Dr Rezaee has a PhD degree in Reservoir Characterisation (Adelaide University). He has over 20 years experience in academia and industry. During his career, he has been engaged in several research projects supported by national and international oil companies and these commissions, together with his supervisory work at various universities, have involved a wide range of achievements.

He has supervised over 50 M.Sc. and PhD students during his career and has published more than 100 peer-reviewed journal and conference papers. He is the author of 3 books on petroleum geology, logging and log interpretation.

His research has been focused on integrated solutions for reservoir characterization, formation evaluation and petrophysics. He has utilized expert systems such as artificial neural networks and fuzzy logic and has introduced several new approaches to estimate rock properties from log data where conventional methods fail to succeed.

Currently he is focused on unconventional gas including gas shale and tight gas sand studies.
Global Shale Gas Production

Global natural gas consumption is projected to grow 52%, an increase of nearly 2% annually from about 108 Tcf in 2008 to about 163 Tcf in 2030. In the U.S., shale gas has become the focus of domestic gas exploration strategies, after successes in Barnett Shale gas production to the point where the U.S. now produces more shale gas than from conventional sources.

Presently production from gas shales exceeds 8bcf/d (more than 40% of the US’s gas consumption) which is greater than that produced from coal seam gas fields. Also, advances in drilling and stimulation technologies have made gas shale plays attractive for development in many countries, and Australia is no exception. Little has been done publicly to describe or quantify the shale gas potential of Australia’s onshore sedimentary basins. This Consortium is working in the Perth and Canning Basins.

There are over 15 onshore sedimentary basins ranging in age from Proterozoic to Cainozoic on the Australian continent. Many of these basins have thick shale intervals that may have gas shale potential. Many of these basins also have thick coal beds which may have associated organic-rich shales which may be gas bearing.

Benefits to Sponsors

This study will provide the following deliverables:

- Foundation of a shale gas database for Perth and Canning basins, and other basins by negotiation with sponsors
- A series of maps illustrating: thickness, thermal maturity, organic material richness, reservoir quality (porosity) of the candidate shales
- Volumetric estimations of free gas in the shale
- Masters/PhD theses and a comprehensive annual sponsors report
- Potential for graduates ready for entry into industry to continue to work with sponsors

For further information contact:
Dr Reza Rezaee, Department of Petroleum Engineering, Curtin University, PO Box U1987, Perth, WA 6845.
Telephone: +61 8 9266 7980
Email: r.rezaee@curtin.edu.au

Dr Brian Evans, Head Department of Petroleum Engineering
Email: b.evans@curtin.edu.au

The Department of Petroleum Engineering has a strong capability in borehole geomechanics, and the Geomechanics research group led by Dr Vamegh Rasouli has the only true tri-axial cell in the world in which well fracking studies may be undertaken at true anisotropic stress field and pore pressure values. These capabilities may be called on for further studies in shale gas fraccing. In addition, the department’s Associate Professor Jorge Sampaio is Australia’s only university industrial drilling engineer. He has research interests in drilling and completion technologies.