



2017 Outstanding Section Membership
Recruitment and Retention Performance
South Africa Section

IEEE and IEEE South Africa

Presentation for IEEE Senior Membership Elevation workshop
at the School of Electrical, and Information Engineering at
the University of the Witwatersrand (Wits)

by Dr Albert Lysko (alysko@csir.co.za, lysko@ieee.org)

IEEE South Africa Chair

2018-05-25

About IEEE

- ▶ The **I**nstitute of **E**lectrical and **E**lectronics **E**ngineers
read *I-Triple-E*
- ▶ Professional Association
 - Corporate Office in New York City
 - Operations Center in Piscataway, New Jersey
- ▶ Dedicated to advancing technological innovation and excellence
- ▶ **Founded on January 1, 1963**
 - Origins - merger of the American Institute of Electrical Engineers (AIEE, est. **1884**) and the Institute of Radio Engineers (IRE, est. **1908**)
- ▶ Supported by:
 - 38 societies (each is focused on a certain technical knowledge area)
 - 7 technical councils
 - 2 technical committees
- ▶ Has over **430,000+ members** in about 160 countries – **world's largest** technical professional organization

https://www.ieee.org/about/about_index.html

https://www.ieee.org/about/today/at_a_glance.html

http://en.wikipedia.org/wiki/Institute_of_Electrical_and_Electronics_Engineers

What do **we** do? What can **you** do?

- ▶ Publishes literature in engineering, technology and computing
 - e.g. **9 of 10** of the “**top 10**” journals in el. engineering, comms. etc.
- ▶ Organizes conferences
 - Reputable and high impact
 - Approval/support for local conferences
- ▶ Develops standards
 - Via IEEE SA: for example, **WiFi is IEEE 802.11**
- ▶ Gets engineers and technologists from different locales together
- ▶ Organizes professional activities among engineering students
- ▶ Educates the public about Engineering

<https://www.ieee.org/publications/journalmag/journalcitations.html>

https://www.ieee.org/about/today/at_a_glance.html

https://www.ieee.org/publications_standards/publications/journalmag/journalcitations.html?WT.mc_id=lp_ps_rah

Top journals by Journal Impact Factor

Electrical and Electronic Engineering

IEEE has 22 of the top 25 journals in Electrical and Electronic Engineering by Journal Impact Factor:

1. Progress in Quantum Electronics
2. IEEE Industrial Electronics Magazine
3. IEEE Communications Magazine
4. IEEE Signal Processing Magazine
5. Proceedings of the IEEE
6. IEEE Wireless Communications
7. IEEE Transactions on Pattern Analysis and Machine Intelligence
8. IEEE Journal on Selected Areas in Communications
9. IEEE Transactions on Fuzzy Systems
10. IEEE Internet of Things Journal
11. IEEE Network
12. IEEE Transactions on Industrial Electronics
13. IEEE Transactions on Power Electronics
14. IEEE Transactions on Smart Grid
15. IEEE Transactions on Neural Networks and Learning Systems
16. IEEE Transactions on Power Systems
17. Automatica
18. IEEE Journal of Selected Topics in Signal Processing
19. IEEE Transactions on Wireless Communications
20. IEEE Transactions on Geoscience and Remote Sensing
21. IEEE Transactions on Sustainable Energy
22. IEEE Transactions on Image Processing
23. Pattern Recognition
24. IEEE Vehicular Technology Magazine
25. IEEE/ASME Transactions on Mechatronics

Telecommunications

IEEE has 13 of the top 15 journals in Telecommunications by Journal Impact Factor:

1. IEEE Communications Surveys and Tutorials
2. IEEE Communications Magazine
3. IEEE Wireless Communications Magazine
4. IEEE Journal on Selected Areas in Communications
5. IEEE Internet of Things Journal
6. IEEE Network
7. Vehicular Communications
8. IEEE Transactions on Wireless Communications
9. IEEE Vehicular Technology Magazine
10. IEEE Transactions on Vehicular Technology
11. IEEE Transactions on Communications
12. Bell Labs Technical Journal
13. IEEE Systems Journal
14. IEEE Transactions on Emerging Topics in Computing
15. IEEE Transactions on Mobile Computing

Other top IEEE journals

- Automation and Control Systems
 - #1 IEEE Transactions on Industrial Electronics
 - #2 IEEE Transactions on Industrial Informatics
 - #4 IEEE Control Systems Magazine
- Computer Science—Artificial Intelligence
 - #1 IEEE Transactions on Evolutionary Computation
 - #2 IEEE Transactions on Pattern Analysis and Machine Intelligence

Based on The 2016 Journal Citation Reports (JCR) study, released in June 2017;
See also: <https://www.ieee.org/publications/journalmag/journalcitations.html>

IEEE = Top conferences, too ... for example:

Guide2Research

Top Conferences for Databases & Information Systems

Ranking is based on *Conference H5-index* >=12 provided by Google Scholar Metrics

Rank	Hindex	Publisher	Conference Details
1	158	IEEE	CVPR : IEEE Conference on Computer Vision and Pattern Recognition, CVPR Jun 18, 2018 - Jun 18, 2018 - Salt Lake City, United States http://cvpr2018.thecvf.com/abstracts/track-main
3	98	Springer	ECVP : European Conference on Computer Vision Sep 8, 2018 - Sep 14, 2018 - Munich, Germany https://eccv-2018.org/
5	89	IEEE	ICCV : IEEE International Conference on Computer Vision Jan 30, 2018 - Jan 31, 2018 - Istanbul, Turkey http://www.iccvthetech.org/
36	50	IEEE	IROS : IEEE/RSJ International Conference on Intelligent Robots and Systems Oct 1, 2018 - Oct 5, 2018 - Madrid, Spain https://www.iros2018.org/abstract
53	44	Springer	ACMMM : ACM Multimedia Jun 12, 2018 - Jun 15, 2018 - Amsterdam, Netherlands https://www.acmm2018.org/
55	43	Springer	BMVC : British Machine Vision Conference Sep 5, 2018 - Sep 8, 2018 - Northumbria University, United Kingdom https://www.bmvt2018.ac.uk/about-us/news-events/abstracts/2018/bmvt2018-main-conference/
88	35	Springer	ACCV : Asian Conference on Computer Vision Dec 2, 2018 - Dec 6, 2018 - Perth Western, Australia http://accv2018.net Deadline: Thu 08 Jul 2018
94	34	IEEE	ICIP : IEEE International Conference on Image Processing Oct 7, 2018 - Oct 10, 2018 - Athens, Greece https://ic2018.ieee.org
95	34	IEEE	ICPR : International Conference on Pattern Recognition Aug 20, 2018 - Aug 20, 2018 - Beijing, China http://www.icpr2018.org/
98	34	Springer	MICCAI : Medical Image Computing and Computer Assisted Intervention Sep 16, 2018 - Sep 20, 2018 - Granada, Spain http://www.miccai2018.org/
111	31	IEEE	WACV : Workshop on Applications of Computer Vision Mar 12, 2018 - Mar 15, 2018 - Lake Tahoe, United States http://wacv18.uscgs.org/
121	29	IEEE	ICB : International Conference on Biometrics Feb 21, 2018 - Feb 21, 2018 - Gold Coast, Australia http://icb2018.org/

Image processing and Computer Vision

Discounts on registration fees in
IEEE conferences normally
≥ IEEE annual membership fee!

Guide2Research

Top Conferences for Databases & Information Systems

Ranking is based on *Conference H5-index* >=12 provided by Google Scholar Metrics

Rank	Hindex	Publisher	Conference Details
62	42	IEEE	BHI : IEEE-EMBS International Conference on Biomedical and Health Informatics Mar 4, 2018 - Mar 4, 2018 - Las Vegas, United States https://bhi2018.embs.org/2018/
98	34	Springer	MICCAI : Medical Image Computing and Computer Assisted Intervention Sep 16, 2018 - Sep 20, 2018 - Granada, Spain http://www.miccai2018.org/
106	32	Springer	SAC : ACM Symposium on Applied Computing Apr 6, 2018 - Apr 13, 2018 - Pau, France https://www.sigapp.org/bachel2018/
140	28	Springer	AIME : Artificial Intelligence in Medicine Jun 21, 2017 - Jun 24, 2017 - Vienna, Austria http://aim17.aimeconline.org/
171	25	IEEE	Big Data : IEEE International Conference on Big Data Dec 10, 2018 - Dec 13, 2018 - Washington, United States http://www.ieeebigdataconf.org/2018/ Deadline: Wed 08 Aug 2018
184	24	AMIA	AMIA : AMIA Symposium Nov 3, 2018 - Nov 7, 2018 - San Francisco, United States https://www.amia.org/amia2018
192	23	IEEE	SMC : IEEE International Conference on Systems, Man and Cybernetics Oct 7, 2018 - Oct 10, 2018 - Miyazaki, Japan http://www.smc2018.org/
208	22	Springer	RECOMB : International Conference on Research in Computational Molecular Biology Apr 21, 2018 - Apr 24, 2018 - Paris, France http://recomb2018.fr/
247	19	Springer	IHI : ACM International Health Informatics Symposium Jul 27, 2017 - Aug 1, 2017 - Fukuoka, Japan
266	18	World Scientific	PSB : Pacific Symposium on Biocomputing Jan 3, 2018 - Jan 7, 2018 - Big Island of Hawaii, United States https://psb.stanford.edu/
291	17	IEEE	BSN : International Workshop on Wearable and Implantable Body Sensor Networks Mar 4, 2018 - Mar 7, 2018 - Las Vegas, United States https://bsn2018.embs.org/2018/
316	15	Springer	PPSN : International Conference on Parallel problem solving from nature Sep 8, 2018 - Sep 12, 2018 - Coimbra, Portugal http://ppsn2018.din.uoi.pt/
343	14	Springer	ICSI : International Conference on Advances in Swarm Intelligence Jul 27, 2017 - Aug 1, 2017 - Fukuoka, Japan

Top Scientists by H-Index

United States	United Kingdom
Canada	Germany
Switzerland	Australia
Netherlands	Hong Kong
France	Italy
Spain	Belgium

Biomedical Engineering and Medical Informatics

<http://www.guide2research.com/topconf/information-systems>

Ranking is based on

Conference H5-index >=12

provided by Google Scholar Metrics

Guide2Research

Top Conferences for Databases & Information Systems

Ranking is based on *Conference H5-index* >=12 provided by Google Scholar Metrics

Rank	Hindex	Publisher	Conference Details
7	80	IEEE	INFOCOM : Joint Conference of the IEEE Computer and Communications Societies (INFOCOM) Apr 15, 2018 - Apr 19, 2018 - Honolulu HI, United States http://infocom2018.ieee-infocom.org/content/all-papers-main-conference
11	71	IEEE	ICRA : IEEE International Conference on Robotics and Automation May 21, 2018 - May 21, 2018 - Brisbane, Australia http://www.icra2018.org/
20	60	IEEE	ISSCC : IEEE International Solid-State Circuits Conference Feb 11, 2018 - Feb 15, 2018 - San Francisco, United States http://isscc.org/
29	54	Association for Computing Machinery	ISCA : International Symposium on Computer Architecture Jun 2, 2018 - Jun 6, 2018 - Los Angeles, United States http://isca.acm.org/abstracts2018/
42	48	Association for Computing Machinery	DAC : Design Automation Conference (DAC) Jun 24, 2018 - Jun 28, 2018 - San Francisco, United States https://dac.acm.org/call-for-contributions
44	47	IEEE	SC : International Conference on High Performance Computing, Networking, Storage and Analysis Nov 11, 2018 - Nov 16, 2018 - DALLAS, United States http://sc18.supercomputing.org/
46	46	IEEE	HPCA : IEEE International Symposium on High Performance Computer Architecture Feb 27, 2018 - Feb 27, 2018 - Vienna, Austria http://hpc2018.ece.ucsb.edu/
60	43	IEEE	CDC : IEEE Conference on Decision and Control Dec 17, 2018 - Dec 19, 2018 - Miami Beach, United States https://cdc2018.ieeeccs.org/
61	43	IEEE	ACC : American Control Conference Jun 27, 2018 - Jun 29, 2018 - Milwaukee, United States http://acc2018.aaccs.org/
64	41	IEEE	MICRO : IEEE/ACM International Symposium on Microarchitecture Oct 14, 2018 - Oct 18, 2018 - Boston, United States http://www.microarch.org/micro2018/
65	41	usenix	FAST : Conference on File and Storage Technologies Feb 12, 2018 - Feb 15, 2018 - OAKLAND, United States https://www.usenix.org/conference/fast18/call-for-papers
67	41	IEEE	DATE : Design, Automation and Test in Europe Conference and Exhibition Mar 19, 2018 - Mar 23, 2018 - Dresden, Germany https://www.date-conference.com/call-for-papers

Hardware, Robotics & Electronics



IEEE South Africa today



- ▶ 41 years young ☺, ~1100 members and 50 volunteers
- ▶ 13 local Chapters/Committees **representing 27 technical Societies** and Councils
- ▶ 18 units at 7 local universities
- ▶ **Hold 30 to 90 events and 10-12 conferences per year, attracting thousands of people**
- ▶ **15 IEEE Awards Recipients** from South Africa since 1977
- ▶ The IEEE South Africa Section successfully nominated **Ian C. McRae** in 2006 and **Elon R Musk** in 2015 to be an IEEE Honorary Members (*only 1-2 such members from the globe, p.a.*)
- ▶ **1** milestone for First Operational Use Of Wireless Telegraphy, 1899-1902
 - No Special Citation in History yet
- ▶ Offers various services
 - Conference support and Event support (incl. **CPD points**)
 - Research support via top impact journals, Distinguished Lecturer tours, ...
 - Pre-/post-education/community development programmes
 - Individual support via technical and leadership training courses & opportunities
- ▶ **Very good relations and cooperation with SAIEE, ECSA...**



www.ieee.org.za

- References: <http://www.ieeer8.org/awards/awards-history/ieee-region-8-awards-recipients/> ,
7 <http://www.ieee.org.za/contact-us> , https://www.ieee.org/about/awards/bios/hon_member_recipients.html

CSIR
our future through science



IEEE South Africa Section ~ 50 officers

Source: www.ieee.org.za/contact-us

Last updated: 02 Aug. 2017

The IEEE South Africa Section Committee consists of:

- The IEEE Executive Committee (ExCom)
- Professional Activities / Member Engagement Committees (Standing Committee Chairs, Ad-hoc Committee Chairs and Affinity Groups Chairs)
- Technical Activities Committee (Technical Society Chapter Chairs and Technical Council Chapter Chairs)
- Student Activities Committee (SAC) (Incl. Chairs of all Student branches, Branch technical chapters and Branch affinity groups)

Executive Committee (ExCom)



Albert Lysko,
SMIEEE
Section Chair



David Oyedokun,
MIEEE
Secretary



Jacques van Wyk,
SMIEEE
Treasurer



Shaun Kaplan,
MIEEE
Past Chair



Darryn Cornish,
MIEEE
Vice Chair



Dauda Ayanda,
MIEEE
Vice Chair

Committee Role	First Name	Last Name	Contact
Section Chair	Albert	Lysko	Contact Albert
Past Chair	Shaun	Kaplan	Contact Shaun
Vice Chair	Darryn	Cornish	
	Dauda	Ayanda	
Secretary	David	Oyedokun	Contact David
Treasurer	Moin	Hanif	Contact Moin

Detailed info at www.ieee.org.za/contact-us

IEEE South Africa organizational units (TA, MGA, EAB)

- ▶ AES10/GRS29 (**Aerospace and Electronic Systems, Geoscience and Remote Sensing**)
- ▶ AP03/MTT17/EMC27 (Joint Chapter: **Antennas and Propagation, Microwave Theory and Techniques & Electromagnetic Compatibility**)
- ▶ C16 (**Computer**)
- ▶ CIS11 (**Computational Intelligence**)
- ▶ CSS23/RAS24 (Joint Chapter: **Control Systems & Robotics and Automation**)
- ▶ E25 (**Education**)
- ▶ ED15/PHO36/CAS04/SSC37 (Joint Chapter: **Electron Devices, Photonics, Circuits and Systems, Solid-State Circuits**)
- ▶ EMB18 (**Engineering in Medicine and Biology**)
- ▶ IE13/IA34/PEL35 (Joint Chapter: **Industrial Electronics, Industry Applications & Power Electronics**)
- ▶ IT12 (**Information Theory Society**)
- ▶ PE31 (**Power and Energy**)
- ▶ SMC28 (**Systems, Man & Cybernetics**)
- ▶ SP01/COM19 (Joint Chapter: **Signal Processing & Communications**)
- ▶ TEM14 / SYS45 Joint Chapter: **Technology and Engineering Management Society / Systems Council**
- ▶ NANO42 **Nanotechnology Council**
- ▶ **Technical Committee on Enterprise Architecture and Engineering**

<http://www.ieee.org.za/contact-us>, Sect. 9 of https://www.ieee.org/documents/mga_operations_manual.pdf

MGA:

- Student branches
 - 12 students + 1 faculty
- Student branch chapters
 - 6 students + 1 faculty
- Affinity Groups
 - Young Professionals
 - Women In Engineering

EAB:

- HKN Chapters
 - 10 students + 1 faculty

Can do more!



Some (~30%) of recent technical events & activities

- ▶ A [call](#) was sent out for nominations **for IEEE and SAIEE Joint Distinguished Award**. The award will be handed to the winner at the SAIEE's Annual Banquet on Friday 13 Oct 2017
- ▶ Conference "2017 IEEE Future of Electronic Power Processing and Conversion (FEPPCON)" held in Kruger National park from 12-16 Jun 2017
- ▶ Talks "Keeping the Lights On! Yesterday, Today & Tomorrow!" in Johannesburg, Cape Town and Durban
- ▶ Talk "[Optimising practical problems - research and reality](#)" by Dr Irene Moser, UNISA, Gauteng
- ▶ "[IEEE Summit: 5G in Future Africa](#): The role of IoT, Cognitive Radio and Cybersecurity in networking the next billion", Pretoria
- ▶ Talk "[ECSA: Road to registration](#)" by Mr J Moloisane, and "Link between IEEE and ECSA" by Dr A Lysko, Pretoria
- ▶ Talk "Interferometry and Synthesis in Radio Astronomy", by Prof D Davidson, Rondebosch
- ▶ Conference "[2017 International Conference on the Domestic Use of Energy](#) (DUE)", Western Cape
- ▶ Workshop "[Trends in Wireless Networking & Human Factors on Intelligent Systems](#)", U. of Johannesburg
- ▶ Conference "[2017 Conference on Information Communication Technology and Society](#) (ICTAS)", Durban, Mar'17
- ▶ Three wireless/information/electromagnetics talks at UCT on February 17, 2017: "Simultaneous Information and Power Transfer in Wireless Systems" by Prof Magdalena Salazar Palma, "The Physics and Mathematics of the Signal Propagation Mechanism in Cellular Wireless Communication Systems", and "Electromagnetic Simulations of Complex Devices: Uncertainty Quantification"; Substrate integrated Waveguide – Base for Leaky Wave Antennas", in Pretoria & Cape Town
- ▶ Slow-wave concepts & circuits in RF and mm-waves by Prof P Ferrari, in Pretoria, Cape Town and Stellenbosch
- ▶ IEEE ComSoc Distinguished Lecture "5G and Future Wireless Internet: Challenges and Emerging Technologies" presented by Dr A. Chan, Pretoria
- ▶ Conference "2017 8th International Conference on Mechanical and Intelligent Manufacturing Technologies (ICMIMT)", Cape Town
- ▶ **The UCT IEEE Student Branch hosted a Hackathon on the 20th May 2017**
<http://sites.ieee.org/vtools/> → Vtools Meetings

Sample IEEE and IEEE ZA resources

- ▶ [IEEE Distinguished Lecturership](#) programmes and related initiatives offers access to the technical leaders in various fields (how-to-do guide [available](#))
- ▶ [ECSA membership discounts](#) of up to R1,110 for South African IEEE members
- ▶ IEEE Conference reg. fee discounts (usually covers annual membership)
- ▶ IEEE [EPICS](#) (*Engineering Projects in Community Service*) Projects, with funding up to US\$100k
- ▶ Other means of IEEE [funding](#) opportunities (Seed grants, Women in engineering, [pre-university](#) e.g. **TISP** - Teacher in Service Programme...)
- ▶ [Grants from IEEE Foundation](#) (US\$5k-USD100k)
- ▶ Support for Student branches and Student Branch Chapters (*plus from mother Society*)
- ▶ [Conference organizing support](#) for conferences wishing for support from South African Section
- ▶ Over 400 quality technical [courses](#) including [free tutorials](#) and [IEEE TV](#);
- ▶ [Leadership courses](#) (some may be access restricted to active volunteers);

IEEE Distinguished Lecturer / Speaker and IEEE Region 8 Professional Speaker programmes

► IEEE Distinguished Lecturers

- *Carefully selected engineering professionals who help lead their fields in new technical developments and travel to lecture (430k members → easy to select the best)*
- The DLs can help to promote and advance research on given topic(s), play role of conference keynote speakers (but then need to speak at several other locations) etc.
- Best speakers are selected (typically up to around 10-50 per IEEE Society per year)
- The speakers may be invited to give talks
- The trips to give talks are funded by the IEEE Societies (usually US\$1500 to US\$3000 per international trip)

► IEEE Distinguished Speakers

- Lower cost version (offered by some Societies), when just a portion of a trip needs to be funded

► IEEE Region 8 Professional Speakers

- motivational or non-technical speakers, e.g. around Marketing, Sales, Product Management, Value Proposition, Consulting Skills, Organisation Development, Networking, Startup@ Program – Entrepreneurship – Innovation, Early Career Stress Prevention, Stress and Time Management, Leadership for Business Success, Making Successful Presentations, Writing journal papers, ...

<http://www.ieeer8.org/category/member-activities/professional-activities/speakers>

► Possibility to establish a South African Joint Distinguished Lecturer programme

Ref:

https://www.ieee.org/about/volunteers/tab/distinguished_lecturer_program.html

Sample: a few of over 70 (!) IEEE Distinguished Lecturers for IEEE Power and Energy Society (PES)

Dr. Jessica Bian,
Federal Energy
Regulatory Commission
(FERC), USA

- Finding a Balance: Regulation and Bulk Power System Performance
- Grid Reliability and Its Vital Signs (Tutorial)
- Regulatory Aspects of Implementing Advanced Technology

Salvador AchaDaza,
National Institute for
Adv. Technology,
Mexico

- Modeling Analysis for Modern Electrical Systems
- Power Systems Economic Operation
- Reactive Power and Voltage Control on Electrical Networks
- Real Power & Control on Power System

William Ackerman,
Seminole, FL, USA

- Distribution Automation
- Energy Management Systems
- Power System Operations
- Power System Reliability
- Substation Automation Systems
- Substation Networks and LANs

Luiz Augusto N. Barroso, PSR, Rio de JaneiroRJ, Brazil

- Efficient Practices for Electricity Auctions and Energy Procurement
- Electricity Markets Economics and Deregulation in Fastgrowing (emerging) Markets
- Hydrothermal Scheduling and Coordination in Electricity Markets

IEEE Engineering Projects in Community Service (EPICS) and projects in South Africa

- ▶ **The EPICS in IEEE program connects engineering with community service projects by illustrating four categories of humanitarian efforts.** Each EPICS in IEEE project has a focus in one or multiple of the following listed categories:

- Access & Abilities
- Education & Outreach
- Environment
- Human Services

(https://www.ieee.org/education_careers/education/preuniversity/epics_categories.html)

- ▶ **Sample projects in South Africa**

- UCT Western Cape Breeze (2009), led by Dr Saurabh Sinha
- ...
- Sun in a Bottle (2015) by “Engineers without Borders” (EWB) at the University of Johannesburg UJ Metropolitan Academy (UJMA)

<http://epics.ieee.org/projects/>

IEEE Teacher In-Service Program (TISP) Training Workshops

- ▶ **It is about using IEEE volunteers to help pre-university teachers**
 - **Teachers of technology, mathematics, and science**
- ▶ The basic idea: present teachers with lesson plans that they can use to enhance student understanding of Engineering and Engineering Design
- ▶ Alignment to National Curriculum Statements

- ▶ Past Teacher In-Service Program (TISP) Training Workshops in R8
 - **Capetown, South Africa - August 2006**
 - https://www.ieee.org/education_careers/education/preuniversity/southafricatisp.html
 - Lusaka, Zambia - September 2010
 - Porto, Portugal - November 2010
 - Stirling, Scotland - March 2011
 - Al-Khobar, Saudi Arabia - April 2011
 - Dubai, United Arab Emirates - June 2014
 - Nairobi, Kenya - October 2014
 - Athens, Greece - December 2015

- ▶ https://www.ieee.org/education_careers/education/preuniversity/tispt/tispworkshops.html , https://www.ieee.org/education_careers/education/preuniversity/southafricatisp.html

IEEE:

Current common grounds for promoting EEngineering

- ▶ Personal level
 - Awards
 - Discounts on membership (R1.1k in ECSA ~ *cost of membership!*; 10% in SAIEEE)
 - Discounts for conference fees (*often eliminates full cost of membership!*)
- ▶ Organizational level
 - Events
- ▶ Co-organizing & supporting conferences and *professional* and *technical* events
 - Sponsorship: *technical* (logistics, quality, ...) vs. *financial*
 - *e.g. Radar, Africon, ...*
- ▶ Shared technical events
 - IEEE Distinguished Lecturer based and beyond

What would YOU like to achieve with IEEE?

Questions?

Next ... About IEEE Senior Membership and related processes



2017 Outstanding Section Membership
Recruitment and Retention Performance
South Africa Section

IEEE Senior Membership

Presentation for IEEE Senior Membership Elevation workshop
at the University of the Witwatersrand (Wits)

by Dr Albert Lysko (alysko@csir.co.za)

IEEE South Africa Chair

2018-05-25

IEEE member grades

- ▶ Student member
- ▶ Graduate student member
- ▶ Member, Life member,
 - Associate member
- ▶ **Senior member, Life Senior member** ~ 10%
- ▶ Fellow, Life Fellow member ~ 2% (0.4% in South Africa)

What is Senior Membership?

- ▶ Senior member (SM) is the highest grade for which IEEE members can apply
- ▶ To be eligible for application or nomination, candidates must:
 - Be engineers, scientists, educators, technical executives, or originators in IEEE-designated fields
 - Have experience reflecting professional maturity
 - Have been in professional practice for at least ten years (with some credit for certain degrees)
 - Show significant performance over a period of at least five of their years in professional practice
- ▶ *Prospective members who would like to apply directly for Senior Member grade must first join IEEE and then submit the Senior Member application form. An IEEE Member Number is required on the Senior Member application. The Senior Member portal may not be accessible for 24 hours if you have joined or renewed your IEEE membership. There is no additional fee to apply for Senior Member grade.*

Senior Membership (SM) benefits

- ▶ **Recognition:** The professional recognition of your peers for technical and professional excellence.
- ▶ **Senior Member plaque:** All newly elevated Senior members receive an engraved Senior Member plaque to be proudly displayed for colleagues, clients, and employers to see. The plaque, made of fine wood with bronze engraving, is sent within six to eight weeks after elevation.
- ▶ **US\$25 coupon:** IEEE will recognize all newly elevated Senior members with a coupon worth up to US\$25. This coupon can be used to join one new IEEE Society. The coupon expires on 31 December of the year in which it is received.
- ▶ **Letter of commendation:** A letter of commendation can be sent to your employer on the achievement of Senior Member grade upon the request of the newly elected Senior member.
- ▶ **Announcements:** Announcement of elevation can be made upon request to your Section/Society in their local newsletters, newspapers, and notices.
- ▶ **Leadership Eligibility:** Senior members are eligible to hold executive IEEE volunteer positions.
- ▶ **Ability to refer other candidates and be on Review Panel:** Senior members can serve as a reference for other applicants for senior membership. Senior members are invited to be on the panel to review Senior member applications.
- ▶ **US\$25 referral coupon:** Newly elevated Senior members are encouraged to find the next innovators of tomorrow and invite them to join IEEE. Invite them to join and the new IEEE member will receive US\$25 off their first year of membership.

IEEE Senior Membership in South Africa

South Africa Section ~ 1100 members (2017), including

- 109 Senior members and 7 Life Senior members (~10%)
- 2 Fellows and 2 Life Fellows (~0.4%)
- 1 Honorary member

Requirements for Senior Member Upgrade

- ▶ Practice in profession for at least 10 years
 - Academic time resulting in degrees count toward professional practice
- ▶ Five years of significant performance
 - Does NOT require special awards, patents, or other extremely sophisticated technical accomplishments
- ▶ References
 - **three required for self-nomination** OR
 - Nomination from Section plus Two written references from other Senior Members or Fellows

Interpreting IEEE SM Requirements

IEEE Bylaw I-104.3 sets forth the criteria for elevation to Senior Member grade as follows:

- ▶ A candidate shall be an engineer, scientist, educator, technical executive or originator in IEEE-designated fields
 - Engineering, Computer sciences and information technology, Physical sciences, Biological and medical sciences, Mathematics, Technical communications, education, management, law and policy
- ▶ Candidates shall have been in professional practice for at least **ten** years
 - Time working and attending school at the same time will be counted either as work experience OR education experience. Your educational experience is credited toward that time as follows:
 - 3 years for a baccalaureate degree in an IEEE-designated field
 - 4 years if you hold a baccalaureate and masters degree
 - 5 years if you hold a doctorate
 - **Can choose ignoring the degree to get more years!**
- ▶ Candidates shall have shown significant performance over a period of at least **five** of those years
- ▶ *In addition, candidates for Senior Member grade **must supply three references** for applications/self-nominations (or two for nominations) from current IEEE members holding the grade of Fellow, Senior Member, or Honorary Member*

Tips re “professional practice for ≥ 10 y”

► Provide accurate info

- Position name
- Organization name
- Dates for start/end of study and employments (accurate to at least a month) and duration (in years and months)
- Example: Junior Engineer, CSIR, Apr 1998 – Jun 2002

► May need to dropping some of academic degrees

- Review panel members use US system, which normally assumes you did not do any real work prior to finishing your degree. Thus, sometimes need to drop a degree to use the years of experience you have!
- Example: Masters in EE, U. of Pretoria, South Africa, Apr 2012 → 4y
~~PhD student, U. of Pretoria, South Africa, May 2012 – May 2015~~
Junior Engineer, CSIR, May 2012 – May 2015 (3y) → 3 years
Engineer, CSIR, May 2015 – May 2017 (2y) → 2 years
Senior Engineer, CSIR, May 2017 – May 2018 (1y) → 1 year

Excl. PhD, the total is $4 + 3 + 2 + 1 = 10$ years – OK.

With PhD, the total would have been $5 + 2 + 1 = 8$ years – NOT OK.

Five Years of Significant Performance

- ▶ Frequent mistake of assuming that "significant performance" requires special awards, patents, or other extremely sophisticated technical accomplishments, but this is not the case. The following are **also indications of significant performance**:
 - **Substantial engineering responsibility or achievement** (e.g. team leader, task supervisor, engineer in charge of a program or project)
 - **Engineer or scientist performing research with some measure of success**, e.g. Publication of engineering or scientific papers, books, or inventions
 - **Technical direction, or management** of important scientific or engineering work, with evidence of accomplishment
 - **Recognized contributions to the welfare of the scientific or engineering profession**
 - **Development or furtherance of important scientific or engineering courses** that fall within the IEEE designated fields of interest
 - *Contributions equivalent to those of the above in such areas as technical editing, patent prosecution, or patent law, provided these contributions serve to advance progress substantially in IEEE designated fields*
- ▶ Significant performance that would serve to qualify an individual for elevation to Senior member need not have occurred in the years immediately prior to the application. → Life and Retired members are eligible for elevation

“Significant Performance” and ... Career Ladders... KRAs etc.

- ▶ Let's see if you can apply the same principles when describing your achievements in ... the Career Ladder and KRAs!

Tips re expressing Significant Performance

- ▶ Quantify
 - 10 Masters and 5 PhDs graduated over 3 years
 - 10 x papers over 5 years in ISI journals with high impact
- ▶ Specify
 - Budget \$ responsible for, number of people supervised, size of project managed, etc.
 - Product “X” took **3 years** to develop and has been **licensed** to a local company
 - Novel course developed **not present in other universities in South Africa**
 - Promoted to Product Manager in 2015
- ▶ Compare to peers (at the same university, or nationally, or internationally)
 - ... , as compared to the average of 2 Masters students per year at my university

NB! Normally **every year** of the 5 “significant performance” years must have the significant performance

- ▶ For example, who would you choose? Someone who says he ...
 - has responsibility for budget oversight **OR**
 - someone who says he plans and oversees a \$5 million revenue line and a \$2 million expense budget, and that he produces monthly budget reports and adjusts monthly forecasts.

More tips re wording Significant Performance

- ▶ Think very carefully about **choices you are making about marketing yourself**. For example:
 - Keep things current; no more than 15-20 years of experience is relevant, include all patents
 - Publications; list those of significant importance, listing top 10 papers if applicable
 - Include professional development activities and volunteerism **ONLY** if they contribute to your professional skills
 - No company-specific jargon, abbreviations, etc. Use only industry-standard acronyms.

Examples of Successful Applications

- ▶ **Case 1** An applicant/nominee has a bachelor's degree and 7 additional years of professional experience beyond graduation, in an area encompassed by one of IEEE's technical Societies, which meets the requirement of ten years of professional experience. **Significant performance can be demonstrated by describing substantial job responsibilities (e.g., team leader) for a period of at least five years.** *Result: All criteria are satisfied and the application is approved.*
- ▶ **Case 2** Same as Case 1, except that the applicant/nominee worked in industry for one year following graduation with the bachelor's degree and then was a full-time graduate student for two years, obtaining a master's degree. The applicant demonstrates significant performance **during another five years in industry.** *Result: Approved.*
- ▶ **Case 3** An applicant/nominee has bachelor, master's, and doctoral degrees in an IEEE-designated field. Five years of significant performance in academia, industry, or government beyond the doctoral degree are demonstrated (e.g., a faculty member with **five years beyond the doctorate AND promotion to associate professor**). *Result: Approved.*
- ▶ **Case 4** An applicant/nominee has **no degree** and has worked for many years in the electric industry as a **technician**. Ten years ago, he accepted an **engineering-level position and continued with it since that time**. Included was a period of at least **five years with demonstrated significant performance.** *Result: Approved.*
- ▶ **Case 5** An applicant/nominee retired some years ago and has not been active recently in the profession. **Prior to retirement**, the applicant/nominee had at least ten years of professional experience, including **five years of significant performance.** *Result: Approved.*

Today: Format of Assistance, Expectations

- ▶ Member spends 30 to 45 minutes completing the application process
- ▶ SMs (Advisors) coach EVERY candidate in filling out an application - **Significant Performance**
- ▶ Normally, no references or reference writer names are given at event - Leave that section of the application blank
- ▶ Event tracking spreadsheet is filled out
 - Contains contact info and IEEE member #
 - (Electronic) copy of resume and SM application are gathered BEFORE applicant leaves

Post Event

- ▶ Applicants assigned to SM reference writers
- ▶ Distribute resume and application to reference writer - encourage writers to contact applicants for any clarification

After everything is submitted:

- ▶ IEEE A&A Panels meet 5-6 times per year
- ▶ Check status of application
 - <https://www.ieee.org/membership/senior/status.html>
- ▶ Newly elevated Senior members
 - <https://www.ieee.org/membership/senior/new-senior-members.html>
- ▶ Complete Employer Notification Form
 - <https://www.ieee.org/membership/senior/notify.html>

On Reference Generation

- ▶ Time to write reference ~ 20 to 45 minutes
- ▶ Can be any format, Email, Document, Webpage
 - needs to contains all the information required
- ▶ *Writer does not need to know the applicant personally outside of IEEE*
- ▶ Focus writing effort on significant performance section of application
- ▶ Provide recommendation for upgrade
- ▶ Can be submitted to senior-member@ieee.org or online (when requested by Applicant or Nominator)

Questions

- ▶ How to get future information - contact

Dr Albert Lysko

lysko@ieee.org

012 841 4609 at CSIR

THANK YOU

www.ieee.org.za

Extra slides

IEEE Publication Recommender

The screenshot shows the IEEE Publication Recommender web application. The browser address bar displays "publication-recommender.ieee.org/pubsearch". The page title is "IEEE Publication Recommender" with the tagline "Find the best match for your scholarly article".

Choose a search type and let Publication Recommender do the work!

- ☐ Both Periodicals and Conferences
- ☐ Periodicals only
- ☐ Conferences only

☒ Enter keywords, key phrases, or article title

Keywords you entered: TVWS

☐ Extract keywords from your article

Enter your abstract or drag your article file here (PDF, DOC, DOCX, TEX).

+ ADD YOUR FILE

Narrow by date: (Optional) I would like to publish before: []

Update Recommendation

Results based on your keywords [Learn more](#)

DOWNLOAD RESULTS EMAIL RESULTS

Result current as of: 2017-Dec-11 04:00:03Z

▼ **Periodicals:** (12 results) Sort By: **Keyword Match (relevance)**

Title	Open Access Availability	Impact Factor	Submission to Publication Time in Xplore
Cognitive Communications and Networking, IEEE Transactions on	Open Access Available	Not yet available	31.3 Weeks
Selected Areas in Communications, IEEE Journal on	Open Access Available	8.085	25.3 Weeks
Broadcasting, IEEE Transactions on	Open Access Available	3.765	28.8 Weeks
Wireless Communications, IEEE	No Open Access	8.972	Not yet available
Access. IEEE	Open Access Only	3.244	5.5 Weeks

Active IEEE Membe....xls Active IEEE Memb....pdf Untitled Analysis.pdf 5002874774-2017....pdf Show all

What is IEEE-Eta Kappa Nu (IEEE-HKN)?

- IEEE-HKN is still dedicated to encouraging and recognizing excellence in the IEEE-designated fields
- Founded in 1904 by Maurice L. Carr at the University of Illinois, Eta Kappa Nu (HKN) was originally established to help electrical engineering graduates
- The Greek letters HKN were chosen from the 1st, 4th and last letter of the Greek word for electron.
- In 1927, the HKN Shield and coat-of-arms were adopted, incorporating Wheatstone bridge (and its ability to provide extremely accurate measurements)



https://www.ieee.org/about/today/at_a_glance.html and <http://hkn.ieee.org/>

Re Nominations

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Senior Member Application Form, Page 2 of 5

TO BE FILLED IN IF THE APPLICANT IS BEING NOMINATED

- To qualify for the *Nominate A Senior Member Initiative*, the following fields have to be filled in completely including the entity to be credited for the nomination.
- If the **NOMINATOR** is a Senior Member or Fellow, this serves as one reference and the nominator does not need to complete a reference form. It is, however, to the benefit of the applicant if a reference form is received from the nominator as well.
- A nominating entity **MUST BE** a **SECTION** or **SOCIETY** AND **NOT** a Chapter or Council. If a Chapter is entered as the nominating entity, the Section to which the Chapter belongs will be given the credit.
- A nomination can also be submitted without identifying a nominating entity.

Nominator's Name: Nominator's Member #:

Membership Grade: Email address:

+ Nominating Section or Society:

sh (U.S.) 160%

For this workshop participants, the Section can do the Nomination

Education + Professional background sections

Educational information
+
Present occupation
+
Professional experience
=
Remember the tips!

EDUCATIONAL INFORMATION

FIRST PROFESSIONAL DEGREE

School: City & Country:
Start Date: Major Course:
Degree Received: Date Graduated:

MASTERS

School: City & Country:
Start Date: Major Course:
Degree Received: Date Graduated:

DOCTORATE/Ph.D.

School: City & Country:
Start Date: Major Course:
Degree Received: Date Graduated:

PRESENT OCCUPATION

Title or Position:
Company Name:
Address:
City: State/Province:
Postal Code: Country:
Phone: Fax:

PROFESSIONAL EXPERIENCE

- Please list ten years or more of professional experience, which can include up to a maximum of five years for educational experience.
- We encourage you to include your resume with your application. You may send your resume as an email attachment to senior-member@ieee.org or you may fax your resume to +1 732 562 6528 to the attention of Denise Howard.
- Without a resume, there may not be sufficient information for the reviewing panel to make a favorable decision which could result in your application being denied or deferred. If sending resume as an email attachment, please indicate that it is for a Senior Member Elevation and that you have submitted your application form separately.

Significant Performance section of the form

SIGNIFICANT PERFORMANCE

Describe briefly achievements that demonstrate [significant performance](#) over a period of at least five years.

Please provide a list of achievements including dates (required)

Normally, significant performance focuses on professional experience during the period following educational experience.

References section of the form

REFERENCES

- Give names and member numbers, if known, of **three Senior Members or Fellows** who will serve as your references.
- **You** are responsible for requesting these references. Each referee must send a brief note of recommendation directly to IEEE, preferably using the online [Senior Member Reference form](#).
- If you have difficulty in locating Senior Members or Fellows to serve as the required references, contact your Section/Chapter Chair for assistance in finding qualified references. For assistance in contacting your Section/Chapter Chair, email Denise Howard at senior-member@ieee.org.
- While only three references are required, applicants wishing to submit four references may do so.
- **If the applicant is being nominated by a Senior Member or Fellow, only two other references need be provided.**

Reference #1	<input type="text"/>	Reference Member #	<input type="text"/>
Reference #2	<input type="text"/>	Reference Member #	<input type="text"/>
Reference #3	<input type="text"/>	Reference Member #	<input type="text"/>

For this workshop participants, the Section can provide References