our course and a short tour of the facilities within the department.

On the 5th August the annual *Curtin Open Day* was held. Staff Members volunteered and assisted with the geophysics activities on the day. We would like to thank staff members **Dominic Howman, Dr Maxim Lebedev, Dr Anton Kepic** and **Dr Andrew Squelch**, and students **REBECCA TUNG, ALDO DE ROOSTER, GAVIN JONES, AND ZENON PLATRITIS**.



THIRD YEAR FIELD TRIP

The third year field trip this year was sponsored by First Quantum Minerals at their Nickel mine near Ravensthorp. The work was split over 2 weeks, with a different student group each week. Methods used to collect data were seismic, gravity, magnetics, EM and RADAR.

The students are now sorting out and processing the data for their final report. We would like to acknowledge the assistance of Fugro and Atlas Geophysics who supplied a magnetometer and a gravimeter.



STAFF NEWS

Miss Michelle McWha is leaving us mid-September as she has been offered a permanent position within WASM as the Special Project Officer. We wish her the best of luck in her new role.

Ms Deirdre Hollingsworth will be taking extended leave beginning in September after many years of hard work with our department. We wish her the best on her journey and safe travels. **Ms Judith Tournay** will be covering Deirdre's extended leave.

Ms Michelle Troebinger has resigned from her post as Finance and Project Co-Ordinator.

UPCOMING EVENTS

SEG 82nd Annual Meeting

4th -9th November, Las Vegas, USA

DETCRC Annual Conference

18th – 21st November, Hahndorf, SA

The Greenhouse Gas Control Technologies (GHGT 11)

18th – 22nd November, Kyoto, Japan

CO2CRC Research Symposium

26th – 28th November, Brisbane

Curtin Reservoir Geophysics Consortium (CRGC) Annual Meeting

6th – 7th December, Rottneest Island

National Geosequestration Laboratory

The Australian Government has awarded \$48.4 million from the Education Investment Fund to build the National Geosequestration Laboratory (NGL), a major collaboration between Curtin, CSIRO and UWA.

The facility will provide research to develop innovative solutions for the long term geological storage of CO₂. It will be based at the ARRC building.

Since being informed of the application's success, CSIRO, Curtin and UWA have been in discussions to define the asset allocation, structure and governance around the NGL. As part of these negotiations, Curtin has secured assets to the value of \$12.94 million.

The first of these assets, a \$750,000 Micro Computer Tomography (Micro CT) Scanner, has been installed at Curtin's laboratories at ARRC. The machine will be used to investigate the movement of carbon dioxide fluids through the pores of rocks, which could potentially be used for CO₂ storage.