

# Annual report

FOR THE YEAR ENDED 30TH JUNE 2010

## Council for 2009/2010

### President

J.C. Ngoma

### President-elect

G.V.R. Landman

### Vice-presidents

#### Senior

J.N. van der Merwe

#### Junior

G.L. Smith

#### Immediate Past-President

A.M. Garbers-Craig

#### Honorary Treasurer

J.A. Cruise

## Members of Council

N.A. Barcza

R.D. Beck

Z. Botha\*

F. Cawood####

M.J. Cole\*

J.A. Cruise

J.R. Dixon

A.G. du Plessis

J.J.L. du Plessisa

M. Dworzanowski

F.M.G. Egerton

W.R.J. Erasmus†

P.A.P. Fouche

A.M. Garbers-Craig

M.F. Handley

N. James

R.T. Jones

W.C. Joughin

P.J. Knottenbelt\*\*

W. Kutekwatekwa†

G.V.R. Landman

M. Lebitsa†

E. Lwamba†

A.S. Macfarlane

R.P. Mohring

O. Mothibi†

M.J. Mothomogolo

M. Motuku\*

M.I. Mthenjane\*

A.F. Mulaba-Bafubiandi\*\*

S.C. Mulenga†

R.G.B. Pickering

J.L. Porter

S.J. Ramokgopa

M.K.C. Roberts

M.H. Rogers

A.J. Ross-Watt

C. Smith##

G.L. Smith

T.R. Stacey

C.A.F. Sweet†

J. Sweet†

D. Tudor#

M. Valenta\*\*\*

T. van den Berg\*\*\*\*

P. van der Linde\*\*\*\*\*

J.N. van der Merwe

P.J. van der Plas

D.J. van Niekerk

W.H. van Niekerk

J. van Zyl Visser

D. Walters#####

R.P.H. Willis

M. Woodhall†

H. Zimba†

\* Co-opted Members

\*\* Representing non-corporate members on Council

\*\*\* Observer MMMA

\*\*\*\* Observer AMMSA

\*\*\*\*\* Observer SACMA

# Observer SACPS

## Observer GSSA

### Observer SANIRE

#### Observer IMSSA

##### Observer MVSSA

† Branch Chairmen

## Branch Chairmen

Bushveld Branch

Botswana Branch

Johannesburg Branch

Namibian Branch

Pretoria Branch

Western Cape Branch

Zambian Branch

Zimbabwean Branch

Zululand Branch

C.A.F. Sweet

H. Marsden

M. Woodhall

B.M. Litana

O. Mothibi

J. Sweet

S.C. Mulenga

W. Kutekwatekwa

W.R.J. Erasmus

## Past-Presidents serving on Council

N.A. Barcza

R.D. Beck

J.R. Dixon

F.M.G. Egerton

R.P. Mohring

S.J. Ramokgopa

M.H. Rogers

D.A.J. Ross-Watt

T.R. Stacey

W.H. van Niekerk

R.P.H. Willis

R.G.B. Pickering

## Key objectives of the Institute

*To initiate and give effect to the means whereby the requirement for technology and scientific knowledge of the minerals and metals section of the Southern African economy is satisfied; and to represent and promote the interests of its members.*

## Arrangement of this Report

In accordance with the current management policy, this report on the activities of the Institute is presented under eight main headings:

1. Interests of Individual Members
2. Technical Meetings
3. Publications
4. Regional Development
5. Engineering Science and Technology in South Africa
6. State Liaison
7. International Liaison
8. Management and Administration.

## 1. Interests of Individual Members

Portfolio Holder: A.M. Garbers-Craig

### Key Performance Areas

*In the interests of individual members, the SAIMM*

- *Undertakes to assess the qualifications, experience, and the level of responsibility of applicants for membership, and allocates a membership certificate in an appropriate grade as a means of granting appropriate professional and technical status to individuals who practise in the minerals and metals sector*

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- ▶ *Arranges conferences, colloquia, schools and seminars where technical information on mining, metallurgical and allied issues is disseminated. Both members and the general industry benefit from these interchanges*
- ▶ *Undertakes to prepare and publish career guidance brochures, bursary handbooks, audiovisual and video programmes, optional school curricula material, etc., and participates in activities to stimulate scholars and students to select careers in the minerals and metals sector of the South African economy*
- ▶ *Guards the professional interests of engineers, scientists, technologists, and technicians by providing a corporate voice and by representing their interests on bodies such as the Engineering Council of South Africa*
- ▶ *Through representation on ECSA, assists with the evaluation of curricula at universities and technikons with a view to improving the level of education of graduates and diplomates and ensures that the courses are relevant to the needs of the minerals and metals sector*
- ▶ *Makes awards, in the form of medals, prizes and certificates, in order to recognize technical excellence, to stimulate a sense of pride in high standards of performance, and to encourage individuals involved in the minerals and metals sector to share the results of their work through publication. The following are eligible for SAIMM awards: individuals for the very highest achievements in the Southern African mining and metallurgical industry, SAIMM members and non-members for papers of the highest standard published in the Journal or other SAIMM publications, and students from universities and technikons for exceptional academic performance*
- ▶ *Arranges technical excursions, banquets, and other social events to create opportunities for professional association and fellowship for its members.*

### 1.1 Membership Committee

G.V.R. Landman, Chairman

N.A. Barcza	M. Roberts
J.A. Cruise	M.H. Rogers
J.R. Dixon	D.A.J. Ross-Watt
F.M.G. Egerton	G.L. Smith
P. Knottenbelt	T.R. Stacey
R.P. Mohring	O.K.H. Steffan
R.G.B. Pickering	J.N. van der Merwe
J. Porter	D.J. van Niekerk
S.J. Ramokgopa	W.H. van Niekerk

#### Membership

The SAIMM membership comprises engineers, metallurgists, chemists, physicists, geologists, certificated managers, and technikon diplomates, all of whom have an interest in the fields of mining, extractive metallurgy, metals technology, and other related areas.

#### Corporate members are classified as follows

HONORARY LIFE FELLOW: must have rendered services to the Institute, science, or industry.

FELLOW: (Minimum age 35 years.) A person eligible for election or transfer into the class of Fellow shall be any minerals professional employed for a minimum of five years in a senior technical position of responsibility provided that the candidate has had ten years' combined technical tertiary education and appropriate experience, or experience only.

MEMBER: (Minimum age 25 years.) A person eligible for election or transfer into the class of Member shall be employed for a minimum of two years in a technical position of responsibility provided that the candidate has had five years' combined technical tertiary education and appropriate experience, or experience only.

#### Non-corporate members are classified as follows

COMPANY AFFILIATE: companies associated with mining or metallurgical industries are eligible for membership.

HONORARY FELLOW: persons of distinction in public service, science, or the arts.

ASSOCIATE: a person eligible for election or transfer into the class of Associate shall be any person with a recognized industry qualification, within the disciplines of mining, extractive metallurgy, or metals technology.

STUDENT: a full-time student or postgraduate student at a university, technikon, or any other educational institution approved by Council, who is being trained to occupy a technical position in the mining or metallurgical industry or associated organizations.

#### Membership Roll

Members of the Institute are divided into Corporate and Non-Corporate Members, all of whom are entitled to attend and speak at meetings. Only Corporate Members are entitled to vote. All applications for membership or transfer require one proposer and one seconder.

RESIGNATION: A member may resign from the Institute by sending his or her written resignation to the Secretary together with payment of any monies due.

RETIRED MEMBERSHIP: A Fellow or Member who has *bona fide* retired from active business may retain membership at a reduced subscription providing he or she has been a member for 20 years. Members can contact the Secretary to establish the number of years of service prior to submitting a written request for Retired Membership to the Institute.

STUDENTS: A candidate may remain a Student member only while he or she is being educated or trained in a manner approved by the Council.

When he or she no longer qualifies as a Student member, he or she shall automatically be transferred to the category of Associate. Students are reminded to forward a copy of their degree certificates to the Institute on graduation.

A candidate may not remain a Student member after the end of the Institute's financial year in which he or she attains the age of twenty-eight years, unless the Institute receives written confirmation from the university or technikon that the Student member is still a full-time student.

CHANGE OF DETAILS: It is essential that members contact the Institute without delay about change in designation, change in employer, payment address or change in postal address. Without this the communication link to members is broken.

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*Table 1*

**Summary of new applications and membership movements for 2009/2010 and comparison of membership grades and total membership 2009/2010**

Membership grade	Members July 2009	New members	Transfers in	Transfers out	Reinstatements	Resignations	Deceased	Struck-off	Net gain/(loss)	Members June 2010
Honorary Life Fellow	37	0	0	0	0	0	0	0	0	37
Honorary Fellow	4	0	0	0	0	0	0	0	0	4
Life Fellow	10	0	0	0	0	0	1	0	-1	9
Fellow	426	4	26	9	0	10	6	8	-3	423
Retired Fellow	137	0	9	0	1	5	7	1	-3	134
Life Member	1	0	0	0	0	0	0	0	0	1
Member	901	121	15	26	10	20	5	50	45	946
Retired Member	99	0	8	0	1	5	4	1	-1	98
Associate	821	124	204	27	6	30	0	121	-156	977
Retired Associate	12	0	1	0	0	0	0	0	1	13
Student	1033	160	3	204	0	18	2	0	-61	972
Company Affiliate	143	7	0	0	0	6	0	16	-15	128
<b>Total</b>	<b>3 624</b>	<b>416</b>	<b>266</b>	<b>266</b>	<b>18</b>	<b>94</b>	<b>25</b>	<b>197</b>	<b>-118</b>	<b>3742</b>

Also, members must ensure that, where subscriptions are paid by a company, the Institute has on record the correct payment address.

### *Benefits of membership*

Individuals derive various benefits from membership of the Institute:

- Contact with fellow members
- Special reduced fees when attending congresses, symposia, colloquia, conferences, schools, discussion groups, etc.
- Notices of events promoting technology transfer, which also satisfy the need for continuing education
- A monthly *Journal* with a balanced content and of high technical standard, which serves as a communication medium to keep members informed on matters relating to their professional interests
- Participation in technical excursions, banquets, and other social events, which create further opportunities for professional association and fellowship
- Tax deduction of membership fees in most cases
- Reduced registration fees for professional registration through the Engineering Council of South Africa.

### *Companies that become Members of the Institute*

- Benefit from the opportunities to exchange knowledge, particularly about new developments and research
- Receive the Institute's publications of international conferences held in South Africa, as well as monographs on a variety of subjects and regular copies of the monthly *Journal*
- Are entitled to send two non-member employees to mining and metallurgical schools, colloquia, congresses, visits, and excursions at member rates
- Receive newsletters and notices about all Institute activities
- Benefit from the fact that Company Affiliateship is tax deductible
- Have ample opportunity to send delegates to attend technical meetings to obtain information and to benefit from the experience of others.

### **1.2 Career Guidance and Education**

P.J. van der Plas, Chairman

S. Carthy

G.V.R. Landman

M. Cole

L. Petrick

P.J. Knottenbelt

The Career Guidance and Education Committee are focused on the activities of retention and development of engineers and professionals already working in the industry or seeking to work in the industry. It also disseminates information to scholars to improve the image and awareness of careers in the mining industry at school level.

In the past year a number of initiatives was successfully completed. The committee developed a 'Best practice for graduate development' document for dissemination to new graduates to be used as a guide for their development. Companies can also use this document to gauge their requirements for their in-house programmes.

The industry was promoted among scholars at career expos. In addition, a mining competition was launched for grade 12 scholars with the theme of best innovative suggestion and/or prototype/or model for at depth (>1 000 m below surface) within an energy restricted and energy expensive environment.

The next phase of the minerals industry interactive DVD, the first of a number of videos, was launched. In another initiative, students attending the Johannesburg branch events were handed SAIMM book gift packs. They included proceedings from conferences organized by the SAIMM.

The SAIMM mentoring programme was promoted at a number of events including the annual Student colloquium, branch events, and the WUMEA chairman's cocktail party.

### **1.3 Promotion of the SAIMM**

**Portfolio holder: J.C. Ngoma**

After 116 years since its inception the Southern African Institute of Mining and Metallurgy (SAIMM) has maintained its commitment to rendering quality professional services to its

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members across the SADC region and beyond. This is, to a greater extent, due to the high calibre of people running the secretariat of the institute.

As we all know, and many of you will agree, 2009/2010 was an eventful financial year. We started the year in the middle of the global financial crisis, which saw businesses across most industries, including our own mining industry, slowing down. As is usually the case, the result was that many mining houses have had to cut back on spending, including shedding jobs, to remain afloat. This meant that fewer people could afford to attend many of our technical events, which are our main source of revenue.

Allow me to reiterate the composition of the Chinese ideogram for 'crisis'. The word is composed of two separate characters: one means danger and the other means opportunity. The proper translation is that a crisis is a dangerous opportunity. As you are all aware, we at SAIMM saw the crisis as an opportunity to fine-tune the way we conduct our business. We managed to reorganize ourselves and do things more efficiently and effectively. As a start, in November, all staff members went on a team-building exercise where goals and procedures were set. Most of these have been implemented, and are bearing fruit. The secretariat has grown from strength to strength, with new staff being employed to handle the extra workload.

The following are some of this year's highlights:

### Conference department

- ▶ We managed to run 15 successful events in various venues both in South Africa and outside the borders, mainly in Zambia, Botswana and Zimbabwe, accompanied by the publication of 15 sets of conference proceedings, with the majority of the papers being refereed.
- ▶ We hosted a total of over 2000 delegates through these events, and secured sponsorships in excess of R3 million
- ▶ We sold over 160 books at conferences and at the year-end book sale
- ▶ We improved communication through the implementation of the new bulk email sending system

### Membership department

- ▶ We boast a database of over 3 700 members. We have struck off over 200 members from the register for non-payment of membership fees, and have cleaned up the database. Of course we have had to write off bad debt. The positive side is that we are still growing, but with quality membership that is in the right categories.
- ▶ We have improved the member registration process as well as general communication with existing members. We also provide prompt feedback on all applications made and general queries. We also have improved the keeping of member information. This is updated monthly.
- ▶ We have managed to recover a big number of 'lost' members over the past year, through our 'address unknown' method—with the help of all our existing members of course.
- ▶ There is an increase in the number of auto-transfers tabled each month. We are managing to track down more and more students, who have completed their studies

and entered the working world, thus enabling them to continue enjoying the service rendered by the institute. This is also our main priority for the next financial year.

- ▶ A complete new filing system is now implemented, seeing that the database is extending more and more.
- ▶ We have seen an increase in branch activity across the region. Within South Africa, we have had successful events in the Johannesburg, Pretoria, Zululand, and Cape Town branches. The SAIMM Johannesburg Branch, has monthly events, and is also enjoying an increase in delegate attendance. Students are attending not only from Wits, but also from the University of Johannesburg and UNISA. Outside the borders, we have had successful events in Zambia, Botswana, and Zimbabwe, and the Namibian branch is getting active again.

### Publication department

- ▶ Have had a successful handover of the reigns, with Richard Beck retiring as consulting editor and Dave Tudor taking his place. The *Journal* was published every month with articles from corresponding members overseas with their perspectives on the country that they are living in.
- ▶ The total advertisement revenue has exceeded last years' figure, which is encouraging considering the economic climate. The advertisers are also showing interest in having adverts or banners placed on our website.
- ▶ The Institute is now registered with the ABC circulation board (we are now audited four times a year), so stricter control of the distribution of the *Journal* is now recorded together with a schedule of expenses, which specifies the cost per *Journal* for each month. Professor Robinson continues to write very interesting and controversial *Journal* Comments, which are now featured on our website—members and website-users are encouraged to login and comment on these articles.
- ▶ We launched the new and revamped SAIMM website, which went live in August 2009. Feedback received from our committee members, members of the SAIMM and the general public has been very positive.

### Accounts department

- ▶ There is now strict and consistent credit control that has resulted in the amount of money owed to the Institute by debtors (especially in the 90/120 days ageing) decline from about 25% of the total book outstanding in July 2009 to about 5% at the end of June 2010. This has improved the cash flow and reduced bad debt. No relaxation of these controls is envisaged as this is a critical area affecting the liquidity of the Institute.
- ▶ Also, the suspense account is managed on a daily basis and contacts initiated with the various debtor companies' accounts departments has meant better and friendlier co-operation in resolving unknown payments. This has resulted in more accurate statements and account reconciliation.
- ▶ The constant updating and improved accuracy of the information on members/customer data base has resulted in more and speedier communications, and correspondence via email is now the norm rather than the traditional postal services. Payments are thus received more quickly, and requests and queries handled as they occur.

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- The website payment facility is now in place, and is being put to the test.

All in all, this was a successful year.

Many thanks to Julie Dixon and her team at the secretariat, for managing the affairs at the secretariat excellently. I also express my humble appreciation to the Office Bearers and the Council members for their support and for continuing to serve the Institute selflessly. I wouldn't have enjoyed my term of office as much as I have done without this support and commitment.

Thank you!

### 1.4 Awards and Adjudication Committees

#### Awards and Adjudication Committee—Mining

M.H. Rogers, Chairman

J.R. Dixon	G.L. Smith
F.M.G. Egerton	T.R. Stacey
R.G.B. Pickering	

#### Awards and Adjudication Committee—Metallurgy

M. Dworzanowski, Chairman

R.D. Beck	R.L. Paul
A.M. Garbers-Craig	

#### Honorary Life Fellows

Honorary Life Fellowship is awarded by Council to Corporate Members of the Institute who have rendered outstanding service to the industry or to the Institute over a considerable period. Council has conferred Honorary Life Fellowship on the following persons:

Pre-		
1923	A. Aiken	S.H. Pearce
	A.F. Crosse	J.P. Williams
	J. Littleton	
1923	J. Moir	
1930	H.A. White	
1931	P. Cazalet	J.A. Wilkenson
	A. Whitby	
1932	J.R. Thurlow	
1934	Wm. Cullen	A. McArthur Johnston
	W.R. Feldtmann	G.H. Stanley
	E.H. Johnson	
1938	G. Melvill	F.W. Watson
	S. Newton	
1941	J. Henderson	
1943	Sir R.N. Kotzé	
1946	J. van N. Door	T.K. Prentice
	C.J. Gray	R.S.G. Stokes
	Jas Gray	S.J. Truscott
	J.V. Muller	G.A. Watermeyer
	John Orr	J.A. Woodburn
1951	W.W. Mein	
1953	P.E. Hall	B. St. J. van der Riet
1954	C. Biccard Jeppe	
1955	P.N. Lategan	
1958	R.A.H. Flugge-de-Smidt	
1960	G. Hildick-Smith	A.J. Walton
	A.J. Orenstein	F. Wartenweiler
	H.J. van Eck	

1961	C.S. McLean	
1966	F.G. Hill	F. Meyer
1970	H.E. Cross	D.M. Jamieson
	R.C.J. Goode	
1974	R.J. Adamson	C.J. Irving
	W. Bleloch	J.F. Reid
	H. Britten	
1975	M. Barcza	J.T. McIntyre
	J. de V. Lambrechts	
1976	D.G. Maxwell	A.R.O. Williams
1978	J.K.E. Douglas	V.C. Robinson
	D.D. Howat	
1979	J.P. Hugo	P.W.J. van Rensburg
1980	Hon. S.P. Botha	R.P. Plewman
	Hon. P.G.J. Koornhof	R.E. Robinson
	A. Louw	
1982	M.G. Atmore	
1983	C.S. MacPhail	
1985	P.R. Jochens	M.D.G. Salamon
	D.G. Malan	
1986	D.G. Krige	G.Y. Nisbet
1987	A.N. Brown	
1988	J.D. Austin	D.A. Viljoen
	R.P. King	
1989	P.A. von Wielligh	
1990	S. Budavari	G.T. van Rooyen
	L.W.P. van den Bosch	
1991	H. Wagner	
1992	J. Lurie	
1993	No award	
1994	B.C. Alberts	
1995	R.D. Beck	H.E. James
	P.R. Janisch	
1996	R.J. Dippenaar	
	J.S. Freer	
	H.G. Mosenthal	
1997	J.A. Cruise	
1998	D.A.J. Ross-Watt	
1999	No award	
2000	N.A. Barcza	J.R. Dixon
	R.P. Mohring	
2001	M.H. Rogers	D.J. van Niekerk
2002	L.A. Cramer	R.F. Sandenbergh
	C.T. O'Connor	J.H. Selby
2003	A.A.B. Douglas	P.J. Knottenbelt
2004	No award	
2005	F.A. Camisani-Calzolari	
2006	T.R. Stacey	
2007	No award	
2008	E.U.H. Sachse	
2009	I. Walton	

In 2010 the SAIMM has decided to award a Honorary Fellowship to R.T. Jones for his outstanding service and dedication to the SAIMM over many years.

#### Brigadier Stokes Memorial Award

The Brigadier Stokes Memorial Award, which takes the form of a platinum medal, is awarded to an individual for the very highest achievement in the South African mining and metallurgical industry, and is not necessarily based on technical expertise.

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The Award was established in 1980, and the previous recipients were as follows:

1980	H.F. Oppenheimer
1981	W. Bleloch
1982	F.G. Hill
1983	A.W. Whillier (posthumously)
1984	D.G. Krige
1985	R.E. Robinson
1986	M.D.G. Salamon
1987	T.F. Muller
1988	W.J. (Wim) de Villiers
1989	R.A. Plumbridge
1990	W.G. Boustred
1991	P. du P. Kruger
1992	E. Pavitt
1993	D.A. Pretorius
1994	H. Wagner
1995	O.K.H. Steffen
1996	B.E. Hersov
1997	D.W. Horsfall (posthumously)
1998	B.P. Gilbertson
1999	L. Boyd
2000	A.H. Mokken
2001	T.L. Gibbs
2002	J. Ogilvie Thompson
2003	P.V. Cox
2004	H.J. Smith
2005	P. Motsepe
2006	G.T. van Rooyen
2007	D.H. Laubscher
2008	T.R. Stacey
2009	C.J. Fauconnier

This year the award is made to C. O'Connor for his outstanding contribution to the industry over many years.

### SAIMM 50 Year Club

The Institute established the 50 Year Club in 1989 to recognize the faithful and loyal support of its senior members with 50 years' unbroken membership. They become members of the club on the 50th anniversary of their joining the Institute. Their names are published each year in the Annual Report and they are presented with a gold lapel badge on a suitable occasion. There are no fees, and the only obligation of members is to wear their lapel badges with pride and affection at all meetings of the Institute. The present members of the club are as follows:

#### Year to

June	Member
1924	E.C. Polkinghorne*
1926	R.M. Martin*
1927	W. Allen*
1930	E.T. Dunstan* (posthumously)
	P.L. Ward*
1931	F. Bowdler*
1932	J.E. Laschinger*
1933	F.D. Cartwright*
	C.H. Coxon*
	J. Levin*
	D.D. McWilliam*
1934	A.C.M. Cornish-Bowden*
	H.E. Cross*
	E.R.C. O'Connor*
	B.M. Roberts*
	A.A. von Maltitz*
	T. Waterman*
	J.W.V. Mortleman*
	K. Rood*

	E.F. Laschinger*	A. Siff*
	E. Margo	O. Weiss*
1935	O.B. Swallow*	
1936	O. Deane*	A.H. Mokken*
	T.L. Gibbs*	H.L. Munro*
	R.C.J. Goode*	R.M.F. Seawright*
	F.G. Hill*	A.C. Pigott*
	D.M. Jamieson*	J.S. van Zijl*
	D.J. Rogers*	L. Walter*
1937	W. Bleloch*	J.J. Klein*
	L.A. Bushell*	C.D. Storrar
	K.W. Findlay*	
1938	V.C. Barnes*	C.A. McKechnie*
	E.T.S. Brown*	J.A. Nixon
	R.S. Cooke*	E. Poplewell*
	J.K.E. Douglas	C.G. Sowry*
	A.L.A. Forder*	E.W. Thiel*
1939	G. Armstrong-Smith*	R.S. Pearson*
	D.E.R. Ayres*	D.C.J. Squirrel*
	E.H.D. Carman	R.F.J. Teichmann*
	W.G.H. Jackson*	I.S. van Eyssen*
	T.A. Newman	S.J. Venning*
1940	L.D.C. Bok*	G.D. Gettliffe*
	A.W.L. Brereton*	G.G. Stanley*
1941	A.H.H. Davison*	D. de V. Oxford*
	D.J. Forder	E. Pavitt
	A.R.C. Fowler*	A.C. Petersen*
	H.F.W. Ketelbey*	E.R. Rudolph*
	J.D. McNamara*	P.W.J. van Rensburg*
	T.F. Muller*	
1942	R.E. Burnton*	O.L. Papendorf*
	R.C. Espley-Jones*	V.O. Steed
	N.M. Hayne*	J.E. van Leeuwen*
	R.T. Naudé*	W.C. Walmsley*
1943	D.J. Molony*	R.P. Plewman*
	J.D. McMorrان*	
1944	A.F. Dick	V.M. Reinecke*
	R.B. MacGillivray*	A.S. Swartz
	L.J. Prince*	A.H. Taute*
	J.F. Reid*	P.B. Weehuizen*
1945	J.L. Curtis*	K.E. Steele*
	E.T. Pinkney	
1946	W.I. Spence	
1947	G.H. Grange	J.D. Pollard
	W.B. Howe	V.C. Robinson*
	J. Marr-Levin	A.N. Shand*
	C.J. Parr*	G.R. Still
1948	D.F. Foster	J. Pope*
	M.H. Grusd*	N.A. Stacey
	P.A. Laxen*	J.A. Tyser
	G.Y. Nisbet	
1949	G.P. Bennett*	J.P. Hugo
	J.F. Curtis*	D.A. Immelman
	O. Davel	
1950	D.F. Grieve	R.P. Plasket*
	B.E. Hersov	V.C. Ward
	D.G. Maxwell	
1951	D.G. Krige	N.C. Pope
	B.H.L. Leach	W.T. Ruhmer
	M.J. Martinson	T. Zadkin*
	W.D. Ortlepp*	

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1952	A.N. Brown M.J. Deats W. Lurie* N. Martincevic	E.P. Mortimer D.J. Murphy H.J. Stucke* R.G. Williams
1953	B.G. Fordyce G. Langton* A.A. Sealey	G.D. Tainton J. Uys* N. Zolezzi
1954	R.C. Bertram	R.B.W. Wiggill
1955	R.A.O. Chelius* S.P. Ellis C.T. Fenton	G.R. Parker W.B. Parker
1956	G.A. Brown D.R. Chelius M.F. Dawson L.M. Falcon	M.A. Madeyski D. Rankin G.C. Thompson
1957	K. Babich J.J. Blom R. Campbell	A.M. Edwards R.C. More O'Ferrall N.C. Officer
1958	J. Dear R.H. Swan	B.S. Tattersson P.J. van der Walt
1959	H.E.K Allen D.C. Brink G.D. Louw	H.A.G. Slater G.T. Van Rooyen

\* Deceased since becoming members of the club

### Gold and Silver Medals

Papers published in the *Journal* from March 2009 to February 2010 by members of the Institute were considered for medals.

#### Gold Medal

Gold medals are awarded for papers that are of a world-class standard, and judged to be publications that will become key reference in their mining or metallurgy field in the future.

This paper describes the theoretical background of the cooling of titania slag blocks as practised by titanium slag smelters. The problem in practice is that there have been many instances of cooling blocks exploding, posing serious safety risks. The cooling theory was backed up by measurements on small blocks and then on full-size blocks. The data analysis resulted in a modified cooling methodology being developed that eliminates the risk of explosions. This paper will serve as a further contribution to the subject of ilmenite smelting to titania slag and pig iron, which is currently very limited. In addition, this paper is an excellent example of establishing a sound theoretical background, collecting and evaluating data, resulting in the development of a practical methodology, which provides a realistic solution to a distinct technical problem. And most significantly, it provides a means of eliminating a serious safety problem.

A Gold Medal is awarded to:

H. Kotzé and P.C. Pistorius, for their Transaction paper published in the February 2010 issue of the *Journal* entitled 'A heat transfer model for titania slag blocks'.

#### Silver Medals

Silver medals are awarded for papers that make a major contribution to the professions of mining and metallurgy and to the prestige of the Institute.

This is an excellent review of bioleaching. It provides a history, relevant theoretical background, bench-scale and pilot scale development methodologies, practical and full-scale

applications, and future trends. It covers applications across different commodities and describes the development of technology, equipment, and materials of construction as the application of bioleaching became more widespread. This paper will serve as a significant reference for bioleaching.

A Silver Medal is awarded to:

M. Gericke, J.W. Neale, and P.J. van Staden, for their Transaction paper published in the October 2009 issue of the *Journal* entitled 'A Mintek perspective of the past 25 years in minerals bioleaching'. As a non-member M. Gericke and J.W. Neale receives a certificate of merit.

#### Certificate of Merit

This paper is a review that focuses on a key parameter,  $K$ , which expresses metal recovery against Fe recovery in DC alloy smelting furnace applications. This is a very good example of utilizing data obtained from numerous test work campaigns and deriving the recovery relationship. Then the application of the relationship is demonstrated for a number of ferroalloy smelting examples. This paper will serve as a good basis for the further development of this work.

A Certificate is awarded to:

R.T. Jones, I.J. Geldenhuys, and Q.G. Reynolds, for their Transaction paper published in the October 2009 issue of the *Journal* entitled 'Recovery of base metals and PGMs in a DC alloy-smelting furnace'.

#### Certificate of Merit

This paper describes the age hardening of the aluminium alloy EN 4017 and the possible application of the methodology to other aluminium alloys. This is a very good example of a well defined and applied experimental methodology. This paper will serve as a good basis for the characterization and application of aluminium alloys.

A Certificate is awarded to:

D.B. Swanepoel and W.E. Stumpf, for their Transaction paper published in the December 2009 issue of the *Journal* entitled 'Age hardening of the aluminium alloy EN 4017'.

#### Student Prizes

Prizes were awarded to the following students and were presented at faculty prize-giving ceremonies held at the respective universities.

The prize winners were as follows:

#### University of the Witwatersrand

Mining	Ms P. Neingo
Metallurgy	R. Couperthwaite
Prestige Prize	M. Stevenson
	P. Mogodi

#### University of Pretoria

Mining	M. Neale
Metallurgy	G. Mare
Student Dissertation	B. Steyn

#### University of Johannesburg

Mining	V. Eva
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#### University of Cape Town

Chemical Engineering	Ms T. Chimbanga
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### *University of Stellenbosch*

Process Engineering C. Biley

### *Cape Peninsula University of Technology*

Chemical Engineering M.Y. Gani

The prizes for the universities of Cape Town and Stellenbosch, and the Cape Peninsula University of Technology were awarded at the Western Cape Branch Annual General Meeting on 5 August 2010.

### **1.5 SAIMM Scholarship Trust Fund**

M.H. Rogers, Chairman

R.P. Mohring, Vice-Chairman

R.D. Beck

F.M.G. Egerton

J.R. Dixon

Individual and Company members contributed some R76 500 to the Scholarship Trust Fund during the year. A further contribution of R150 000.00 was made from the SAIMM itself in support of this initiative. Awards totalling R258 000 were made to needy students at the Universities supported by the Trust Fund.

In September 2009 TWP Holdings launched a documentary on the discovery of platinum and its development into one of the most precious metals known to man. TWP Holdings donated the proceeds from sales of the DVD documentary to the Trust Fund. Sales of the DVD continue from the Institute's office and at Institute events. The trustees gratefully acknowledge the generous support received from TWP Holdings.

The SAIMM once again continued its most welcome support of the Trust Fund. Members are reminded that contributions to the Trust Fund are tax deductible and that contributions can be made directly to the Trust's bank account. Details are available on the SAIMM website.

Mr Richard Beck retired as trustee during the year and Mr Willem van Niekerk was appointed a trustee in his place. We record our thanks to Mr Beck for his services to the Trust Fund and wish him a long and happy retirement.

### **1.6 SAIMM Gold Medal Awards**

The South African Institute of Mining and Metallurgy was pleased to assume the administration of the Gold Medals and Scholarships in 2001, which had previously been done by the Chamber of Mines. All contributions are held in a separate fund within the SAIMM accounts.

A total of four awards is presented to the universities of Pretoria and the Witwatersrand for the best student in the Faculty of Engineering and the best student in the branches of mining or metallurgy, as determined by the universities. The award comprises a gold medal and a postgraduate scholarship to the value of R25 000.

### **1.7 Banquet Committee**

J.R. Dixon

P.A.P. Fouche

R.P. Mohring

M. Motuku

R.G.B. Pickering

M.H. Rogers

With the excitement growing for the 2010 Soccer World Cup and all the opportunities it would bring, it was decided to host the annual banquet with a soccer theme and an official title of Bouncing Back in 2010. Despite the number of attendees expanding each year, it was decided to host the event at a smaller venue, The Sandton Sun Hotel, to create a more intimate and social environment with only 600 guests being accommodated.

The menu was selected based on the geographical majority of the soccer teams taking part in the World Cup: entrees from Asia, followed by starters from the Americas, mains from Africa, and dessert from Europe.

Our guest speaker was a very eloquent and soccer-knowledgeable Gary Bailey who wowed the audience with fascinating facts, figures, and pictures from past World Cups and what to expect during the 2010 World Cup. Our special guests were the presidents of sister organisations and associations that work closely with the SAIMM and who generally have a representative on Council.

There was no dance floor or band this year, but with soccer balls and vuvuzelas being part of the table decorations, there was no shortage of entertainment among the guests themselves – some playing the vuvuzelas and some just playing the fool.

## **2. Technical Meetings**

**Portfolio Holder: J.N. van der Merwe**

### **2.1 Technical Programme Committee – Mining**

D.D. Munro, Chairman

A.M. Garbers-Craig, Metallurgy Representative

J.A. Cruise

C. Musingwini\*

J. du Plessis\*

J.C. Ngoma

F.M.G. Egerton

R.C.D. Phillis\*

P.H. Ferreira

R.G.B. Pickering

C. Fredricks\*

J.L. Porter

M. Handley

D. Rungan

R. Hull\*

G.L. Smith

G.V.R. Landman

T.R. Stacey

D. Limpitlaw\*

J. Truter

A. McFarlane\*

R.P.H. Willis

W. Morrel\*\*

*\*Co-opted members*

*\*\*Resigned*

With the world still in the economic crisis in the second half of 2009 and only entering a slow recovery early 2010, the focus of the Mining Technical Programme Committee continued to look at more cost-effective, innovative conferencing, which appears to have paid dividends with 15 events being hosted.

The year started with the Shaft Sinking and Mining Contractors 2009 conference on 11 and 12 June 2009, which focused on the shaft sinking designs and processes, costing, latest technologies, supplier value chain management, outsourcing opportunities, and employer and contractor responsibilities in the area of safety, focusing on Section 54 of the MPRDA. The event attracted 135 attendees and raised R80 000 in sponsorship.

This was followed by the joint mining-metallurgy Base Metals 2009 held at Kasane in Botswana. The venue was well



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Schedule of Mining/Metallurgy Technical Conferences, 2009/2010				
Type of Event	Date	Title	Convenor	Attendance
Conference	27–31 July 2009	Base Metals Conference 2009	P.A.P. Fouche	107
Conference	20–23 September 2009	Heavy Minerals 2009	J.H. Selby	113
Conference	28–30 September 2009	1st Hardrock Safe Safety Conference 2009	F. Egerton and T. van den Berg	135
Colloquium	19 October 2009	Student Colloquium	A.M. Garbers-Craig	271
Conference	21–23 October 2009	World Conference on Sampling and Blending	S. Duggan	133
Conference	26–30 October 2009	World Gold Conference 2009	P.J. van der Plas	241
Conference	2 December 2009	The Future of Sinking Vertical Tunnels	J. Porter	135
Conference	8–10 February 2010	Thorium and Rare Earths Conference	W. van der Merwe	65
School	19 February 2010 8 June 2010	First Drilling and Blasting Second Drilling and Blasting	G.V.R. Landman	109
Colloquium	1–3 March 2010	Diamonds—Source to Use 2010	W. Morrell	70
Conference	16–17 March 2010	Refractories 2010 Conference	A.M. Garbers-Craig	45
Indaba	12 April 2010	First Mineral Law and Policy Indaba	S. Rungan	58
Conference	4–6 May 2010	Physical Beneficiation 2010 Conference	M Dworzanowski	122
School	3 June 2010	Rock Engineering of Underground Coal Mining	J.N. van der Merwe	62

appreciated, especially by foreign delegates, with the three-day conference and one-day technical visit to BCL and Tati Nickel attracting 107 delegates and raising R238 000 in sponsorship.

Again metallurgy and mining TPCs joined forces and presented the Heavy Minerals Conference 2009 with its audience of 113 registered delegates and R297 000 sponsorship. This event, with the theme of ‘What next?’ had specific focus on some of the new hurdles for the industry such as energy costs, greenhouse gas emissions, and the recent economic crisis. The Champagne Castle Sports Resort was an ideal venue for this September event.

The annual Hardrock Safe Safety Conference 2009 was organized in conjunction with AMMSA held at Sun City this past year from the 28 to 30 September 2009. The conference assisted in passing on best practice from safe hard rock leaders and best practice operations. They shared how they have managed to change people’s attitudes and behaviour, applied technological improvements and systems, and thus managed to reduce risks and their LTIFR, fatalities, and inherent risks. This was the TPC’s largest event for the year, with 135 delegates attending and R339 000 being sponsored.

The 2009 Student Colloquium was held at the Sanlam Auditorium at the University of Pretoria with presentations by final year students judged to be the best in class from the universities of the Witwatersrand, Pretoria, North-West, Johannesburg, and the Tshwane University of Technology. This event, which aims to introduce talented newcomers to the mining and minerals industry, was well attended with 271 attendees and R50 000 sponsorship secured.

In October 2009, the three-day 4th World Conference on Sampling and Blending 2009 was held and attracted 133 delegates and R410 000 in sponsorship. This was a truly international event and attracted high calibre speakers from across the globe with topics pertinent to current trends in this sphere. Again the Table Bay Hotel proved to be a truly

international venue with good feedback being received on both the conference and the venue.

The Future of Sinking Vertical Tunnels one-day colloquia was held on 2 December 2009 at Misty Hills Conference Centre. The event attracted 135 delegates and raised R15 000 in sponsorship. This was hosted in collaboration with SANCOT as part of their annual programme.

As the first school event of 2010, Drilling and Blasting 2010 exceeded expectations by being oversubscribed (60 delegates) and requiring a rerun in later in the year (49 delegates). This focused on refreshing the manager about trends in both surface and underground drilling and blasting techniques and the more technical aspects of these. Authors were targeted from the major suppliers and a full set of notes produced for use in subsequent schools. It is intended that schools are run on a bi-annual basis and updated accordingly.

Our bi-annual Diamonds: Source to Use 2010 conference was held in in March 2010 and hosted in Gaborone, Botswana, considering the country’s prominence in the world diamond market as of late. Even with the downturn in the diamonds market, 70 delegates registered for the event and R70 000 sponsorship was raised. Technical visits to Jwaneng Diamond Mine, Eurostar Diamonds, and the Diamond Trading Company, Botswana, were offered. The next event in this series is scheduled for two years’ time.

The First Mineral Law and Policy Indaba was proposed as a reaction to the legal developments of late, especially around the ownership of mineral dumps; the declaration of the Mineral and Petroleum Resources Development Act as expropriating mining rights of landowners; the Mining Charter being reviewed; and the new Mineral and Petroleum Resource Royalty Act. A breakfast session, addressed by the Honorable Minister Susan Shabangu, Minister: Mineral Resources, set the tone for the rest of the day’s proceedings and ensured that the 58 delegates in attendance had better insight into current policy.

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Nielen van der Merwe and Bernard Madden have spent considerable time updating the book *Rock Engineering for Underground Coal Mining* following the release of the first edition, which was sold out in a matter of weeks in 2002. The Rock Engineering for Coal Mines 2010 school event was therefore an ideal event to release the second edition, which was also used as the course material. This was held on 3 June 2010 at the SA Coal Estates Club, Witbank with 62 delegates and R8 000 raised in sponsorship. Following on this theme, a hard rock school is planned for 2010.

The 2011 year promises to build on the successes of the previous year with a full programme of events, including the popular Platinum Conference 2010, Hard Rock Safe 2010 and a variety of other colloquia and schools. None of these would have been possible without the dedication and professionalism of the conference organizers and secretariat.

I would therefore like to express, on behalf of the Mining TPC, a special vote of thanks to Jacob Mothomogolo, outgoing chairman of the TPC, and all the people involved in the preparation of these events.

I look forward to another successful, educational year, in 2011.

### 2.2 Technical Programme Committee—Metallurgy

R.T. Jones, Chairman

M. Dworzanowski, Vice-Chairman

Z. Botha

A.M. Garbers-Craig

T. Claassens

A.F. Mulaba-Bafubiandi

P. den Hoed

W. van der Merwe

G.C.P. Donoghue

P.J. van der Plas

P.A.P. Fouché

The Metallurgy Technical Programme Committee has supported a good selection of topical technical conferences throughout the year for the continuing education of metallurgical professionals. These events provide an important forum for the efficient dissemination of information about new processes and techniques for improvements in the industry, as well as promoting networking among industry professionals working in the metallurgical field. SAIMM conferences generally receive accreditation from the Engineering Council of South Africa (ECSA) for the requirements of continuing professional development (CPD).

Attendance figures this year varied from about 40 (for a highly specialized topic) to 240 (for a well-established multi-day international conference). Sponsorship from industry has continued at a very significant level. The support of sponsors is highly appreciated, especially in light of the somewhat depressed economy.

Formal proceedings of high-quality peer-reviewed papers were published for the larger conferences (usually in book form with an accompanying CD). Conference proceedings are also fully published on the SAIMM website, in order to make the information searchable and available to as wide an audience as possible. SAIMM continues to make their website publications available free of charge to the general public, in recognition of the time and effort freely contributed by authors.

The 2009/2010 year has included a variety of events, and some highlights are mentioned below.

The Fifth Southern African Base Metals Conference was held in Kasane, Botswana, during July 2009, and was attended by 107 people. The attractive venue was also in close proximity

to Zambia and Zimbabwe. The conference was well attended, but the proposed technical visits were cancelled due to a poor response. The Minister of Mines of Botswana addressed the conference, and his positive approach made a very good impression on delegates. The valuable networking that took place at the conference resulted in renewed enthusiasm for the Zambian Copperbelt branch of the SAIMM.

The Western Cape Branch of the SAIMM held their 27th annual Mineral Processing Conference and Workshop in Cape Town in August 2009. This well-established event features close interaction between the local universities and industry.

Although not strictly a SAIMM event, there was good South African participation in the Canadian Conference of Metallurgists during August 2009. This event highlighted nickel and cobalt, and was held in Sudbury, Ontario. More than 550 delegates attended from 26 countries. Discussions about cooperation between Canadian and Southern African metallurgical societies were held with the presidents of CIM and MetSoc.

The Seventh International Heavy Minerals Conference was held in the Drakensberg during September 2009 and was attended by 113 delegates. This regular event is organized by the KwaZulu-Natal branch of the SAIMM.

The annual Student Colloquium was held during October 2009 at the University of Pretoria. This event is subsidized by SAIMM from the surplus funds from other events, in support of the various tertiary educational institutions in Johannesburg and Pretoria and surrounding areas. This event continued to provide a showcase for students to present their final-year projects. SAIMM provided adjudicators to select the prize-winners, based on the criteria of importance, usefulness, innovation, quality, and communication. The student presentations were generally of high quality.

The Fourth World Conference on Sampling and Blending was held in Cape Town during October 2009. This international event follows previous events held two years apart in Esbjerg, Brisbane, and Porto Alegre, and is intended to stimulate interaction between sampling practitioners from a variety of disciplines. The conference was attended by 133 delegates.

The World Gold 2009 international conference was held in Muldersdrift in October 2009, and was attended by 241 delegates. Although primarily a metallurgical event, the conference also included a significant mining component, and visits to gold mines were also included.

A new topic, not previously covered by SAIMM conferences, namely 'Thorium and Rare Earths' was presented at a two-day conference in Cape Town in February 2010, and was attended by 65 people. A site visit to the Koeberg power station was also included.

A Refractory Materials conference was held in Muldersdrift during March 2010. A small but enthusiastic group of 45 delegates attended the conference. There was participation by people from industry, universities, and research organizations. Presentations were good and generated much technical discussion.

The Physical Beneficiation 2010 conference was held in Pretoria during May 2010, and was attended by 122 delegates. This conference focused on the operation of DMS, gravity concentration, magnetic separation, and electrostatic separation circuits in the Southern African mining industry. Technical visits to Multotec and Mafube Colliery were arranged for delegates.

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The SAIMM conference secretariat assisted with the arrangements for an event in Zimbabwe during May 2010 that served as the launch event for the new Zimbabwe branch of the SAIMM.

The Twelfth International Ferro Alloys Congress (Infacon XII) was held in Helsinki, Finland during June 2010, and dealt with the theme of a 'Sustainable Future'. SAIMM was one of the co-founders of Infacon in 1974, and continues to be strongly involved with this series of conferences. This conference is reported on elsewhere in the SAIMM Annual Report in greater detail.

In addition to the events actually organized by the SAIMM, there was also SAIMM participation in the organizing committees of a number of overseas international events, as well as co-sponsorship of events (which also entails publicizing the events to SAIMM members).

The Metallurgy Technical Programme Committee would like to pay tribute to one of its members, Greg Donoghue of AngloGold Ashanti, who passed away in April 2010. He will be warmly remembered for his kind enthusiasm, and his support for many technical events, including a number of short metallurgical events that were held in conjunction with the Electra Mining exhibition. Greg was always willing to share the benefits of his many years of experience, and his colleagues regarded him as a real gentleman. He will be greatly missed.

The TPC-Metallurgy committee continued to be supported by a group of highly capable members, and many enjoyable meetings were held during the year. The people of the conference section within the SAIMM secretariat are to be commended for their highly professional approach in handling conference arrangements, resulting in many favourable comments from attendees. The combined effort of all these people has resulted in a number of worthwhile technical events being provided for the benefit of the metallurgical community of Southern Africa.

### 2.3 South African National Committee on Tunnelling (SANCOT)

J.A. Cruise, Chairman

A. Boniface	R.G.B. Pickering
G.N. Davis	J.L. Porter
P.H. Ferreira	E.J. Sellers
A.L. Griffiths	T.R. Stacey
M.E. Lebitsa	F.B. Stevens
E.A. McCarter	H.J. Tluczek
M. Mohlabane	A. Wilson

SANCOT continued with its practice of having at least one full-day event in the course of the year. This year a seminar entitled 'The Future of Vertical Tunnelling' was held in December 2009, at Misty Hills. The eye-catching title was of course a reference to shaft sinking. South Africa used to be the world leader in shaft sinking achievements and construction practice but in recent years others have taken the lead. Meeting the challenge of returning to historical shaft sinking advance rates while progressing in the quest for zero harm, is today's challenge. This is being met with the use of better planning tools, communication methods, and improved construction techniques. But before the benefits of these can be fully realized, much of the construction workforce still needs to gain a better understanding of the basic principles of safety practice

—starting with everyday day life situations. The seminar began by exploring the consequences of this and then moved on to looking at the latest developments in the planning of shaft sinking projects and their construction. The seminar was a great success and SANCOT is now contemplating the formation of a SANCOT working group to deal with these topics. Such a group could provide an independent forum in which the latest ideas on improving shaft sinking safety practice and construction methods can be aired and disseminated to the mining and construction industries as a whole.

On the international scene, SANCOT's interaction with the International Tunnelling Association continues. Ron Tluczek and Tony Boniface serve respectively on the ITA Shotcrete and R&D Working Groups (WGs 5 and 12). These WGs met during the annual World Tunnel Congress, which was held in Vancouver (May 2010). In the course of the General Assembly the Animateur of WG5 (Health & Safety), expressed great interest in SANCOT reporting that they are considering the formation of a SANCOT Shaft Sinking WG. The ITA WG5 is well aware that they have not given much attention to safety issues associated with shaft sinking and is hoping that SANCOT will provide a lead in this area.

This year saw the end of the three-year term for both the President and Executive Committee of the ITA. This resulted in the outgoing President, Martin Knights of the UK, handing over the reigns to In-Mo Lee, Korea. SANCOT had hoped to gain a seat on the Exco but were unsuccessful on this occasion.

Looking forward to the next few months, SANCOT is well advanced with the planning of a second visit to the Ingula Pumped Storage Scheme in early December.

### 3. Publications

Portfolio Holder: G.L. Smith

D. Tudor, Chairman

R.D. Beck	R.T. Jones
P. den Hoed	C. Musingwini
M. Dworzanowski	R.E. Robinson
F.M.G. Egerton	G.L. Smith
A.M. Garbers-Craig	T.R. Stacey
M.F. Handley	J.N. van der Merwe
W.C. Joughin	R.P.H. Willis

#### 3.1 Journal

Monthly issues were published during the year with the October 2009 issue celebrating Mintek's 75th Anniversary. A student issue was published in April 2010, which contained papers on project work carried out during 2009 in partial fulfilment of the students degrees.

Special Issues with papers from SAIMM conferences were published in August '09 (Sulphuric Acid), November '09 (Base Metals), January 2010 (Hard Rock Safe), February '10 (Heavy Minerals), March '10 (Comminution), and June '10 (Sampling and Blending).

46 Transactions, 24 Journal, 7 student papers and 3 Technical Notes were published during the year. The numbers of Transactions, which are peer reviewed and represent the peak of publishing technical quality, were a little down on last year (55). There was again an increase in papers submitted to the

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*Journal*, with 50 papers rejected of which 5 were from Southern Africa. 41 papers published covered mining and 31 metallurgical subjects.

It is of interest to note that the split between mining and metallurgy papers that were published during the calendar years 2008 and 2009 is:

Year	2008	2009
Mining	45	25
Metallurgy	30	50

A membership survey was conducted during the year to add to the database of members who were willing to referee submissions for publication. Approximately 100 members responded, which was disappointing, but it has increased our pool of referees. My thanks go to all those who have given of their time as referees, without whom the standard of the *Journal* could not be maintained.

Advertising revenue increased by 16% year on year. Barbara Spence of the Avenue Company and her team are to be congratulated on their good performance. Other publication costs were much in line with budget.

Professor Robbie Robinson continued to produce his thought provoking *Journal* Comment each month.

The DTP department has maintained the expected high standard of the *Journal* layout and my thanks go to Dawn van der Walt and Zuliakha Malgas.

Regrettably we lost the services of the Publications Co-ordinator, Abigail Lawrence, and her subsequent replacement, Yolanda Goliath. We welcome Caron Lance to the position and wish her every success.

### 4. Regional Development

#### Portfolio Holders: G.V.R. Landman

A. du Plessis	J.N. van der Merwe
P.A.P. Fouche	M. Dworzanowski
J. Porter	M.J. Mothomogolo

### Key Performance Areas

To promote the interests of members based in different regions, the SAIMM:

- Supports the establishment and maintenance of branches to satisfy the local needs of its members for professional association and the exchange of technical information
- Co-operates with other member societies of AS&TS and with associations and interest groups that have close ties with operating mines and metallurgical plants by holding joint technical meetings and collaborating in the field of publication.

#### 4.1 SAIMM Branches

##### 4.1.1 Botswana Branch

H. Marsden, (incoming branch chairman)

No report was submitted.

##### 4.1.2 Bushveld Branch

C.A.F. Sweet, Chairman

No report was submitted.

##### 4.1.3 Johannesburg Branch

M. Woodhall, Chairman

I. Ashmole	G. Oliver
G.C.P. Donoghue	X. Pan
V.G. Duke	J. Porter
C. Heili	G. Ralph
M. Lekota	K. Richardson
M. Mabaso	U. Sachse
M. Mokgojwa	W. Taylor
M. Mthenjane	
J. Ngoma	

#### Introduction

As chairman, I am pleased to report on the activities of the

Past year technical presentations: Johannesburg Branch of the SAIMM: 2009/2010					
Date	Title	Presenter	Sponsor	Responsibility	Venue
2009-07-16	Caterpillar driveless vehicles	G. Menzies	Barloworld	G. Ralph	Military Museum
2009-08-09	Carbon credits	T. Carter	SMS and Blue Horizon	V. Duke	Military Museum
2009-08-09	Committee Outing—Tuscan barbecue		SAIMM	M. Woodhall	Montecasino
2009-09-09	Mineral Investment Codes	R. Dixon	SRK	M. Mabaso	Military Museum
2009-10-15	RockWatch Technology	F. Malan	Bedrock MS	M. Woodhall	Military Museum
2009-11-19	Gekko Technologies	V. Korzynski	Gekko	G. Donoghue	Military Museum
2009-11-28	Family day	J. Porter	TWP	G. Donoghue	Thaba Romana Granite Quarry
2010-02-18	NW Tripartite Forum	T. van den Berg	GMSI	M. Woodhall	Military Museum
2010-03-18	Tenke Fungurume Project—Process Design	S. Amos	Amec-Minproc	G. Donoghue	Military Museum
2010-04-15	Career perspectives and insights	O. Steffen	SRK	M. Mabaso	Military Museum
2010-05-20	Tranter Holdings: catalyst of economic development in the SADC Region	J. Ngoma	Tranter	M. Woodhall	Military Museum
2010-06-10	AGM			M. Woodhall	Military Museum

## Annual report

Johannesburg Branch of the SAIMM for the period July 2009 to June 2010. The year has been, from the committee's perspective, a successful one. The variety and scope of the mining industry was well reflected in the events.

For the second year in a row I am happy to report a record attendance in April 2010 at Oskar Steffen's review of an illustrious mining career.

### Committee

Membership of the committee has been relatively stable with representation across various mining companies and consulting professionals. It is with deep regret, however, we report the loss of our Vice-Chairman, Greg Donoghue, who passed away suddenly at the end of April 2010. His input and enthusiasm for the objectives of the Institute and Branch in particular, will be sorely missed.

### Events

The table on the previous page indicates the extent and variety of technical topics we had pleasure in bringing to public view. The application of diverse technologies featured strongly this past year, along with investment environments and some good quality, people-focused perspectives. The technical event for June was cancelled due to the World Cup. Other than that, we have had a full calendar.

### Finances

Thanks to the SAIMM, the attendance of student contingents from both the University of Johannesburg and University of the Witwatersrand continues to be supported. This allows the Branch to currently limit sponsorship costs for venue and networking facilities to R9 500. Taking into account some profitable events, the SAIMM effectively funded sponsorship overruns of R5 136.31.

For the coming year we have two potential events for July, have already confirmed the August event, and a pipeline of events is under constant review.

### AGM

The Branch AGM was held on Thursday 3 June to avoid any clash with World Cup timetables. I am pleased to report Vaughn Duke was elected Chairman and Ian Ashmole accepted the Vice-Chairman role.

This ends my two year tenure as Chairman and I would like to register, personally and on behalf of the committee, our thanks to the SAIMM Secretariat for their dedicated support of Branch activities.

### 4.1.4 Namibian Branch

B.M. Litana, (incoming branch chairman)

### 4.1.5 Pretoria Branch

Chairmen

O.T. Mothibi

T. Mahlangu

J. Steenkamp

D. Groot

Secretaries

S. Havenga

D. Gudmanz

O. Letlape

B. Ndlovu

J. Peterson

J. Sihlangu

The SAIMM Pretoria Branch in the period July 2009 to date organized monthly seminars in conjunction with the departments of Materials Science and Metallurgical Engineering and Mining Engineering. These seminars were given by presenters from outside the University of Pretoria, with the audience being principally students and lecturers of the two departments and occasionally professionals.

There are two main highlights of the year, these being the

- ▶ Presentation by the incoming President of the Southern Africa Institute of Mining and Metallurgy, Mr J.C. Ngoma
- ▶ Annual student colloquium held on campus on 19 October 2009.

The annual student colloquium is an event which showcases the research activities and outputs of students from various universities to the external stakeholders. These two events are very important to the branch as they also enable the student 'would be members' and members to appreciate the value of SAIMM in their professions. Key to this is to increase not only the membership numbers of students but also participation in the organization at an early stage of their careers. To foster this, cocktail parties are part of the seminar presentations to encourage networking and informal discussions among members and our presenters. The branch would like to express its sincere gratitude to all the speakers for the year.

Dr Tham Mahlangu, who was the Branch Chairman until June 2009, is acknowledged for laying the foundation for the programme. Special thanks also go to the committee members, the heads of departments for both Mining (Dr Ronny Webber-Youngman) and Materials Science and Metallurgical Engineering (Professor M. du Toit) for being excellent hosts for the branch. Last, but not least, I would specially like to thank

### Mini colloquia, past year events, and future planning: Pretoria Branch of the SAIMM: 2008/2009

Date	Title	Presenter
	Swimming with the black swan	J.C. Ngoma, <i>President Elect, SAIMM</i>
	The chrome question in the platinum industry	C. Roode, <i>Metenco</i>
2010-05-05	Production of manganese ferroalloys	M. Tangstad, <i>NTNU in Norway</i>
	The mineralogy of pyrrhotite from selected nickel and PGE ore deposits and its effects on flotation performance	M. Bekker, <i>UCT PhD candidate</i>
	Magnetite oxidation in North American iron ore pellet production	C. Pistorius, <i>Carnegie Mellon University</i>

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the people that worked behind the scenes and really put in a special effort to keep the SAIMM Pretoria Branch alive, namely Sarah Havenga and Daleen Gudmanz.

### 4.1.6 Western Cape Branch

J.A. Sweet, Chairman  
G. Akdogan, Secretary

M. Aziz	V. Fester
S. Bradshaw	J.-P. Franzidis
A. Burger	A.N. Mainza
C. Cutler	J. Petersen
D.A. Deglon	E. Thyse

The Western Cape Branch is primarily comprised of academics and students from the three main tertiary institutions—Cape Peninsula University of Technology, Stellenbosch University and the University of Cape Town. As such, the branch activities are focused on promoting mineral processing as a career path for students and providing a forum for both students and academics to discuss their research with the broader mineral processing community.

The first objective is addressed by hosting an annual student evening for final year students from all three institutions. An annual conference held in August and attended by between 150 and 200 delegates from across the country provides support for the mineral processing research being undertaken in the region.

### Mineral Processing Conference

As is usually the case, the two-day conference was preceded by a one-day workshop. In recognition of the turmoil that the industry had been facing, the workshop focused on 'Opportunities for improving metallurgical plant performance in the current economic climate'. Presenters from industry shared case studies related to the application of technologies and methodologies to improve their operations. In addition, researchers presented their thoughts on the role of education and training to ensure proper uptake of the new technologies. Everyone agreed that unless you could measure the performance of the process, it would not be possible to optimize it.

The conference was opened by Ian Smit of Anglo Base Metals with a plenary presentation titled, 'When the going gets tough—a metallurgical strategy for the bottom line'. He outlined how Anglo American approached plant optimization using the outcomes generated by research. The conference sessions covered themes such as physical processes, bio-, hydro- and pyrometallurgy as well as comminution and flotation. Several sessions of general interest also provided insights into, for example, a SWOT analysis of the South African mining and mineral processing industry, presented by Prof. Peter Gaylard based on a survey of the industry. Neville Plint from Anglo Platinum presented the second plenary titled: 'The future isn't what it used to be—managing research in a financially constrained environment'. This tied in with the workshop theme, and generated much discussion among the attendees.

A total of 155 people attended the conference, and once again it proved an ideal forum for interaction between industry and academia. The students presenting their research work at the conference were also afforded an opportunity to get

valuable feedback from experienced researchers and practitioners. It is clear by the support for the conference in a challenging financial environment that it is viewed by many as an essential part of the annual mineral processing calendar.

### Student evening 2010

This year the student evening was hosted by the Cape Peninsula University of Technology. Mujahid Aziz from CPUT arranged the evening, and it was attended by nearly 80 final year students. The evening is traditionally a joint venture between the SAIMM and SAIChE and presentations were made by both institutions. Jenni Sweet from UCT spoke to the students about peer networking and how a society such as the SAIMM promoted this. The SAIChE was represented by Dr Linda Callanan from Stellenbosch University, who gave an informative presentation on the short- and long-term benefits of being a member.

Dr Ray Shaw, who was visiting UCT at the time, spoke to the students about 'The Minerals Industry in 2020'. Dr Shaw spent the last 30 years at Rio Tinto focused mainly on technologies for improved processing of minerals and metals, and his insights into the lessons from the past and their applicability for the future were very well received. The evening was concluded with an informal session over drinks and snacks, and the students took the opportunity to get advice about their expectations when entering the workplace. Twenty five students signed up for SAIMM student membership as a result of the evening.

### Other activities

The Post Graduate Fund, launched in 2007 to assist postgraduate students to attend national or international conferences, awarded R60 000 in prize money in 2009/2010. It was decided by the trustees of the Fund to amalgamate the two annual R15 000 prizes for 2009 and 2010 into one R30 000 prize for 2009 and one for 2010 to allow two deserving students to attend the IMPC in Brisbane in September 2010. The 2009 award was made to Mr Angus Morrison from UCT. Based on the excellent quality of the submissions for the 2010 award, it was decided to grant R20 000 to Bulelwa Ndlovu of UCT and R10 000 to Christie Dorfling of Stellenbosch University. Both have papers accepted for oral presentation at the Congress.

Finally, the Prestige Prize for best student in Mining and Metallurgy at each of the three tertiary institutions was presented at the 2009 conference dinner by Joshua Ngoma, the president elect of the SAIMM. The recipients were Mahabubur Chowdhury (CPUT), Mahish Rama (Stellenbosch), and Tracey Richards (UCT).

### 4.1.7 Zambian Branch

S.C. Mulenga, Chairman  
E. Theron, Vice-Chairman  
H.L. Zimba, Secretary  
W. Banda, Treasurer

P. Haken                      F. Simwanza  
S. Simukanga

The Zambian branch of SAIMM saw the departure of two committee members, the Vice-Chairman, Mr Julian Tayler and a

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committee member, Mr John Mutambo, both of whom left the country to work elsewhere. The committee therefore co-opted Mr Eric Theron of Senmin as the Vice-Chairman and Mr Peter Haken of TWP as a committee member. Apart from these changes, the composition of the committee remains the same.

### *Zimbabwe visit*

The chairman of the Zambian branch, Dr. Sixtus Mulenga travelled to Zimbabwe to give support to the launch of the SAIMM branch and presented a technical paper.

### *Zambian event*

Plans are underway to hold a second Zambian event in the second week of September 2010. Ms Jacqui van der Westhuizen and Mr. Raymond van der Berg of the SAIMM have inspected a number of possible venues for this event. Senmin have been the first to promise a R30 000 sponsorship for this event.

### *SAIMM Journal paper*

A technical paper on flotation kinetics of Konkola ore in Zambia, written by the Secretary of the Zambian branch, Mr Henryimba, was accepted and published in the SAIMM *Journal* early this year.

#### *4.1.8 Zimbabwean Branch*

W. Kutekwatekwa, Chairman

E. Gwaze	I. Nyamukondiwa
S. Mandoza	M. Sowa
S. Ndiyamba	

2009/2010 has been significant for the Institute in Zimbabwe as it saw the launch of a branch in the country on 7 May 2010 in Harare. This inaugural event was attended by 127 people, and four technical papers were presented by Paul Markham of Riozim, Sixtus Mulenga of Tranter Holdings Zambia, Pierre de Hill of Lynx Geostems, and Mike Roberts of TWP Projects.

The branch has now lined up branch events, sometimes together with other mining associations. A full conference will be held in early 2011.

#### *4.1.9 Zululand Branch*

W.R.J. Erasmus, Chairman

P. Donlon	C. Mienie
S. Gracie	N. Naidu
B. Maramba	C. van Niekerk

The Zululand Branch of the SAIMM had a very exiting year in 2009. The main focus of the latter part of 2009 was the Heavy Minerals Conference. This conference is the seventh in a series of conferences that focus on the heavy minerals industry.

This year's conference venue was in the majestic Drakensburg mountains. This conference theme was 'What next? There were 4 keynote addresses and 26 presentations done over the 3 days. The social functions at the conference consisted of: cocktail party, wine and whisky tasting followed by a braai (barbecue) and a formal dinner with comedian, John Vlismas. In total 170 delegates attended this conference. The Branch would like to thank Julie Dixon, Raymond van der Berg, Jackie van der Westhuizen, and the organizing committee: J.H.

Selby (Chairman), N.J. Barkhuysen, J. Swithenbank, H. Burger, W. van Niekerk, and W. Erasmus for all the work that they did to ensure that the conference was a resounding success. A conference of this nature would not be possible without the dedication and professionalism of the SAIMM Secretariat and the organizing committee.

The Branch once again maintained its association with the other professional institutes in the KZN area. Branch activities have been supported by members from Richards Bay Minerals, Exxaro Sands KZN, Bayside and Hillside Smelters. Suppliers to these industries such as Mineral Technologies, Spectrum Technical, Multotec KZN and Outotec have also given us great support during the year.

### *Branch technical activities*

Technical meeting—John Selby (RBM) presented his paper on Monazite production from HM deposits and a committee has been selected. After this SAIMM HQ sponsored some drinks. We had approximately 45 attendees.

Branch meeting—The meeting was attended by: Christiaan Van Niekerk, Steve Gracie, Patrick Donlon, Christo Mienie, Blessing Maramba, and Nesan Naidu

Branch issues were discussed and the year planning was done.

Planned technical meeting/site visits until the end of 2010:

- BHP Biliton
- Hatch
- RBCT.

### *Branch social activities*

In November/early December we will host a sponsored evening but, the committee will do more planning later in the year.

## 5 Engineering Council of South Africa (ECSA)

### *Professional Advisory Committees*

#### *PAC Mining*

M.H. Rogers, Chairman

J.A. Cruise	V. Seboni
J. du Plessis	G.L. Smith
F.M.G. Egerton	T.R. Stacey
R.P. Mohring	P. Tobias
M.J. Mothomogolo	J.N. van der Merwe
C. Musingwini	D.J. van Niekerk
J.C. Ngoma	R. Webber-Youngman
R.C.D. Phillis	L. Zindi

#### *PAC Metallurgy*

R.F. Sandenbergh, Chairman

N.A. Barcza	G. Jonck
R.D. Beck	R.T. Jones
L.A. Cramer	K.C. Mistry
M. Dworzanowski	J. Phiri
M. du Toit	W.H. van Niekerk
R.H. Eric	M. Vermaak
I.J. Geldenhuys	

### *Professional Advisory Committee (PAC)*

One of the critical functions of ECSA is to ensure that, through a peer evaluated system of quality assurance, persons working within the profession are educated and trained according to

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widely accepted standards, so as to render a professional service for the benefit of the public and the country as a whole.

The Professional Advisory Committees of ECSA are responsible for evaluating applications for registration as professional engineers within their disciplines and also contributing to wider policy matters as required.

The Institute nominates members to the PAC's for Mining and Metallurgy.

During the past year the Pac's for mining and metallurgy continued their important work of evaluating the qualifications and experience of applicants for registration as Professional Engineers. The institute also provides the administration and assessors for the Professional Reviews, a prerequisite for registration.

### *The Identification of Engineering Work: compulsory registration*

The Identification of Engineering Work steering committee drafted proposed regulations for compulsory registration of persons conducting 'identified engineering work'

These draft regulations were submitted to the Council for the Built Environment (CBE) and other interested and affected parties for their comment. The CBE have rejected these draft regulations as they contend that the ECSA submission does not conform to their requirements that a common template be used for all the Built Environment professions. ECSA disagrees with this contention. ECSA and the CBE are currently attempting to resolve the impasse.

### *Recognition of voluntary associations*

The SAIMM is a recognized Voluntary Association in terms of ECSA's policy. An important benefit to members of the SAIMM is that registered persons are entitled to a significant reduction in their ECSA annual fees.

### *Continuing professional development (CPD)*

Renewal of registration (on a five-year cycle) through undertaking acceptable CPD became mandatory on 1 January 2006. Registered persons were required to start undertaking and recording CPD activities as from 1 January 2006.

The implication of the introduction of CPD is that Registered Persons are required to present evidence of continuing professional development at predetermined intervals in order to maintain their registration.

The SAIMM is an approved provider of CPD activities and are tasked with vetting all outside courses for CPD purposes in mining and metallurgy.

Details can be obtained on ECSA's website ([www.ecsa.co.za](http://www.ecsa.co.za)).

### *PAC Mining*

The term of office of the previous Council expired in September 2009. R.P. Mohring, who had been a member of Council for a few terms was required to stand down according to the Constitution. SAIMM proposed two candidates for the new Council and J.A. Cruise was appointed for a four year term.

The National Society for Black Engineers challenged the legitimacy of the appointments to Council and took the Minister of Public Works, the Council for the Built Environment, the

Engineering Council and all fifty appointees of ECSA to court. The case is on-going.

Measures have been taken by ECSA to accelerate the registration process for professional engineers, and these are now showing results.

### *PAC Metallurgy*

The mission of ECSA is to ensure, through a co-operative process of quality assurance, that persons entering the profession are educated and trained according to widely accepted standards, so as to be able to render a professional service for the benefit of the public and the country as a whole. The Professional Advisory Committees of ECSA contributes to this mission by considering matters specific to the discipline and also contributes to wider policy matters as required.

During 2009/2010 the PAC Metallurgical Engineering again considered applications for registration as Professional Engineers by means of paper evaluations and interviews, in which volunteers from the SAIMM participated. The requirement for Continuing Professional Development of Professional Engineers is now a requirement for all registered persons and the PAC supports the strong involvement of the SAIMM in such a process for Metallurgical Engineers.

### **5.1 South African Academy of Engineering**

R.F. Sandenbergh, Chairman

The objectives of the Academy of Engineering are to promote excellence in the science and application of engineering for the benefit of all members of the public in South Africa. The Academy comprises South Africa's most eminent engineers of all disciplines and related professionals with proven ability and achievement. During the year the representation of Mining and Metallurgical Engineers in the SAAE was increased to recognize their achievements and to facilitate interaction and contributions over a broader front of engineering. The Academy was accepted as a Member of the International Council of Academies of Engineering and Technological Sciences (CAETS) at its Convocation in Calgary, Canada in July 2009. The theme of the Convocation was: Our heritage of natural resources—management and sustainability. The SAAE papers on mining as a catalyst for development in under-developed regions: an African perspective by Roelf Sandenbergh, Con Fauconnier, and Roger Baxter, and Planning and management of South Africa's limited water resources for sustainability by Michael Shand and Robert Pullen, were well received.

The South African Academy of Engineering and the University of Pretoria took over the responsibility for coordinating the annual Hendrik van der Bijl Lecture, at the University of Pretoria. This year's Hendrik van der Bijl Lecture Telecommunications in Africa over the past 20 years, was delivered on 27 May 2009 at the University of Pretoria by Dr Alan Knott-Craig, Former CEO, Vodacom.

## **6. State Liaison**

**Portfolio Holder: D.J. van Niekerk**

### **6.1 Outcomes-based Education and Training (OBET)**



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### *Mining Qualifications Authority*

The main achievements for the Mining Qualifications Authority (MQA) as Sector Education and Training Authority (SETA) for the SA Mining and Minerals Sector (SAM&MS) for the year under consideration, include the following:

- A Rock Engineering Steercom was established in November 2008 to expedite the development of an appropriate implementation plan for the effective implementation of outcomes-based educational and training (OBET) OBET-compliant competency standards for the RE Practice Area in the SA Mining and Minerals Sector. This will include the replacement of the current Chamber-of-Mines-of SA's certificate of competency. The Steercom has to date produced the Charter and concomitant project plan, informatory circular and a list of questions and answers
- The MQA Office undertook an Equivalency Analysis for the Mine Environment Control certificate-of-competency of the Chamber of Mines of SA. As a result of a poor/deficient Terms-of-Reference, the SGB for Mining and Minerals has taken note of the said EA-report but has unanimously resolved to put the said report aside
- The establishment of an Occupational Environment Engineering and Hygiene Steercom to coordinate and expedite the implementation of OBET-compliant of competency standards for the OEE&H-practice area is now already 24 months outstanding since the OEE&H Workshop in July 2007
- With the imminent advent of the new Quality Council for Trades and Occupations (QCTO), the SGB Office has embarked on a pilot qualification design for the occupation of Mine Overseer [Unit Manager (Mining)] which is expected to be QCTO-compliant. One of the important paradigm shifts in the generation of a competency standard for the Mine Overseer/Head (Mining) is that candidates/learners will be declared competent and certificated based on an independent external assessment (examination?).
- The work of the Certificated Engineer/Manager Steercom is interrupted or delayed by the MQA Boards' insistence on being provided with an appropriate rationale for approving the equivalency analyses of the following Government's Certificates of Competency (GCCs):
  - GCC for Mine Managers: U/G Hard Rock
  - GCC for Mine Managers: Fiery (U&G Coal) Mines
  - GCC for Mechanical Engineers (Mines and Works) and
  - GCC for Electrical Engineers (Mines and Works).

The said CE/CM Steercom will develop an appropriate implementation plan for the future replacement of the current GCCs issued by the DME with OBET-complaint generic engineering competency standards registered on the 10-level National Qualifications Framework.

- The work of the management of Mines' Task Team has been interrupted and delayed. The primary outcome of this critical initiative is to develop a risk-based classification of mines
- The M&MSG established a Certificated Engineer Steering Committee which will develop programmes for the Stage 2 work-integrated-learning component for certificated engineers and managers.

### *The Engineering SGB/ECSA*

The main achievements of the Engineering SGB for the year under consideration include the following:

- The Engineering Standards General body (ESGB) has re-established the dormant Standards Generation Group (SGG) for CEs and CMs to reconsider the appropriate Higher Education Qualifications Framework (HEQF)-complaint minimum educational standards for CEs and CMs as well as to review the current registration criteria for CEs and CMs.
- The ESGB has established an SGG for the development of the following qualifications to complete the Framework of Engineering Qualification i.e. Level 7, Advanced Diploma in Engineering and a Level 8, B. Eng. Tech. (Honours).
- The ESGB has obtained agreement from relevant stakeholders for the qualification for Certificated Mechanical and Electrical Engineers and Certificated Managers (Mining) captured by the proposed draft Stage 2 Qualification at level 7 ('broadly defined practice') on the NQF. The participating Mines Professional Associations, which include the SAIMM, have played a significant role in achieving this critical milestone. This generic qualification also provides the competency profile for practitioners in the Factories, Transport and Marine Sectors.

### *Outstanding/unresolved issues*

The following outstanding/issues still require resolution:

- The issue relating to the implementation of the newly designed Stage 2 engineering qualifications—with specific reference to its integration/harmonization with current registration practice and qualify assurance in ECSA
- Legislative interventions and compulsory licensing in the SAM&MS
- Compulsory currency-of-competence in the SAM&MS
- Further consideration by the Mine Health and Safety Council and the Board of the Mining Qualifications Authority (MQA) the DME's 'Discussion Paper: Training, Competency Certificates and Licensing in the SA Mining and Minerals Sector' which, amongst others proposes registration to be the appropriate mechanism to replace the Mine Managers' and Engineering Competency Certificates currently issued by the Government
- Implementation of OBET-compliant competency standards for the Rock Engineering practice area
- Implementation of OBET-compliant competency standards for the Occupational Hygiene practice area
- Implementation of OBET-complaint competency standards for CEs and CMs in the SAM&MS
- Finalization of an risk-based Classification of Mines.

### *Identification/reservation of engineering work*

- The ECSA Council, at its meeting held on 24 November 2006, approved the 'Proposed Identified Engineering Work (IEW) Regulations'.
- In terms of section 20.(1)(b) of the Built Environment Act, 2000 (Act No 43 of 2000) 'the Council must consult with any person, body or industry that may be affected by the IEW'.
- In terms of section 20.(2) of the Built Environment Act,

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'the Council must after consultation with the Competition Commission and in consultation with the Councils for the professions, identify the scope of work for every category of registered person'.

- ▶ The registration of the said 'Proposed IDoEW Regulations' have to date been delayed by the Council for the Built Environment (CBE) now for a period of nearly 24 months. A Joint ECSA and CBE Task Team has been established to resolve the current impasse in regard to the said IDoEW.
- ▶ Phase II of ECSA's IDoEW Project is focused on the marketing and promotion of the 'Proposed IDoEW Regulations' and to consult persons, bodies or industries that may be effected by the proposed IDoEW Regulations. Numerous institutions, voluntary associations as well as other interested and affected parties have been visited during 2008/9 to familiarize them with the proposed IDoEW regulations.

### *Potential implications: implementation of the proposed IDoEW regulations*

The employer grouping and the participating MPAs have jointly undertaken an 'Acid Test Survey' to determine the potential implications of the imminent promulgation and implementation of the proposed IDoW regulations in the SA Mining and Minerals Sector. The draft report has identified the potential implications from the said survey but a follow-up Questionnaire was distributed throughout the industry to obtain quantification for some of the said potential implications. The report concludes that the majority of persons who are considered to be performing Identified Engineering Work would be eligible to register with the ECSA but that only about 22% of the said persons are in fact currently registered in the appropriate category with the ECSA. The final Report is expected to constitute the basis for the long-awaited engagement between the Mine Health and Safety Council and the ECSA.

## 7. International liaison

**Portfolio Holder: A.M. Garbers-Craig**

### **Key Performance Areas**

*To achieve its objectives, the SAIMM*

- ▶ *Participates in and represents South Africa on bodies such as the Mining, Metals & Minerals Society (TMS), and together with Mintek on Infacon*
- ▶ *Appoints corresponding members in areas such as Australasia, Botswana, Brazil, Canada, Chile, Europe, the Far East, Ghana, New Zealand, United Kingdom, and the United States of America, and interacts with sister institutes in other countries to promote international exchange of scientific and technical information.*

### **7.1 APCOM**

F.A. Camisani-Calzolari, Chairman

The 34th International Symposium on Applications of Computers and Operations Research (APCOM 2009) was held in Vancouver, British Columbia, Canada, 6–9 October 2009. It was organized by the Canadian Institute on Mining, Metallurgy and Petroleum (CIM) and was a successful event despite the

economic conditions that pervaded in the world.

The Chairman of APCOM 2009 was Dr Robert Hall who is an Associate Professor of the University of the British Columbia.

The proceedings covered the following fields:

- ▶ Geostatistics
- ▶ Investment planning
- ▶ Mine planning and equipment selection
- ▶ Mine to mill optimization
- ▶ Process control
- ▶ Developments in mobile equipment automation
- ▶ Total systems thinking and integration
- ▶ Operational management and optimization
- ▶ Sensing and monitoring
- ▶ Greenhouse gases
- ▶ Water usage and reclamation
- ▶ Energy.

The Council meeting was held on 7 October, 2009 under the chairmanship of Dr Sean Dessureault who was elected the next APCOM Council Chairman.

A draft of the new APCOM Constitution was presented for consideration and it is expected to be approved at the next meeting of the Council.

It was decided that the next APCOM will be held in Wollongong, Australia, in September/October 2011 and the following one in Brazil in 2012. It was proposed that in 2014 the event be held in Colorado.

### **7.2 INFACON**

N.A. Barcza, International Committee on Ferroalloys

The Twelfth International Ferroalloys Congress, INFACON XII was held in Helsinki from 6 to 9 June 2010 with post-congress tours on 10 and 11 June to plants in Finland and Russia.

The founders of INFACON are the Ferro-alloy Producers Association (FAPA), Mintek that provides the International Committee on Ferroalloys (ICFA) Secretariat function, and the Southern African Institute of Mining and Metallurgy (SAIMM). ICFA was formed at the time that the first INFACON was held in Johannesburg in 1974.

ICFA awarded INFACON XII to Finland based on the excellent presentation that was given to the ICFA Committee in Delhi during INFACON XI in 2007. The theme of INFACON XII was appropriately chosen as 'Sustainable Future'.

The INFACON XII Organizing Committee is to be congratulated for making the congress an outstanding success. In spite of the somewhat depressed ferroalloy market conditions, it was gratifying that almost 400 delegates travelled to Helsinki from around the globe to attend INFACON XII. Some 120 organizations from more than 35 countries were represented. It was also particularly pleasing that INFACON XII attracted contributions from Russian speaking regions such as Kazakhstan, the Ukraine, and the Russia Federation. The ICFA Committee requested the organizing committee of INFACON XII to pay special attention to the need to grow the involvement from this region and their efforts were rewarded. The Southern Africa contingent of 75 delegates at INFACON XII was the largest from outside Scandinavia and they presented 17 papers and posters. South Africa also was well represented at the Exhibition held during INFACON XII with participation by Thos. Begbie, Metix, and Tenova Pyromet.

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Thanks to the good quality of refereed papers, INFACON XII was able to include 78 oral presentations and 19 posters presentations in the programme. The proceedings included all 97 papers in two volumes comprising 955 pages and is available for purchase up to the end of December 2010 by contacting the INFACON XII Secretary, Dr. Asmo Vartiainen [asmo.vartiainen@outotec.com](mailto:asmo.vartiainen@outotec.com).

The friendly atmosphere during INFACON XII was really excellent and the feedback following the congress very positive. The content of the papers and presentations at the technical sessions was of a very high standard and social programme was most enjoyable. Many of the delegates also took part in several post-congress technical tours, one of which was to St Petersburg and the nearby Tikhvin Ferrochrome plant.

The next INFACON XIII was awarded by ICFA at its meeting during INFACON XII as is scheduled to be held in Almaty in Kazakhstan in 2013. This should provide a wonderful opportunity to visit this interesting part of central Asia and to visit the significant ferrochromium and other ferroalloy related operations near to Aktobe and Aksu as well as in Russia.

INFACON continues to need to cover technologies that address the challenges facing the worldwide ferroalloy industry, namely those of limited resource availability, energy supply constraints, and improved efficiency, environmental issues, and changing market economies.

ICFA must strive to ensure that future INFACON congresses continue to play a relevant role by identifying suitable host countries, appropriate venues, and professional associations that can manage the demanding task of arranging such events.

ICFA held its three-yearly meeting during INFACON XII and considered and approved an offer from the SAIMM to host a website containing papers from previous INFACONs and following a moratorium six months at the current and future INFACONs.

It was also agreed that greater attention in future would be given to ensuing maximum professional recognition of INFACON by professional associations in the countries in which this is considered an important matter, especially to the publications and continuing professional development (CPD).

The INFACON bursary fund was discussed at a meeting of the stakeholders (FAPA, Mintek, and the SAIMM) and it was agreed that better ways to promote greater interest in postgraduate research in ferroalloys would be sought.

### 7.3 SAMREC/SAMVAL

J.R. Dixon, Chairman

The participation of the SSC in the Oil and Gas Working Group (OGWG) was reviewed after the resignation of Chairman Malcolm Wood, a member of the Society of Petroleum Engineers (SPE). It was felt that a South African reporting standard should be consistent with similar standards in the oil and gas industry and with the SPE's Petroleum Resource Management System (PRMS), and should be developed by representatives of the oil and gas industry, as was the case in other countries. The SSC decided to discontinue its participation in the development of a South African reporting standard for oil and gas.

The Main Working Group (MWG) under chairmanship of Mike O'Brien presented in a workshop forum to the World Gold Processing Conference held in November 2009. Topics included the reporting issues under discussion in the MWG, which

included reporting reserves inclusive or exclusive of resources, accreditation of competent persons and competent valuers, independence as a principle, and reporting beyond inferred resources.

During November 2009 Roger Dixon and Ferdi Camisani attended the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) in Beijing. The SSC presented an update of activities in South Africa during the one-day seminar with the Ministry of Land and Resources of China.

Ferdi Camisani continued his work at the UNECE. The UNECE Ad Hoc Group of Experts (AHGE) on Harmonization of Fossil Energy and Mineral Resources Terminology completed its work and published the 2009 edition of the United Nations Framework Classification (UNFC), which caters for solid minerals and oil and gas. The AHGE was replaced with the Expert Group on Resource Classification (EGRC) who conducted a survey to establish whether additional guidelines and specifications were required to supplement the UNFC 2009. The South African response was similar to others: very few companies use the UNFC and therefore had no need for further guidelines and specifications.

The SSC through CRIRSCO continued its watching brief on the IASB Extractive Industries Research Project. The relationship with IASB representatives remains strong and the definitions of reserves and resources contained in the CRIRSCO template have been accepted. The Discussion Paper on Extractive Industries (DP) was issued for comment in April 2010. SSC members participated in a discussion forum organized by South African Institute of Chartered Accountants (SAICA) and will hold a similar session for SSC members on 22 July. The objective is to formulate a formal SSC comment to the DP.

CRIRSCO has continued a strategic alliance with the International Council on Mining and Metals (ICMM) whereby a large portion of its activities is funded by the ICMM. The ICMM and CRIRSCO see the responsible reporting and management of mineral resources and reserves as an integral part of sustainable development in mining. This support allows the SSC to participate in global issues relevant to members of the South African mining industry

The continued support of the SAIMM and the GSSA is recognized and appreciated.

## 8. Management and administration

**Portfolio Holder: A.M. Garbers-Craig**

The Secretariat consists of:

Miss Julie Dixon (Manager)  
Mr Alf Bettoni (Accountant)  
Miss Edith Dube (Membership and Subscriptions Secretary)  
Miss Caron Lance (Journal Co-ordinator)  
Miss Portia Malatji (Accounts Assistant)  
Mrs Zuliakha Malgas (DTP Operator)  
Miss Nazli Mamdoo (Publications Co-ordinator)  
Miss Kelly Matthee (Conference Assistant)  
Miss Lucinda Niekerk (Switchboard/Receptionist)  
Mrs Ginette Oliver (Membership and Subscriptions Supervisor)  
Mrs Anna Panana (Conference Secretary)  
Mrs Apathia Sello (Administration Clerk)  
Mr Raymond van der Berg (Conference Co-ordinator)

## Annual report

Mrs Dawn van der Walt (DTP Supervisor)

Mrs Jacqui van der Westhuizen (Head of Conferencing)

The SAIMM, office bearers and council record their appreciation to the above for their service.

### 8.1 Finance

J.A. Cruise, Honorary Treasurer

*'The time has come' the Walrus said,  
'to talk of many things,  
of debits, credits, inventories  
of a balance sheet that sings'  
'or whether the accounts are in the red or black  
or whether treasurers have wings'*

Over the past twenty years that I have had the honour of being the Honorary Treasurer of your Institute, I have seen many a president, many an accountant, many an auditor, and many a balance sheet. At the end of each financial year, the incumbent president approaches me and warily asks 'How have I done?' This is the moment of power of the Treasurer and each year I milk it for all it is worth.

'Wait for the balance sheet,' I say. 'Wait until the auditor and I have put through our adjustments,' is all I reply, with a poker face as inscrutable as an oriental envoy. For it is the audited balance sheet and the income statement, that records the financial health of our Institute.

The balance sheet shows that non-current assets increased to R12 368 946 (R9 038 008) and current assets increased to R7 981 978 (R7 708 485), producing a total assets increase to R20 350 924 (R16 746 493). This was achieved mainly through an increase in investments to R11 701 438 (R8 525 542). In the current assets the decrease in accounts receivable to R1 220 659 (R2 367 721) was offset by the increase in cash and cash equivalents to R6 729 829 (R5 277 771).

This turnaround was due to the stout effort put in by the staff during the year to collect outstanding debts, which reduced the debt and put money in the bank. Under liabilities we have shown income received in advance for one of our major conferences of R774 956, and whereas it is a pleasure to have that money in the bank at the year end, it really belongs to the function taking place in the coming year, and so it does not appear on the income statement of this year, but is a welcome nest egg for next year.

In last year's income statement, we had a change in the reporting of revenue, which made comparisons with the previous year's figures difficult. This year the reporting of revenues is the same as last year's; thus direct comparisons can be made. Revenue from advertising and sales of books rose to R1 446 822 (R732 512), whereas revenue from conferences dropped to R5 722 989 (R9 629 853). The main reason for the drop was that no large international conference was held this year. Interest received fell to R314 515 (R460 626) and this was due in part to decreasing our cash content of our investment portfolio from 30% to 10%. Operating expenses decreased to R9 325 138 (R12 104 395), the majority of which was a drop in conference expenses, which was commensurate with the drop in conference revenue.

As a result of the above, the operating surplus decreased to R706 081 (R1 255 495).

Fair value adjustments on investments showed a swing of R3 671 414 to R1 865 016 from (-R1 806 398), resulting in an increase in the operating surplus to R2 564 365 from a deficit of R799 647 last year. The effect of this on our reserves is an increase to R20 350 924 (R16 746 493).

This year I would especially like to thank the entire staff for the efforts that they all put in to collect outstanding debts. This year it made a difference in the financial well-being of the Institute, and it shows in the financial statements. The conference department is our revenue generating section and the high standard of our conferences is well known in the industry. Keep up the good work.

To our accountant, Alf Bettoni, a special thanks for keeping the books in such meticulous order and alerting us to inconsistencies. To Dawn and Zuliakha, my thanks for getting the financial statements to print in time for the AGM each year. Thanks to Julie Dixon for keeping everything together, and finally my thanks to our auditor, Robert Kitching, who again has achieved the impossible by having audited accounts ready for the AGM.

I used to say that we should strive for seven fat years. Obviously we miners can't count. We have seen fat years over the past decade. Since 2000 our reserves have grown from under a million rand to over twenty million rand.

I leave as your Honorary Treasurer with the Institute in good financial health.

Our balance sheet is singing.

### New Members

#### Fellows

N. C.B. Smith, M. Stander, B. Metcalfe, M.R. Mortlock, R.A. Watts.

#### Members

C.S. Ainsworth, D. Badalani, B. Ballington, M. Becker, B. Beta, B.J. Beylefeld, S.H. Bhengu, M.G. Boustead, S.J. Brace, S.J.I. Bryson, M.J. Burnett, K.T. Buyskes, D. Chimanikire, R. Chinamatira, W. Chitate, F. Chitonga, A. Chiwoko, B.L.D. Cocks, H.J.B. Combrink, J.W. Coopmans, G.M. Cox, C.R. Deacon, H. de Klerk, C.Y. Demirci, P. den Hoed, R.J. Deysel, B. Dlamini, T. Dlokweni, H. Dodzo, A.F. Drake, C.J. du Preez, D.G. du Toit, S. Dube, S. Duma, M.S. Ertugrul, S.J. Etchells, H.J.C. Ferreira, M.J. Freer, M. Graeme, T.A.J. Grant, U. Gerstmann, L.M. Gezimati, M.J. Greenhalgh, X. Gumede, N. Hazen, D. Heyl, M.S. Hunt, J.L. Jacobs, R. Jerez, P. Joubert, S.J. Joubert, M.M. Kamusoko, E.A. Karberg, A. Lachman, H.T. Laitala, C.J. le Roux, P.J. le Roux, F.E. Leygonie, M.T.F. Lugoma, M. Lydall, S. Mabenge, D. Maharaj, L. Makwamaya, S. Maleba, A. Manyise, L.I. Marumole, W.F. McKechnie, K.G. Mercer, G.J. Mkhabela, M.R. Moagi, W.K. Moeller, T. Mogotsi, T. Mompoti, B.A. Montpellier, G.C. Morgan, R. Moseme, M.J. Mosupyoe, L.C. Mthiyane, S. Mudaly, C. Mundiya, C.J. Munyongani, T. Mushove, C.T. Mutevhe, N.T. Muyeza, A.B. Mwewa, M. Naidoo, T. Naidoo, P.J.S. Nathan, C.S. Naude, P.W.A. Nel, V. Netshivhangoni, A. Ngilazi, M.S. Ntombela, A. Nyakudarika, R.A. Pax, D. Phuthi, P.A.I. Popoola, W.A.J. Pretorius, G. Rappard, T.R. Robinson, B. Rossini, P. Rugube, N. Sacks, P. Schmitz, F.J.E. Scholtz, V. Sibanda, A. Singh, A.B. Smit, A.M. Smit, M. Swanepoel, C.I.T. Teffo, L.A. Themba, H.H. Thiele, W.R. Thompson, J.A. Upshall, C.F. van der Merwe, T.J. van Heerden, L.M. van Niekerk, J.-D.F. van Rensburg, L.J. van Wyngaard, C.J. van Zyl, R. Vasudeva, G.P. Viljoen, A.F. von Wielligh, D. Vyas, B.W. Yambayamba, I.R. Wermuth, O. Zvarevashe.

## Annual report

### Associates

C. Amoah, A.A. Angelov, A. Bagchi, T.D. Ballinger, G. Billingsley, O. Biribauer, A. Boodoo, M.B. Brennan, T.C. Bruce, P.C. Bwalya, M. Chabinga, E. Chamboko, P. Chandigere, R.J. Cheshier, A.C. Chierigati, K. Chikumbi, F. Chimedza, M. Chirisa, I. Chisi, V.E. Coetzee, J.F. Costa, J. Drew, P.R. Engelbrecht, J.G. Faul, D. Ferguson, D.M. Foord, S. Gemmell, D. Gericke, N.A. Groenewald, M.W. Henderson, L.P. Hoffmann, S. Hussein, J.L. Jacobs, F. January, K. Kasitu, S. Kauzeni, J. Kemp, D.H. Komola, J.C. Koppe, A. Kunda, J. Kunji-Behari, R. Kutama, S. Laubscher, J. le Roux, A.M. Lemon, T. Lessard, E. Lisomona, V.P. Lomo, R. Loots, L. Lwando, A. Madowe, R.P. Makgae, H.F. Mampane, M.K. Masanza, B. Matanda, T. Mazibuko, C.L. Mbozi, P.S. Mbuyazi, S.G. Mgenge, L. Milupi, V. Mlalazi, F. Monteiro, J. Morgan, S.J. Moribame, R.P. Motsie, D.O. Moumakwa, E. Mpoloka, M. Mugadza, J.-J. Mugala, M.C. Mulligan, D. Muma, M. Musonda, K.K. Musumali, J. Mwape, C. Nampungwe, M.M. Nayame, J. Ncube, C.A. Ndunguru, C.M. Nel, H.F. Nieman, T. Ntabe, O. Ntabeni, S. Ntwayagae, V. Oberholzer, O.M. Ojo, N. Patel, S. Pelsler, R. Peroni, P.H. Pienaar, T.J. Pilusa, V.L. Protas, M. Rama, M. Schroder, G.E. Searby, O. Sebetlela, K. Selby, K.J. Setlhake, N. Sewdayal, S. Sewdayal, F.I. Shayo, M.K. Shoke, A.D. Siame, S. Simelane, A. Simwizye, G. Siwale, N.L. Smith, M.J. Sole, A. Strydom, D. Swanepoel, P.C.J. Swart, L.C. Tshabalala, E. Tukker, R.E. van Schalkwyk, A.A. van Wyk, L. Vermeulen, B.N. Viljoen, M.D. Wanless, W.J. Whittaker.

### Students

K.K. Arthur, J.M. Attenborough, J. Barnard, P. Biyana, J.J. Canco, H.M. Chaba, F. Chinyakata, P. Chuma, A.P. de Beer, D.A. Dipale, S.N. Dlamini, R. Escherich, N. Esterhuizen, Y. Fakier, M.Y. Gani, L. Hempe, T. Hoyi, B.D. Human, Y. Jako, J. Jonck, F.J. Joubert, T. Kabuba, S. Kamlana, B.M. Kgaka, M.M. Kgaka, M.P. Kgatla, T.O. Khampepe, R.R. Khoza, H.W. Kleinhans, T. Kuriwa, D.G. Lebyane, S.S. Lephuthing, J.M. Letsoalo, E.S. Links, Z. Mabalabala, M.V. Mabolabola, T. Machaba, A. Machoga, H. Madonsela, S. Madwantsi, H.D. Mafofo, M.B. Magakwe, G.N. Mahlangu, D. Mainganye, B.A. Makaka, N.W. Makgobelele, S. Makhanya, M.N. Makhonjwa, R.S. Makuwa, W.P. Malonde, C. Maluleke, M.C. Mangena, M.J. Mangena, Z. Manyathela, M. Marumani, P. Masehla, K.D. Mashiane, D.T. Mashitsho, K. Masiwa, E.N. Maswanganyi, T.G. Mathebula, K.M. Matshaba, M. Matsutsu, S.A. Maunzagona, S. Mayane, W. Mbedzi, D.S. Mbodi, T.S. Mbonani, V. Mbonani, L.L. Mfey, E. Mhashu, T.G. Mhuryengwe, T. Mlanjeni, M. Mmbara, M.P. Mmofele, S.T. Mmokwa, S.P. Mnisi, K.A. Moagi, L.M. Moagi, R.L. Mojela, L.F. Mokgantshang, G.T. Molapo, T.M. Moloi, L.D. Mothelesi, M.P. Mothiba, T. Motjope, P.R. Mphokane, R.B. Mposi, S. Mtshakaza, P.E. Mudziri, H. Mukamba, M.F. Mukhithi, D. Mulange, A. Muller, R. Munandi, K. Munsamy, F.K. Munyai, C.B. Musimhi, M. Napo, J. Naude, A. Naude, H.R. Neluheni, T. Netshilema, W.A. Ngobeni, M. Ngobo, B. Ngwenya, F.T. Ngwenya, J. Nhwatiwa, P. Nhlantlani, S.R. Nichol, D.R. Nkuna, D. Nkuna, P. Noah, T. Ntlwana, T.E. Ntsoane, S.T. Ntumba, T. Nyazaya, K. Nyembwe, S. Nzima, T.M. Nzuzo, H.N. Ongendangenda, A. Pereira Soares Moreno, K. Phage, S. Poswayo, B.G. Puso, N.B. Ralombe, V. Ramaila, M. Ramakokovhu, S.T. Ramokgopa, T.R. Ramongalo,

M.M. Ramoshaba, S. Rawasha, A.I. Ruiters, S. Samsodien, J.M. Sebola, B.U. Sebopa, L. Sehunwe, T.S. Selemela, L.J. Sethokga, T.S. Setshedi, K.D. Setsoe, M.I.J. Shadung, M.T. Shalang, V.I. Shikwambana, P.R. Shiri, M.V. Shobete, S. Sidu, S. Singh, A.J. Siwela, K.S. Skhosana, L.C. Smith, F. Taljaard, B.M. Thethwayo, N. Tshiongo, D.J. van Castricum, D. van Der Merwe, R. van Der Merwe, N. Venter, C. Yakan-A-Nwai, M. Yellishetty.

### Company Affiliates

Magnetech Pty Ltd, Minerals Operations Executive (Pty) Ltd, Paterson & amp, Cooke Consulting Engineers (Pty) Ltd, Reid & amp, Mitchell, Senet, VBKOM Consulting Engineers, Webber Wentzel.

### Resignations

### Fellows

M.B. Cortie, P.J. Dillon, J.D. Gow, L.A. Jagger, D.G. Osborne, C. Pouroullis, P.R. Thorburn, T.C.A. Wadeson, J.A. Walker, S.S. Willmott.

### Retired Fellows

L. Alberts, L.F. Baars, R.G. Jurd, J.C. Mostert, W.T. Ruhmer.

### Members

M. Akyuzlu, R. Beeslaar, C.H. Botha, M.J. Cole, M.W. Grodner, N.B. Henderson, M.W. Hildyard, M.J. Hughes, R.M. Hull, D. Molapo, G.J. Mostert, H.J. O'Keeffe, T.E. Pogue, M. Pouroullis, H.R. Rood, E. Steinfatt, M.C. Tyndall, W.E. van Hoepen, R.O. Wellmann, B. Zhao.

### Retired Members

A.W. Bryson, S.P. Ellis, D.L. Hodgson, F.W. Knox, J.R.W. Lindsay.

### Associates

A. Bosch, J. de Jesus, De C. de Saldanha, S.W. Evans, L.G. Fouche, K. Gallacher, L. Hannweg, K.A.A. Hein, D. Hoffmann, B.L. Hollins, A. Kharuxas, E.V. Lilford, M.C. Matholeni, A.E. Mavhungu, V.N. Mbangula, A.B. McLean, B. Mmatli, J. Morkel, K.P. Munyai, O. Nolle, S. Pelletier, M.P.S. Pretorius, T.T.V. Resane, C. Sonnekus, D. van Deventer, V.V. van Rensburg, M. van Rooyen, S.J. van Wyk, J. Viljoen, E. Wegner.

### Students

S. Barton, C.A. Bonze, D. Mac L. Buller, P.N. Bungu, K.T. Chiloane, C.E. Dekker, S.S. Dlamini, M.T. Dolamo, M.R. Kgampe, L. Main, M.F. Moripa, M.D. Paulsen, M. Scott, A.N. Serero, T.T. Tladi, T. van Aard, T.A. van Niekerk, R. van Staden.

### Company Affiliates

Kerneos South Africa, Lightnin Africa, Shell South Africa Energy (Pty) Ltd Chem, Transnet/Protekon, Ukhozi Mining (Pty) Ltd, Verref Minerals.

### Members transferred to Higher Grade

### Transfer from Member to Fellow

C.A. Ackhurst, S.R. Amos, T. Bookless, J.J. Bornman, H.P. Chirimumimba, G.M. Cresswell, J.D. Green, F.P. Guilherme, M.R. Holmes, R.G. Koelmans, H.J. Kriel, G.H. Lawrie, M.J. Mothomogolo, J.M.S. Mtonga, B.A. Murphy, T.H.C. Pegram, J.L. Porter, C.A. Preece, P.J. van Staden, M.L. Wertz, E. Wolmarans, M. Woodhall.

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### *Transfer from Associate to Fellow*

H.C. Hoffmann; M. Ram Reddi; G.J. Stenzel; T. van den Berg.

### *Transfer from Associate to Member*

A.F. Drake, P.A.P. Fouche, T. Gazis, M.M. Manamela, R.K.K. Mbaya, T.D. Mutava, S.P.F. Nong, M.C. Nxumalo, R.A. Pax, W.Z. Saungweme, O.V. Seboni, C.G. Theletsane, F.M. van Daalen, I.R. Wermuth, K. Whacha.

### *Transfer from Associate to Student*

T.B. Lekgetho, J.I. Molebale, A.B. Nesbitt.

### *Automatic transfer to Associate*

M.D. Adams, B.T. Afeni, W. Ahmed, M. Antoniadis, A.A. Aysel, T. Ayenakin, M.C. Baitseng, M.A. Bantshi, A. Barnard, D.G. Baxter, P.D. Bembe, J.P. Bergh, T. Bhengu, I.J. Bisansaba, G. Botha, Z. Botha, O.H. Bowers, M.F. Breed, J. Breytenbach, M.F. Buthelezi, M. Buthelezi, O.J. Buys, D.J. Campbell, I. Chauke, T.K. Chauke, H.T. Chiwaye, L.T. Chuene, D.L. Cloete, J.M.A. Coelho, L.J. Coetzer, W.C. Coetzer, R.H. Connan, R.A. Couperthwaite, J.H.C. Cronje, G. Dabula, T.T. Davhana, S.S. Debedu, C. Dednam, A.C. Deneys, J.M. Dippenaar, P.S. Dladla, B.B. dos Santos, F.J. du Randt, G.I. du Randt, G.B. Dukes, H.M. Ebrahim, N.E. Fhedzi, A.J.J. Gloy, D.J. Grove, Z. Halifa, M.B. Hamese, M.L. Harris, M. Hochobeb A.R. Jones, J.T. Jordaan, C.M. Joubert, I.N. Kalipi, M. Kasonde, K. Katuku, R.S. Kekana, M.N. Kgengwe, J. Kgware, X.N. Khanyezi, T.J. Khemisi K.M. Kirk, J.H. Klein, G.D. Kleynhans, R. Kotze, J. Kruger, A.S. la Grange, T. Leach, L.-L. Lee, A. Letsholo, P.E. Lihaba, V.P. Lomo, M.G. Luther, E. Lwamba Si-Bomve, M.I. Mabala, M.L. Mabuza, T.N. Machacha, M.S. Madiba, E.I. Madibane, K.R. Mafoko, M.L. Mahapa, J. Mahlangu, A.T. Makgala, M. Malahlela, M.S. Malapane, P. Malele, M. Malinga, J.S. Mamabolo, H.F. Mampane, M.P. Mampuru, G.S. Mare, V. Maronga, T.P. Mashiane, P. Mashimane, L.J. Masilo, K.C. Matamba, D.S. Mathebula, A.M. Matlhaku, T. Mavhunga, S.M. Mazubane, M.W. Mbalaka, E.M. McLintock, B.C. Melamu, A. Mhondiwa, L.N.T. Miyen, H.L. Mmola, S.P. Mnisi, T. Modiba, T.R. Modiba, K.M. Mogoba, S.P. Mohlake, L.M. Mohlala, L.S. Moholo, M.A. Mojaki, K. Mokabane, K.J. Mokgatla, L.A. Mokone, N.V. Molala, S. Moodley, S.P.D. Morutlwa, M.E. Moshakgomo, T.J. Mpholo, T. Mudau, L.M. Mufamadi, S.P. Muller, V.E.M. Munyai, H.K. Musiyarira, P. Muthaphuli, H. Mutondwana, N.R. Mvelase, N.V. Mwamba, E. Mzizi, J.J. Naude, B.V. Ndebele, M.J.-J. Ndiabintu, J.P. Ndjago, H.R. Neduvhuledza, R. Nell, T.G. Nemakhavhani, R.T. Nengwenda, D.E. Nethavhanani, L.W. Netshikulwe, A. Nhasengo, J.M. Nkanyane, K. Nkatswe, F. Nkuna, L.M. Nkuna, E.N. Nkwamba, P.T. Nortje, N.M. Ntseke, S.E. Ntsepe, E.T. Nyakwenga, M. Nyirenda, D.P. Obeng, I.O. Ogunniyi, S.P. Pearton, H.M. Phalwane, T.R. Phiri, N.E. Pilane, S.G. Ponnai, J. Puig Mengual, H.S. Ramokgadi, M. Ravhura, J.M. De Wet Roos, L. Rwodzi, N. Sabelo, A. Salim, H. Saridikmen, R.J.M. Sebitloane, M.I. Sebola, C. Sebothoma, T.P. Segwathe, T. Sehloho, O. Setshogwe, C. Setuke, L.N. Shago, A. Shapaka, M.X. Shezi, T.T. Shivambu, E.T. Sibanyoni, M.D. Sigama, M. Sivhidzho, W.J. Snyman, W.C. Southey, M.C.B. Stander, D. Swanepoel, A.P. Tabane, T. Tamenti, E. Thorne, G.J.T. Tladi, W. Tladi, K.K. Tladiyamoroba, N.E. Tolbat, D. Tshishonga, J. Tshukutswane, P. Tyobeka, P.T. van der Meer, G.P. van Greunen, C. van Lill, R.E. van Schalkwyk, H.J. van Wyk, N. Vele, J.A. Venter, H.J. Visser, R. Visser, E. Wegner, H. Weitz, N.S. Wolmarans, G.S. Yaka, K. Yathavan.

### *Members who retired*

#### *Fellows*

H.E.K. Allen, F.W. de Vries, F.M.G. Egerton, A.J. Field, G.G. Garrett, K.J. Hay, D.L.J. Lawrence, D. Tudor, H.G. Waldeck, R.W. Way, P.S. Wentworth.

#### *Members*

I.J. Barker, M. Dumka, J.A. Engelbrecht, A.L. Hinde, D.J. Milella, P. Smith, K.C. Spencer, J.W. Walls, R.C. West, J.C.M. Wethmar.

#### *Associates*

G.R. Ackerman.

#### *Deceased*

#### *Fellows*

G.C.P. Donoghue; R.C. Espley-Jones; A. Karzulovic, S.I. Malone; J.M.S. Mtonga; C.B. Pask.

#### *Retired Fellows*

G.P. Bennett, D.J. Forder, W. Lurie, J.D. McMorran, E.R. Rudolph, H.J. Stucke, K.W. Walpole.

#### *Retired Members*

P.C.M. Bathurst, M.F. Dawson, B.J.S. Hornabrook, M.H. Maddocks.

#### *Members*

A. Maharaj, J.P. McKelvey, M. Mtonga, D.J. Rushton, I.J. Walton.

#### *Life Fellows*

J.A. Nixon.

#### *Students*

B.D. Mohoaladi, T.J. Mokgokong.

### *Members who were reinstated*

#### *Reinstated as a Member*

A.K. Anyimadu, L.C. Bradford, J.J. Ison, S.B. Naicker, Z. Setete, K.J. Smale, N. Sutherland, T. Nigel, A.Z. Toper, S. Turner, R.M. Tyler.

#### *Reinstated as a Retired Member*

P. Smith.

#### *Reinstated as Associates*

O.P.J. Douglas, J.H. Engelbrecht, A.K. Monsengo, J. Steele, P. Van Aarde Van der Westhuyzen, M. Qabaka.

#### *Reinstated as a Fellow*

None.

#### *Reinstated as a Retired Fellow*

G.G. Garrett. ♦