



UNIVERSITY OF WOLLONGONG WEBSITES UPDATE

Naj Aziz

School of Civil, Mining and Environmental Engineering
University of Wollongong, Australia



University of Wollongong



Coal Mining Science & Technology

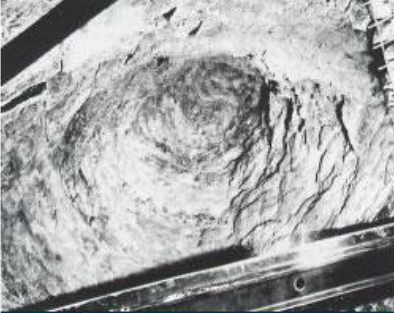
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All of UOW
[Site Index](#) | [Site Map](#)


COAL

[UOW Home > Research > Coal Science & Technology \(COAL\)](#)


- ◆ Homepage
- ◆ About Us
- ◆ Longwall Mining
- ◆ Coal Mine Outbursts
- ◆ Bord & Pillar
- ◆ Future Projects
- ◆ Glossary



COAL MINE OUTBURSTS



LONGWALL MINING



BORD & PILLAR

Coal Operators' Conference 2013
February 16th and 17th 2012
<http://www.coalconference.net.au>

<http://www.uow.edu.au/eng/longwall>

<http://www.uow.edu.au/eng/outburst>

<http://www.uow.edu.au/eng/pillar>

<http://www.coalconference.net.au>

Coal Mine OUTBURSTS

ACARP Project - C14015

Overview

Factors

Management

Research & Publication

Links

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ACARP

Australian Coal Association Research Program

098364 visitors since 14 August 2007

WHATS NEW

[View Real Time Rock Bumps Video!!](#)

[All Coal Operators Conference Papers](#)

Wollongong, Wednesday, June 27th, 2012

5 - visit <http://www.coalconference.net.au>

DEFINITION

Outburst has been defined as a spontaneous ejection of gas and coal from the solid face, where the gas is a mixture of methane and carbon dioxide. This definition is questioned in the use of the term "spontaneous" as this suggests an outburst occurs without triggering, when an outburst can be provoked with the use of explosives or during the cutting of coal. Thus, outbursts have also been defined as a phenomenon characterised by ejection from the solid face into the mine as a mixture of broken rock and gas.



Coal Mine OUTBURSTS

[Overview](#)[Factors](#)[Management](#)[Research & Publication](#)[Links](#)

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CONTRIBUTIONS

[ACARP Reports](#)

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WHAT'S NEW

ongong, Wollongong, Wollongong, Wollongong

DEFINITION

Outburst has been defined as the sudden and violent ejection of coal and gas from a coal seam, or the ejection of coal and gas from a coal seam, or the ejection of coal and gas from a coal seam.

ACARP REPORTS
COMPLETED THESIS
PRESENTATIONS
PUBLICATIONS
REFERENCES
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ACARP Project - C14015

Overview

Factors

Management

Research & Publication

Links

RESEARCH AND PUBLICATIONS

ACARP REPORTS:

- [ACARP Gas and Outburst Workshop - 28th August 2004 \(download\)](#)
- [Gas and Outburst Workshop - 22nd November 2003 \(download\)](#)
- [Outburst Scoping Study - John Hanes \(download\)](#)
- [Real Time Return Gas Monitoring for Outburst and Gas Drainage Assesment - July1997, ACARP project C 3076\(download,1.13MB\)](#)
- [Outbursting Scoping Study - March 1996 \(Lama & Bodziony.ACARP project, C 4034\)\(download, 39.0MB\)](#)
- [Outburst Symposium - March 1995, ACARP project C 3079\(download, 80.5MB\)](#)
- [Coal Mine Outburst Mechanism, Thresholds & Prediction Techniques - Ian Gray \(ACARP C14032\)](#)
- [Other ACARP Reports](#)
- [NERDDC Completed Projects Report Booklet](#)

Lama's Books

University of Wollongong



ACARP

Australian Coal Association Research Program



**FACTORS AFFECTING THE DRAINAGE OF GAS FROM COAL
AND METHODS TO IMPROVE DRAINAGE EFFECTIVENESS**

A thesis submitted in fulfilment of the requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

DENNIS JOHN BLACK

B. Eng. (Hons) (Mining), Assoc. Dip. Mine Ventilation, Grad. Dip. Mgt

School of Civil, Mining and Environmental Engineering

2011

Coal Mine OUTBURSTS

ACARP Project

[Overview](#)

[Factors](#)

[Management](#)

[Research & Publication](#)

[Links](#)

PRESENTATIONS

Gas and Outbursts seminars Wollongong

November 2011

- [Advances In Gas Drainage & Management Within AAMC](#)
- [Clean Energy Future - Australia's Climate Change Plan](#)
- [Effective Response To An Emergency At An Underground Coal Mine - David Cliff](#)
- [3rd Generation VRT Training -B dowsett V2](#)
- [A new method for diesel particulate measurement of raw engine emissions - Trev Wilson](#)
- [OB Seminar November 2011 Q&A](#)
- [Occupational Hygiene Monitoring- Gary Mace - Dec 2011](#)
- [Outburst Incidents in Mexican Coal Mines- Brian Nicholls](#)
- [Smartgas_ Robert Strang](#)

June 2011

- [Raising The Outburst Threshold - Peter Wynn](#)
- [Pike River Presentation - Outburst Committee](#)
- [Virtual Reality Presentation On Mine Safety Training <---](#)
- [Comments On Outburst Thresholds In Bulli Seam Mines - Ray Williams](#)
- [Outburst Seminar Q&A](#)

December 2010

- [In-hole Surveying - Where we are and Where we are going - Mark MacCabe](#)
- [Personal DP and Noise Exposure Monitoring - Gary Mace](#)

All Presentations
Since 2002



PUBLICATIONS

AUSTRALIA

. **AUSIMM publication:**

- [1980](#)
- [1981](#)
- [1982](#)
- [1983](#)
- [1986](#)
- [1992](#)

. **Coal Operators conference:**

- [1998](#)
- [2001](#)
- [2002](#)
- [2003](#)
- [2004](#)
- [2005](#)
- [2006](#)
- [2008](#)
- [2009](#)
- [2010](#)
- [All papers 1998 to 2012](#)

. **Committee on Outburst Research Symposium 1983**

- [Introduction](#)
- [Chapter 1](#)
- [Chapter 2](#)
- [Chapter 3](#)
- [Chapter 4](#)
- [Chapter 5](#)
- [Chapter 6](#)
- [Chapter 7](#)
- [Chapter 8](#)
- [Chapter 9](#)
- [Chapter 10](#)
- [Chapter 11](#)
- [Chapter 12](#)
- [Chapter 13](#)
- [Chapter 14](#)
- [Chapter 15](#)
- [Chapter 16](#)
- [Chapter 17](#)
- [Chapter 18](#)

. **Symposium on Coalbed Methane, Research and Development in Australia**

Organised by Dr Lama at UNSW

18 papers and worth reading

**Townsville by Basil Beamish
1992- five volumes**



[Home](#) > [Engineering](#) > [coal](#)

COAL OPERATORS' CONFERENCE

The [Coal Operators' Conference](#) has been held at the University of Wollongong since 1998. The Conference is organised jointly by the Illawarra Branch of The Australasian Institute of Mining and Metallurgy AusIMM, the University of Wollongong and the Mine Managers Association of Australia. For further information contact Naj Aziz (Chairman and Convenor), School of Civil, Mining and Environmental Engineering, University of Wollongong, 2522. Tel: (02) 4221 3449. Email: naj_aziz@uow.edu.au. See also the [conference website](#) and the [Coal Science and Technology website](#). Listing of previous conference papers here:



[1998](#) | [2001](#) | [2002](#) | [2003](#) | [2004](#) | [2005](#) | [2006](#) | [2008](#) | [2009](#) | [2010](#) | [2011](#) | [2012](#)

Papers from 2012

-  [PDF](#) [Development and mining of high gas low permeability coal seams in the Karaganda coal field-Kazakhstan, Sergazy Baimukhametov, Yuriy Stefluk, and Maarten Velzeboer](#)
-  [PDF](#) [Investigating the influence of reactive pyrite on coal self-heating, Basil Beamish, Zhang Lin, and Rowan Beamish](#)
-  [PDF](#) [Prevention of frictional ignition in coal mines using chilled water sprays, B. Belle, D. Carey, and B. Robertson](#)
-  [PDF](#) [Experiences of the institute of occupational medicine foam respirable sampler use in mines, Bharath Belle](#)
-  [PDF](#) [Opportunity for re-entry into a coal mine immediately following an explosion, Darren Brady and David Cliff](#)
-  [PDF](#) [Failure modes of rockbolting, Chen Cao, Jan Nemcik, Naj Aziz, and Ting Ren](#)
-  [PDF](#) [Application of a numerical model for outburst prediction, control and management, Xavier S.K Choi](#)
-  [PDF](#) [Addressing resin loss and gloving issues at a mine with coal roof, Peter Craig](#)

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➤ **130 countries**
➤ **200 000 hits**
in one year
➤ **Pike River paper**
a popular paper



PERMEABILITY TESTING OF COAL UNDER DIFFERENT TRIAXIAL CONDITIONS

Lei Zhang , Naj Aziz, Ting Ren, Jan Nemcik and Zhongwei Wang

ABSTRACT: Permeability refers to the ability of coal to transmit gas when a pressure or concentration gradient exists across it. The permeability of coal is dependent upon factors that include effective stress, gas pressure, water content, disturbance associated with drilling and matrix swelling/shrinkage due to adsorption/desorption. A programme of laboratory tests were conducted on coal samples from the Bulli seam for evaluating the permeability and drainability of coal. The study was conducted using two different types of permeability apparatus. The methods of permeability testing of coal under different triaxial conditions are discussed. Permeability testing of the Bulli seam coal sample with N₂ is described as an example in this study. Both the tests results and the values of calculated permeability were in agreement.



Coal Mining Science & Technology

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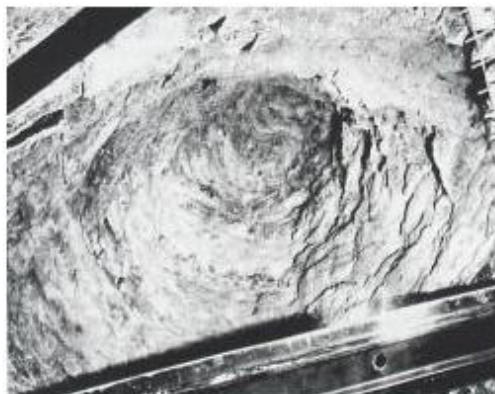
Go

[Site Index](#) | [Site Map](#)

COAL

[UOW Home](#) > [Research](#) > [Coal Science & Technology \(COAL\)](#)

- ◆ [Homepage](#)
- ◆ [About Us](#)
- ◆ [Longwall Mining](#)
- ◆ [Coal Mine Outbursts](#)
- ◆ [Bord & Pillar](#)
- ◆ [Future Projects](#)
- ◆ [Glossary](#)



COAL MINE OUTBURSTS



LONGWALL MINING



BORD & PILLAR

Coal Operators' Conference 2012

February 16th and 17th 2012³

<http://www.coalconference.net.au>



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[Overview](#)[Equipment](#)[Ground Control](#)[Ventilation](#)[Changeout](#)[Punch Longwall](#)[Research and Publication](#)[Links](#)

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[Overview](#)[Equipment](#)[Ground Control](#)[Ventilation](#)[Changeout](#)[Punch Longwall](#)[Research and Publication](#)[Links](#)

RESEARCH AND PUBLICATION

- [11th International Ground Control in Mining, Wollongong, 7-10 July 1992. Editors: Naj I. Aziz and Syd S. Peng](#)
- [Geomechanics/Ground Control in Mining and Underground Construction, July 1998. Editors: Naj Aziz and Buddhima Indraratna](#)
- [Analytical Tools For Managing Rock Fall Hazards In Australian Coal Mines. Editors: Ross Seedsman, Nick Gordan and Naj Aziz](#)
- [International Conference on Ground Control in Mining - Morgantown.](#)
- [Ground Movement & Control Related to Coal Mining - 1986, Ausimm Illawarra Branch. Editor: Naj I. Aziz](#)
- [The Stability of Underground Workings in the Soft Rocks of the Coal Measures. Editor: Arthur Heriot Wilson, B.Sc. PHD Thesis, April 1980.](#)



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30th International Conference on Ground Control in Mining



29th International Conference on Ground Control in Mining



28th International Conference on Ground Control in Mining

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Most Popular

- Review and Estimation of the Hydraulic Conductivity of the Overburden above Longwall Panels. Experience from

30th International Conference on Ground Control in Mining

Total Papers: 46

Chinese Mining Practices/Solutions

- Research on Mine Pressure Behaviors and Overlying Strata Movement Laws in Solid Backfill Mining Methods, Shengli Yang, Jiachen Wang, Shengming Wang, China University of Mining and Technology (Beijing), Beijing, China
- Surface Subsidence Velocity of Fully-Mechanized Thick Seam Top Coal Caving Mining, Wenbing Guo, Xiaochuan Ma, Chengfei Huang, Henan Polytechnic University, Jiaozuo, China
- The Technical Progress and Problems to be Solved of Thick Coal-Seam Mining in China, Jiachen Wang, China University of Mining and Technology, Beijing, China

Highwall/Open Cut Practices/Issues

No Papers.

Tunnel/Slope Ground Control Stra...

- Designing Shotcrete as Primary Support in Tunnels, Behdeen Oraee-Mirzamani, Imperial College London, London, United Kingdom, Mahdi Tavassoli, Tarbiat Modares University, Tehran, Iran, Kazem Oraee, University of Stirling, Stirling, United Kingdom
- Application of Stress, Geologic, and Support Design System (SGSSM) to Ground Control for Mine Slope Entries, John Stankus, Kevin Jinrong Ma, Hanjie Chen, Xiaoting Li, Jennmar Corporation, Inc, Pittsburgh, PA
- Recent Innovations for Slope Development, Tim Burgess, J.H. Fletcher & Co., Huntington, WV, Mark Cornell, Patton Mining Company, Hillsboro, IL, Ben Hardman, J.H. Fletcher Co., Huntington, WV, Simon Stepp, Patton Mining Company, Hillsboro, IL

Ultra Thick Mining Practices/Issues

- Study on Eco-Friendly Underground Mining System for Ultra-Thick Coal Seams in Thailand, Takashi Sasaoka, Hideki Shimada, Kikuo Matsui, Akihiro Hamanaka, Nay Zar Lin, Kyushu University, Fukuoka, Japan, Hiroshi Takamoto, Mmi Coal Tech, Tokyo, Japan

Subsidence Evaluations II

- A Pipeliner's Perspective on Longwall Mining, Robert B Francini, Kiefner and Associates, Inc., Worthington, OH
- The Effects of Longwall Coal Mining on the Hydrogeology of Southwestern Pennsylvania, Megan N Witkowski, University of Pittsburgh, Pittsburgh, PA

Subsidence Evaluations I

- Surface Structures Impacted by Subsidence from Pennsylvania Coal Mines, 2003 to 2008, Anthony Iannacchione, Megan Witkowski, Jessica Benner, Amy Patil, Nicole Iannacchione, University



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[Overview](#)[Equipment](#)[Ground Control](#)[Ventilation](#)[Changeout](#)[Punch Longwall](#)[Research and Publication](#)[Links](#)

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- [Geomechanics/Ground Control in Mining and Underground Construction, July 1998. Editors: Naj Aziz and Buddhima Indraratna](#)
- [Analytical Tools For Managing Rock Fall Hazards In Australian Coal Mines. Editors: Ross Seedsman, Nick Gordan and Naj Aziz](#)
- [International Conference on Ground Control in Mining - Morgantown.](#)
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- [The Stability of Underground Workings in the Soft Rocks of the Coal Measures. Editor: Arthur Heriot Wilson, B.Sc. PHD Thesis, April 1980.](#)

ANALYTICAL TOOLS FOR MANAGING ROCK FALL HAZARDS IN AUSTRALIAN COAL MINE ROADWAYS

ROSS SEEDSMAN^{1,2}

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NAJ AZIZ¹

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2 Seedsman Geotechnics Pty Ltd

3 Gordon Geotechniques Pty Ltd

BORD AND PILLAR Mining

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[All Coal operators conference papers](#)



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Coal Operators' Conference February 14th and 15th, 2013 University of Wollongong McKinnon Building 67



Home
Call for Papers
Guide to Authors
Sponsors and Exhibitors
Sponsors
Online Registration
Past Publications
Past Coal Photos
Accommodation
UOW Map
Conference Dinner



Coal Operators' Conference (COAL2013)

The Coal Operators' Conference is an annual event, held regularly at the University of Wollongong campus on February. The Conference is organised jointly between the University of Wollongong, the Illawarra Branch of The Australasian Institute of Mining and Metallurgy, and Mine Managers Association of Australia.

The next Coal Operators' Conference 'Coal 2013' is scheduled for February 14th and 15th, 2013, at the University of Wollongong. The Conference will address issues related to various aspects of modern underground coal mining operations. Accordingly, papers are invited from the following topics:

- Surface mining.
- Geology.
- Heading Development
- Mining methods: longwall, bord and pillar, top coal caving and hydraulic mining.
- Equipment and machinery performance or innovations.
- Ground control and strata management.
- Longwall and roof fall recovery.
- Instrumentation and monitoring.
- Mine subsidence.
- Mine fires and explosions.
- Mine flooding.
- Risk management.
- Mine management and mine contract.

UPDATE

**FULL COAL PROGRAM
NOT AVAILABLE YET**

We strongly encourage papers from coal mine operations, as well as applied and fundamental coal mining research.

Important dates

Abstract submission	August 24th, 2012
Acceptance of the paper based on abstract	September 14th, 2012
Date of full paper submission	November 2nd, 2012

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<http://ro.uow.edu.au/coal>

[All papers since 1998]

UOW Coal Mining websites:

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Next Conference is February 14/15, 2013:

[http:// www.coalconference.net.au](http://www.coalconference.net.au)



A large, bold red question mark is positioned in the upper center of the image, floating above the horizon. The background is a landscape photograph of a desert at sunset. The sun is a bright orange orb on the horizon, with rays of light breaking through the clouds. The sky is filled with dark, heavy clouds, some of which are illuminated from below by the setting sun, creating a dramatic silhouette effect. The foreground is a dark, flat desert landscape with sparse, low-lying vegetation. The overall mood is contemplative and mysterious.

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Thank You