

Preface

The AMI Light Metals Conference 2014, hosted by the Council for Scientific and Industrial Research (CSIR), South Africa, took place from October 15th to 17th 2014 at Kwa Maritane Bush Lodge, Pilanesberg National Park, South Africa.

The AMI Light Metals Conference 2014 was intended to provide a forum for researchers and industry players to present the progress made over the past few years on the research and development of technologies for industrial applications of light metals. Papers dealt with research and development and technologies in areas such as primary metal production, metal powder processing, advanced casting processes, joining, high-performance machining, forming and forging. Supporting competences, such as physical metallurgy, simulation and modelling, mechanical and physical property characterisation and commercialisation were also addressed.

The objective of the Advanced Metals Initiative (AMI) is to increase the value-addition of South African mineral resources in a sustainable manner through industry relevant research and development, technology transfer, and ultimately, commercialisation of advanced materials. The four networks of the AMI are Light Metals (titanium, aluminium & magnesium), Precious Metals (gold & the platinum group metals (PGMs)), Nuclear Materials (zirconium, hafnium, tantalum, niobium & monazite) and Ferrous & Base Metals. Papers from students involved in all four networks of the AMI were also included. Students were encouraged to make the most of the opportunity to share their work with their peers and to grow their presentation skills during a Student Seminar on 15 October 2014.

To ensure the academic integrity of research conducted in the AMI, the submitted papers have been individually peer reviewed. We want to thank both the reviewers and the authors for their valuable work and effort to achieve the best possible results.

H. Möller

Chairman of the AMI Light Metals Conference 2014

AMI Light Metals Conference 2014

Chairman

Heinrich Möller

Peer Review Committee Members

Ashraf Imam	USA	Jaco van der Walt	South Africa
Brian Gabbitas	New Zealand	Johann Nell	South Africa
Carl Reinhardt	South Africa	Kalenda Mutombo	South Africa
Chris Machio	South Africa	Lesley Chown	South Africa
Chris Pistorius	USA	Lesley Cornish	South Africa
Christian Doblin	Australia	Mike Wolhuter	South Africa
Danie Hattingh	South Africa	Neale Neelameggham	USA
Daniel Wamwangi	South Africa	Oliver Damm	South Africa
Dawie van Vuuren	South Africa	Pierre Rossouw	South Africa
Debby Blaine	South Africa	Ronald Machaka	South Africa
Delphine Cantin	Australia	Sarah George	South Africa
Filipe Pereira	South Africa	Shaan Oosthuizen	South Africa
Gary Pattrick	South Africa	Sigqibo Camagu	South Africa
Gonasagren Govender	South Africa	Silethelwe Chikosa	South Africa
Heinrich Möller	South Africa	Ulyate Curle	South Africa
Herman Burger	South Africa	Waldo Stumpf	South Africa
Hilda Chikwanda	South Africa	Willie du Preez	South Africa

Conference Organising Committee Members

Heinrich Möller	Gonasagren Govender
Ronald Machaka	Sigqibo Camagu
Llanley Simpson	Wilna du Plessis
Willie du Preez	

Conference Organising Staff

Kelly-Anne Matthews
Lionel Jean Michel

Earle Sauls

Organised by



our future through science

**The Council for Scientific and Industrial Research,
South Africa**

Main Supporters



**science
& technology**

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

