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Infacon XV

**The Fifteenth
International Ferro-Alloys Congress**

25–28 February 2018

Century City Conference Centre, Cape Town, South Africa

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Foreword

This publication records the proceedings of the Fifteenth International Ferro-Alloys Congress, Infacon XV, held in Cape Town, South Africa from 25–28 February 2018.

This congress represents a changing industry in a changing world. There have been major structural changes in the ferro-alloys industry over the past few years, as companies seek to find the global economic optimum of where and how important metals are produced. We see further evidence of change in South Africa's new political leadership, and there is an improved mood of optimism now coming to the fore. The current drought in Cape Town makes us aware of the importance of adapting to a changing climate, and causes us to reflect on how, as responsible citizens of our planet, we can improve the environmental performance and energy efficiency of our industry. We can perhaps dream a little of a day, some time in the future, when most electrical energy is produced from clean hydropower or solar power, and water supplies in Cape Town are supplemented by towed icebergs.

It is an appropriate time for a scientific gathering to take place in Cape Town, as we remember an important event that took place here just over fifty years ago. On 3 December 1967, the eyes of the world were focused on the world's first heart transplant by Dr Chris Barnard, one of the world's early celebrity scientists. This event was almost as closely watched as the moon landing less than two years later.

For Infacon XV, about 150 papers were finally selected for publication, from 199 abstracts that were submitted. All papers were thoroughly reviewed by at least two independent experts in their respective specialist fields, and this process has greatly improved the quality of the contributions. We are very grateful to the 148 reviewers who gave their time freely in undertaking this monumental task, and appreciate their valuable technical and editing inputs. Authors from 29 countries will present their work to over 400 delegates from 32 countries, through the 45 technical sessions. We appreciate the time and effort that the authors have put into their papers and presentations. The organizing committee and conferencing team have done a great job of putting all of this together into a coherent whole.

We have tried to cover the major ferro-alloys (especially FeCr and FeMn) extensively. The primary focus is on technical aspects of production processes, furnaces, and power supplies, but safety, environmental, and legislative aspects are covered too. We hope that the topics discussed reflect many of the needs and challenges faced by ferro-alloy producers today. We hope that you will find the technical discussions relevant and interesting.



Professor Rodney T. Jones & Professor R. Hurman Eric
Co-Chairpersons of Infacon XV

Welcome to Infacon XV in Cape Town, on behalf of the International Committee on Ferro-Alloys (ICFA)

On behalf of the International Committee on Ferro-Alloys (ICFA), it is with great pleasure that we welcome all the participants at Infacon XV in Cape Town. After a cycle of four congresses in the northern hemisphere, it is appropriate that Infacon returns to South Africa at a time of great change in the region. South Africa has had a very strong role to play in the global ferro-alloy industry for a very long time. Even if the nature of its contribution changes, the country will continue to be a major player in this arena. It is a pleasure for Infacon to return to Cape Town – a city of great scenic beauty and world heritage sites.

ICFA would like to thank the Organizing Committee of Infacon XV for their dedication and the huge amount of hard work that they put into arranging this congress, ever since June 2015 when it was awarded to South Africa at the ICFA meeting held during Infacon XIV in Kyiv, Ukraine. Thanks are also due to the Southern African Institute for Mining and Metallurgy (SAIMM) for hosting and ensuring the smooth running of this event. The Ferro-Alloy Producers' Association (FAPA) encouraged its members to open their operations to visitors, and a well-supported programme of post-conference technical tours has been arranged. Mintek and the University of the Witwatersrand were extremely supportive in allowing their staff to be actively engaged in organizing this event. The experienced International Advisory Committee were always ready and available to offer support and guidance. The support of our sponsors and exhibitors is also greatly appreciated.

The publication of scientific and engineering work is seen as vital to our industry. The Infacon series of congresses is well known for the quality of its papers, due largely to the enormous amount of work that is put into reviewing papers. Each paper at this congress has been reviewed by two independent experts, who have freely and generously given their time to improving the quality of the work that is presented and published. ICFA has a policy of making all papers from current and past Infacon events freely available via open access, and all Infacon papers are now available online.

The International Committee on Ferro-Alloys (ICFA) plans to hold its next meeting during Infacon XV, and will announce the host for Infacon XVI during the closing ceremony of this congress on 28 February 2018.

We look forward to interesting technical sessions, stimulating discussions with colleagues, and a most enjoyable social programme in Cape Town.



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Previous Infacon Events

Infacon I, Johannesburg, South Africa, 22-26 April 1974
Infacon II, Lausanne, Switzerland, 12-16 October 1980
Infacon III, Tokyo, Japan, 8-11 May 1983
Infacon IV, Rio de Janeiro, Brazil, 31 August – 3 September 1986
Infacon V, New Orleans, USA, 23-26 March 1989
Infacon VI, Cape Town, South Africa, 8-11 March 1992
Infacon VII, Trondheim, Norway, 11-14 June 1995
Infacon VIII, Beijing, China, 7-10 June 1998
Infacon IX, Quebec City, Canada, 3-6 June 2001
Infacon X, Cape Town, South Africa, 1-4 February 2004
Infacon XI, New Delhi, India, 18-21 February 2007
Infacon XII, Helsinki, Finland, 6-9 June 2010
Infacon XIII, Almaty, Kazakhstan, 9-12 June 2013
Infacon XIV, Kyiv, Ukraine, 1-4 June 2015
Infacon XV, Cape Town, South Africa, 25-28 February 2018

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