# National Conference on the Role of Polish Coal in the National and European Energy Sector 2017

IOP Conference Series: Materials Science and Engineering Volume 268

Andrychow, Poland 19 - 21 June 2017

**Editors:** 

Piotr Banka Marcin Lutynski Marta Matyjaszek

ISBN: 978-1-5108-5267-9 ISSN: 1757-8981 Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics All rights reserved. The material featured in this book is subject to IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

#### Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2633 Email: curran@proceedings.com Web: www.proceedings.com

## **Table of contents**

## Volume 268

The Role of Polish Coal in the National and European Energy Sector 19–21 June 2017, Andrychów, Poland

Accepted papers received: 14 November 2017 Published online: 28 November 2017

#### Preface

The Role of Polish Coal in the National and European Energy Sector

Peer review statement

### Papers

Importance of hard coal in electricity generation in Poland

Franciszek Plewa and Grzegorz Strozik.....1

Access to primary energy sources - the basis of national energy security

Jan Szlązak and Rafał A Szlązak.....16

Trends in coal use - global, EU and Poland

Wojciech Suwała, Artur Wyrwa and Tadeusz Olkuski.....31

Chances of coal in European power industry

Zbigniew Łukaszczyk and Henryk Badura.....39

The possibility of increasing the efficiency of accessible coal deposits by optimizing dimensions of protective pillars or the scope of exploitation

Piotr Bańka, Henryk Badura and Marek Wesołowski.....50

An overview of potential benefits and limitations of Compressed Air Energy Storage in abandoned coal mines

Marcin Lutyński.....59

The determination of methane resources from liquidated coal mines

Stanisław Trenczek.....68

Costs assessment of aerological hazards prevention exemplified by a coal mine company

Dariusz Musioł.....78

<u>Possibility of reducing costs of mining operations – economic aspects of workplace</u> <u>accidents</u>

Adam Duda.....89

Mining machines effectiveness and OEE Indicator

Jacek Korski, Katarzyna Tobór-Osadnik and Małgorzata Wyganowska.....96

Disposal of coal combustion wastes in the hydraulic backfill process

Piotr Pierzyna.....107

The impact of changes in the rheological parameters of fine-grained hydromixtures on the efficiency of a selected industrial gravitational hydraulic transport system

Marcin Popczyk.....116

<u>Hazards and occupational risk in hard coal mines – a critical analysis of legal</u> requirements

Marcin Krause.....125

Motivation and proposal of important categories of the work of mine rescuer

Aneta Grodzicka, Jan Szlązak and Piotr Buchwald.....133

Study of the 'lifeline' as the measure allowing for safe self-rescue of miners in conditions of lack of visibility caused by underground fire

Henryk Badura, Aneta Grodzicka and Dariusz Musioł.....144

Forecasts of methane concentration at the outlet of the longwall with caving area - case study

Henryk Badura, Piotr Bańka, Dariusz Musioł and Marek Wesołowski.....157