



CURRICULUM VITAE: JOHANNES LODEWIKUS VAN NIEKERK

Institution	: Stellenbosch University
Profession	: Mechanical Engineer and Professor
Specialisation	: Renewable Energy, Solar and Ocean
Position in Institution	: Professor (Mechanical Engineer) and Director (CRSES)
Year appointed	: January 2000 at Stellenbosch University, Director since January 2007
Nationality	: South African
Language Proficiency	: English, Afrikaans, some German

EDUCATION AND PROFESSIONAL STATUS

Qualification	Institution	Year
BEng (Mechanical), <i>cum laude</i>	Stellenbosch University, South Africa	1986
MEng (Mechanical), <i>cum laude</i>	University of Pretoria, South Africa	1989
PhD (Mechanical Engineering)	University of California at Berkeley	1994

Professional Registration: Registered as a Professional Mechanical Engineer (PrEng) with the Engineering Council of South Africa since 1994

Fellow of:
 South African Academy of Engineering (since 2012)
 South African Institution of Mechanical Engineering (since 2010)
 Southern African Acoustics Institute (since 2011)

Member of:
 American Society of Mechanical Engineers (since 1990)
 Sustainable Energy Society of South Africa (since 2007)
 International Solar Energy Society (since 2008)

Board Member of:
 International Solar Energy Society (2012 – present)
 South African Institution of Mechanical Engineering (2006-2010, and 2014-)
 Southern African Acoustics Institute (1995-1999)
 GreenCape, a Sector Development Agency established by the Western Cape Provincial Government and the City of Cape Town
 The Technology Olympiad of the SAIMEchE
 GeoSUN Africa (Pty) Ltd
 Sound Research Laboratories – South Africa (Pty) Ltd

EMPLOYMENT AND EXPERIENCE OVERVIEW

Prof Wikus van Niekerk is a Professor in the Department of Mechanical and Mechatronic Engineering and Director of the Centre for Renewable and Sustainable Energy Studies at Stellenbosch University. He is registered as a Professional Engineer with the Engineering Council of South Africa, and was evaluated in the past by the NRF as a C2, internationally recognised, researcher. He is regularly consulted by industry on a variety of areas including renewable energy systems and technology; solar, wind and ocean energy; and energy policy and research strategy.

He completed his PhD on the active control of transient noise transmission at the University of California at Berkeley, working on a project for Mazda Corp. After holding the Sasol Chair in Vehicle Engineering at the University of Pretoria he moved to Stellenbosch University in 2000. At Stellenbosch he has been Head of the Mechanics Division, Chair of the Department of Mechanical Engineering and Director of the Institute for Thermodynamics and Mechanics. He is currently the Director of the Centre for Renewable and Sustainable Energy Studies and plays a leading role to establish research, education and training programmes in renewable energy and influence funding and policy priorities on the national level. He has a keen interest in solar and ocean energy and is investigating the exploitation of wave energy along the southwest coast and ocean current energy of the east coast of South Africa.

Prof Van Niekerk serves on the boards of various organisations and companies and founded GeoSUN Africa and SRL-SA as spin-out commercial ventures from his research and consulting activities. He has received numerous awards the years, the most recent being the SANE Energy Award for his contribution to renewable energy in South Africa (particularly in the field of solar energy).



Recent, Selected Project Experience:

Year	Description, client
2012-2015	Green Economy Research Support for the KwaZulu/Natal Provincial Government
2011-2015	Soltrain I&II: Training, testing and promoting of solar water heating in South Africa, Austrian Development Agency and AEE-Intec
2011-2014	The South African Universities Radiometric Network (SAURAN) where more than 12 solar resource measurement stations were installed throughout Southern Africa sponsored by the German Gesellschaft für Internationale Zusammenarbeit (GIZ), US-AID and Eskom.
2010-2014	Solar resource measurement and assessment projects for various clients, Sasol, Eskom, Exarro, AfriDevo, SolAfrica
2013	Review of ocean energy resource data, SANEDI
2010	Development of a business plan for a Solar Energy Centre of Competence, CSIR and DST
2009-2010	Techno-economic studies of wave energy and ocean current converter technology, Sea Renewable Energy
2008	Evaluation of solar energy for the MeerKAT radio-telescope, SA SKA Project Office

PUBLICATIONS (A full publications list is available on request)

Papers Published in Conference Proceedings

- Joubert, J.R. and van Niekerk, J.L., "Recent developments in wave energy along the coast of southern Africa," *Proceedings of the 8th European Wave and Tidal Energy Conference*, Uppsala, Sweden, 2009.
- Ackerman, P.H., Von Backström, T.W., and Van Niekerk, J.L. "Numerical Simulation of a Wave Energy Conversion," *Proceedings of the 9th European Wave and Tidal Energy Conference*, Southampton, England, 2011.
- Meyer, A.J. and Van Niekerk, J.L., "Roadmap for the Deployment of Concentrating Solar Power in South Africa," *Proceedings of the SolarPACES Conference, Granada*, Spain, 20-23 September 2011.
- Joubert, J.R., and Van Niekerk, J.L. "Design of a Novel Breakwater Wave Energy Converter for the South African Coast," *Proceedings of the 10th European Wave and Tidal Energy Conference*, Aalborg, Denmark, 2013. 10th
- Meyer, A.J. and Van Niekerk, J.L., "Towards a Verified DNI Map for South Africa," *Proceedings of the SolarPACES Conference*, Las Vegas, USA, 17-20 September 2013.
- Kritzinger, K and Van Niekerk, J.L. "Unlocking the rooftop PV market in South Africa", *Proceedings of the 3rd South African Solar Energy Conference*, Port Elizabeth, South Africa, 2014
- Van der Walt, J. and Van Niekerk, J.L. "SolarTurtle for rural electrification in South Africa", *Proceedings of the 3rd South African Solar Energy Conference*, Port Elizabeth, South Africa, 2014
- Tora, E. and Van Niekerk, J.L. "Different designs of nanofluids-based flat-plate solar collectors", *Proceedings of the 3rd South African Solar Energy Conference*, Port Elizabeth, South Africa, 2014

Articles in Refereed Journals

- Giliomee, C.L., Els, P.S. and van Niekerk, J.L. "Anelastic model of a twin accumulator hydro-pneumatic suspension system," *R&D Journal*, July 2005, Vol. 21, No. 2, pp 11-17, July 2005.
- Wade, A.D. and van Niekerk, J.L. "Investigation into road rumble in a light utility vehicle," *R&D Journal*, The South African Institution of Mechanical Engineering, November 2005, Vol. 21, No. 3, pp 8-13, July 2005.
- Gunaselvam, J. and van Niekerk, J.L. "Seat selection guidelines to reduce whole body vibration exposure levels in the SA mining industry," *The Journal of the South African Institute of Mining and Metallurgy*, November 2005, Vol. 105, No. 10, pp. 675-686, November 2005.
- Van der Westhuizen, A. and van Niekerk, J.L., "Verification of seat effective amplitude transmissibility (SEAT) value as a reliable metric to predict dynamic seat comfort", *Journal of Sound and Vibration*, Vol. 295, Issue 3-5, pp. 1060-1075, 22 August 2006.
- Von Gossler, J. and van Niekerk, J.L., "Sound quality metrics to access road noise in light commercial vehicles," *R&D Journal*, The South African Institution of Mechanical Engineering, Vol. 24, No. 1, pp. 19-25, March 2008.
- Holtz, M. and van Niekerk, J.L., "Modelling and design of a novel air-spring for suspension seats," *Journal of Sound and Vibration*, Vol. 329, No. 21, pp. 4354-4366, October 2010.
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