

Prof AJ Han Vinck

The following researcher is currently actively cooperating to pursue the same research goals as those of the Centre and sharing funding and resources for joint investigations.

INTERNATIONAL

Name	Organization	Qualification	Nature of cooperation
1. Prof AJ Vinck	University of Duisburg-Essen, Germany	Fellow IEEE. Former President IEEE Information Society. Recipient of 2006 IEEE International Symposium on Power Line Communications Achievement Award.	Cooperation agreement and annual exchange visits since 1991. NRF ISL funding, German DAAD, DFG and BmBf funding.

Teaching

1990-2013	20 PHD Students Courses on Digital Systems, Information Theory, Channel Coding and Cryptography
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Award (South Africa)

2008	SAIEE annual award for the best paper published in the SAIEE Africa Research Journal in the year 2008.
2012:	Best Student Paper at the IEEE International Symposium on Information Theory in Beijing, China (with student Thokozani Shongwe.)

Professional (South Africa)

2010 – 2013 Visiting professor at the University of Johannesburg. Colloquium presented 12.10.2012

2010 – 2012 Visiting Professor University of Johannesburg, South Africa Colloquium presented

Collaboration

SA-Germany

1991

Prof. HC Ferreira

1992

Francis Swarts

1994

Prof. HC Ferreira 3 MM

1997

Prof. HC Ferreira , Stefan Coetzee

1999

Prof. HC Ferreira

2000

Prof. HC Ferreira

2001

Christo Kruger , Prof. HC Ferreira

2003

Prof. WA Clarke, Prof. HC Ferreira

2004

Jaco Versfeld , Prof. HC Ferreira

2005	Dr K Ouahada, A. Snyders, Prof. HC Ferreira
2006	Prof. HC Ferreira
2007	Prof. HC Ferreira, A. Snyders
2008	A. Emleh, Prof. Hendrik Ferreira, A McDonald, J. Versfeld, A. De Beer
2009	A. Emleh, T. Shongwe, P. Paluncic
2010	R Heymann
2011	T. Shongwe
2012	T. Shongwe T. Sanya , J. Versveld; K. Ouahada, R. & C. Heyman , A. Emleh
2013	T. Shongwe T. Sanya , K. Ouahada, A. Emleh
2014	A. Emleh, HC Ferreira, K Ouahada

Major Conference Organizer (South Africa)

2013	Co-chair International Symposium on Power Line Communications and its Applications, ISPLC, Johannesburg, South Africa
1999	Program Chairman for the IEEE IT workshop in Kruger Park, South Africa

International Research Project Leader / Founder

2013	Powerline Communications for the Smart Grid, BMBF and NRF year of Science project University of Johannesburg and University of Duisburg, Essen
2008-2009	BMBF project entitled " Coding and Modulation for Powerline Communication" with the University of Johannesburg, South Africa

Journals, Conferences and Books in collaboration with authors from University of Johannesburg

1. ASJ Helberg, WA Clarke, HC Ferreira and AJ Han Vinck, "A Class of DC-Free Synchronization Error Correcting Codes", IEEE Transactions on Magnetics, Vol. MAG-29, no. 6, November 1993, pp. 4048-4049
2. F Swarts, AJ Han Vinck and HC Ferreira, "Undetected error probability of linear block codes on channels with memory," Proceedings of the IEEE 1993 International Symposium on Information Theory, San Antonio, Texas, USA, January 17-22, 1993, p 162
3. ASJ Helberg, HC Ferreira, WA Clarke and AJ Han Vinck, "On binary synchronization error correcting codes," Proceedings of the IEEE 1993 International Symposium on Information Theory, San Antonio, Texas, USA, January 17-22, 1993, p 299
4. HC Ferreira, ASJ Helberg, WA Clarke and AJ Han Vinck, "Insertion/deletion correcting codes: Hamming Structure and Spectral Shaping Subcodes," Proceedings of the Third Benelux-Japan Workshop on Coding and Information Theory, Essen, Germany, August 30, 1993, p. 14

5. F Swarts, HC Ferreira, AJ Han Vinck and I Broere, "On linear block codes, graphs and weight distributions," Proceedings of the IEEE COMSIG '95 Conference, Pretoria, South Africa, 16th November 1995, p. 103-106
6. HC Ferreira, HM Grové, O Hooijen and AJ Han Vinck, "Power line communications: an overview," Proceedings of the 1996 IEEE Africon Conference, Stellenbosch, South Africa, September 24-27, 1996, Vol. II, pp. 558-563
7. A Kuznetsov, F Swarts, AJ Han Vinck and HC Ferreira, "On the Undetected Error Probability of Linear Block Codes on Channels with Memory," IEEE Transactions on Information Theory, Vol. 42, no.1, January 1996, pp. 303-309
8. HC Ferreira, KAS Abdel-Ghaffar and AJ Han Vinck, "On insertion/deletion correction," Proceedings of the 1996 IEEE International Symposium on Information Theory and Its Applications, Victoria, BC, Canada, September 17-20, 1996, Vol. I, pp. 47-50
9. HC Ferreira, WA Clarke, ASJ Helberg, KAS Abdel-Ghaffar and AJ Han Vinck, "Insertion/deletion correction with spectral nulls", IEEE Transactions on Information Theory, Vol. 43, no.2, March 1997, pp. 722-732
10. CS Coetzee, P Göber, AJ Han Vinck and HC Ferreira, "A new approach to efficient asynchronous multiple access communication," Proceedings of the SATNAC98 Conference, September 7-11, 1998, Cape Town, South Africa, pp. 232-235
11. HC Ferreira and AJ Han Vinck, "Coding schemes for correcting long bursts of insertions, deletions and reversal errors," Proceedings of the 1998 Information Theory Workshop, February 8-11, 1998, San Diego, CA, USA, p. 83
12. HC Ferreira and AJ Vinck, "On correcting bursts of insertions, deletions and reversal errors," Proceedings of the IEEE International Symposium on Information Theory, August 16-21, 1998, Cambridge, MA, USA, p. 195
13. Power Line Communication, Encyclopaedia of Electrical and Electronics Engineering, Wiley, New York, Edited by John Webster, pp. 706-716, 1999, HC Ferreira, H. Grove, O. Hooijen and AJ Han Vinck
14. HC Ferreira and AJ Han Vinck, "Interference cancellation with permutation trellis codes," Proceedings of the IEEE Vehicular Technology Conference Fall 2000, September 24-28, 2000, Boston, MA, USA, pp. 4.5.1.3.1 - B 4.5.1.3.7
15. AJ Han Vinck and HC Ferreira, "Permutation trellis codes," Proceedings of the IEEE International Symposium on Information Theory, June 24-29, 2001, Washington DC, USA, p. 279.
16. HC Ferreira, I de Beer and AJ Han Vinck, "Distance preserving mappings onto convolutional codes revisited," IEEE Information Theory Workshop, Breisach, Germany, June 26-29, 2002, pp. 23-26.
17. AJ Han Vinck, Alina Hasbi, HC Ferreira, and TG Swart, "On Coded M-Ary Frequency Shift Keying," Proceedings of the 8th International Symposium on Power-Line Communications and its Applications, March 31 - April 2, 2004, Zaragoza, Spain, pp. 175-179

18. HC Ferreira, AJ Han Vinck, TG Swart and I de Beer, "Permutation Trellis Codes," IEEE Transactions on Communications, Vol. 53, no. 11, November 2005, pp. 1782-1789
19. DJJ Versfeld, HC Ferreira and AJH Vinck, "Reed-Solomon Coding to Enhance the Reliability of M-FSK in a Power Line Environment," Proceedings of the 2005 International Symposium on Power Line Communications and its Applications, Vancouver, Canada, April 6-8, 2005, pp. 100-104
20. K Ouahada, HC Ferreira, L Cheng and AJH Vinck, "On Combined Spectral Shaping Coding and M-FSK Modulation for Power Line Communications," Proceedings of the 2005 International Symposium on Power Line Communications and its Applications, Vancouver, Canada, April 6-8, 2005, pp. 351- 355
21. K Ouahada, HC Ferreira, AJH Vinck and DJJ Versfeld, "Combined Non-binary Codes and M-FSK Modulation for Power Line Communications," Proceedings of the 2006 IEEE International Symposium on Power Line Communications and its Applications, Orlando, FL, USA, March 26-29, 2006, pp. 110-115
22. K Ouahada, HC Ferreira, AJH Vinck and WA Clarke, "Combined Higher Order Spectral Nulls Codes and OFDM Modulation for Power Line Communications," Proceedings of the 2006 IEEE International Symposium on Power Line Communications and its Applications, Orlando, FL, USA, March 26-29, 2006, pp. 122-127
23. K Ouahada, HC Ferreira, AJH Vinck, AJ Snyders and TG Swart, "Cancellation and Error Correction for Narrow Band Interference with Spectral Nulls Codes and OFDM Modulation" Proceedings of the IEEE Africon 2007 Conference, Windhoek, Namibia, September 26-28, 2007, 6 pages, published on CD
24. K Ouahada, HC Ferreira, AJ Snyders, AJH Vinck and TG Swart, "Error Correction of Frequency-Selective Fading Channels with Spectral Nulls Codes," Proceedings of the IEEE Africon 2007 Conference, Windhoek, Namibia, September 26-28, 2007, 6 pages, published on CD
25. TG Swart, AJH Vinck and HC Ferreira, "Convolutional Code Search for Good Permutation Trellis Codes using M-Ary FSK," Proceedings of the IEEE International Symposium on Power Line Communications, Pisa, Italy, March 26-28, 2007, pp. 441-446
26. K Ouahada, HC Ferreira, AJ Han Vinck, AJ Snyders and TG Swart, "Combined Spectral Shaping Codes and OFDM Modulation for Narrowband Interference Channels," SAIEE Research in Africa Journal, Vol. 99, no. 1 March 2008, pp. 11-17
27. HC Ferreira, HM Grove, O Hooijen and AJ Han Vinck, "Power Line Communication," Wiley Encyclopaedia of Electrical and Electronics Engineering, JG Webster Editor, Vol. 16, John Wiley & Sons, New York, 1999, pp. 706-716
28. DJJ Versfeld, AJH Vinck, JN Ridley and HC Ferreira, "Constructing Coset Codes with Optimal Same-Symbol Weight for Detecting Narrowband Interference in M-FSK Systems," IEEE Transactions on Information Theory, Vol. 56, no. 12, December 2010, pp. 6347-6353
29. AJ Snyders, HC Ferreira and AJH Vinck, "Impact of Synchronous Cyclic Impulsive Noise on Powerline Signal-to-Noise Ratios," Proceedings of the IEEE AWSITC, June 1-4 2010, South Africa, Kruger National Park, p. 26

30. DJJ Versfeld, AJ Han Vinck, JN Ridley and HC Ferreira, "Constructing Coset Codes with Optimal Same-Symbol Weight for Detecting Narrow-band Interference in M-FSK Systems," "Proceedings of the IEEE AWSITC, June 1-4 2010, South Africa, Kruger National Park, p. 33
31. T Shongwe, VN Paplaya, AJ Vinck and HC Ferreira, "Narrowband interference model for OFDM for Powerline Communications," submitted to Journal for Electrical and Computer Engineering. 2012
32. T. Shongwe, VN Papilaya and AJ Han Vinck, "Narrow-band Interference Model for OFDM Systems for Power-line Communications," 6th Workshop on Power Line Communications (WSPLC 12), Rome, Italy, September 20-21, 2012, presented
33. T Shongwe and AJ Han Vinck, "Reed-Solomon Code Symbol Avoidance," submitted 2012 to SAIEE Africa Research Journal
34. T Shongwe and AJ Han Vinck, "Interleaving and Nulling to Combat Narrow-band Interference in PLC Standard Technologies PLC G3 and PRIME," IEEE ISPLC 2013, IEEE 17th International Symposium on Power Line Communications and Its Applications, Johannesburg, South Africa, 24 – 27 March, 2013, ISBN 978-1-4673-6016-6/13, p. 258-262
35. T Lukusa, K. Ouahada, R. Ndjiongue, H. C. Ferreira and A. J. H. Vinck, "Hardware Implementation of Frequency Mappings for Power Line Communications," Presented at IEEE ISPLC 2013, Recent Results, March 24-27, 2013. Johannesburg, South Africa
36. HC Ferreira, HM Grove, O Hooijen and AJ Han Vinck, "Power Line Communication," Wiley Encyclopaedia of Electrical and Electronics Engineering, JG Webster Editor, Vol. 16, John Wiley & Sons, New York, 1999, pp. 706-716