

UNIVERSITY OF PRETORIA

CURRICULUM VITAE / RESUME OF PROF JP (JOSUA) MEYER

1. BIOGRAPHICAL SKETCH

1.1 GENERAL INFORMATION							
Surname	MEYER						
First names	Josua						
Citizenship	South Africa	Title	Prof	Female	<input type="checkbox"/>	Male	<input checked="" type="checkbox"/>
Place of birth	Pretoria						
Department	Mechanical and Aeronautical Engineering	Position	Head of the Department of Mechanical and Aeronautical Engineering and Chair of the School of Engineering				
Direct Telephone	(012) 420 2590	Fax	(012) 362 5124				
E-mail	jmeyer@up.ac.za						
Date of appointment	1 July 2002	Permanent full-time	<input checked="" type="checkbox"/>	Temporary full-time	<input type="checkbox"/>		

1.2 ACADEMIC QUALIFICATIONS OBTAINED				
Degree/ Diploma	Field of study	Higher education institution	Year	Distinctions
BEng	Mechanical Engineering	University of Pretoria	1984	Cum Laude
MEng	Mechanical Engineering	University of Pretoria	1986	Cum Laude
PhD	Mechanical Engineering	University of Pretoria	1988	Not applicable

1.3 PROFESSIONAL REGISTRATION			
PrEng	Professional registration as professional engineer (880217)	ECSA (Engineering Council of South Africa)	1988

1.4 SPECIALIZED COURSES			
Duration	Topic	Institution	Year
10 weeks	Leadership	All Learn (Online learning consortium between Oxford, Stanford and Yale)	2004
3 days	Leadership Programme	University of Pretoria Gordon Institute of Business Science (GIBBS)	2006

1.5 WORK EXPERIENCE TO DATE		
Name of employer	Capacity and/or type of work	Period
City Council of Pretoria	Bus driver	1978/01/01 to 1979/12/31
University of Pretoria	Undergraduate student	1979/01/01 to 1983/12/31
Laboratory for Advanced Engineering (LGI)	Associate	1984/01/01 to 1987/12/31
SADF and Compuflow	Lieutenant in the South African Air Force and consultant respectively	1988/02/01 to 1989/12/31
North-West University	Associate professor	1990/01/01 to 1990/12/31
North-West University	Professor	1991/01/01 to 1993/12/30
North-West University	Acting Head of Department	1993/01/01 to 1993/12/30
EPS Consulting Engineers	CEO and consulting engineer	1994/01/01 to 1994/12/31
University of Johannesburg	Professor	1994/10/01 to 2002/06/30
University of Johannesburg	Chairman (Head) Laboratory for Energy	1998/01/01 to 2002/06/30
University of Johannesburg	Chairman (Head): Department of Mechanical Engineering	1999/01/01 to 2002/06/30
University of Pretoria	Professor and Head: Department of Mechanical and Aeronautical Engineering	2002/07/01 to 2006/12/31 (first term) 2007/01/01 to present (second term)
University of Pretoria	Chair: School of Engineering	2004/01/01 to 2007/12/31 (first term) 2008/01/01 to present (second term)

PREPARATORY PROFESSIONAL EXPERIENCE BEFORE ACADEMIC CAREER

Laboratory for Advanced Engineering (LGI)

Project work on a consultation basis to industry, mainly in finite elements and computational fluid dynamics.

SADF and Compuflow

On completion of my academic studies, I was conscripted into the South African Defence Force for two years. I was selected for officers' training for three months. I was appointed as a commissioned officer with the rank of lieutenant in the South African Air Force at the Faculty of Military Science at the University of Stellenbosch in Saldanha. My main task was to teach aerodynamics and fluid mechanics to air-force pilots and navigators, and this occupied me for approximately 20 hours per week. For the rest of the time, I was a partner in a company (Compuflow together with Dr Hardus van Zyl) through which I did consultation work in computational fluid dynamics.

2. TEACHING ACTIVITIES

2.1 Courses presented		
Course	Level (e.g. second year, Masters)	Self developed (Yes or No)
Aerodynamics (four times)	4 th year	Yes
Fluid Mechanics (six times)	3 rd year	Yes
Compressible Fluid Mechanics (four times)	4 th year	Yes
Thermodynamics (11 times)	2 nd year	Yes
Heat Transfer (six times)	4 th year	Yes
Air-conditioning and Refrigeration (four times)	4 th year	Yes
Gas Dynamics (twice)	Postgraduate level	Yes
Computational Fluid Dynamics (twice)	Postgraduate level	Yes
Advanced Thermodynamics (three times)	Postgraduate level	Yes
Advanced Fluid Mechanics (four times)	Postgraduate level	Yes
Advanced Heat Transfer (six times)	Postgraduate level	Yes
Advanced Air Conditioning and Refrigeration (six times)	Postgraduate level	Yes

EXTERNAL EXAMINER (1995 - the present)

Year	Course	University
1995	Thermodynamics MECN417 (Prof CJ Rallis)	University of the Witwatersrand
1995	3 Final year projects (Prof GP Greyvenstein)	North-West University
1995	Industrial Energy Management (Prof N Tully)	University of the Witwatersrand
1996	Thermodynamics MECN417 (Prof CJ Rallis)	University of the Witwatersrand
1996	6 Final year projects (Prof TJ Sheer & Prof EA Moss)	University of the Witwatersrand
1996	Advanced Thermo systems (postgraduate level) (Prof PG Rousseau)	North-West University
1997	Industrial Energy Management (Prof N Tully)	University of the Witwatersrand
1997	Thermodynamics MECN417 (Prof CJ Rallis)	University of the Witwatersrand
1997	3 Final year projects (Prof CJ Rallis)	University of the Witwatersrand
1997	4 Final year projects MEG426 (Prof GP Greyvenstein)	North-West University
1997	Selected topics in refrigeration (postgraduate level)	University of the Witwatersrand
1998	Heat and mass transfer (Prof N Tully)	University of the Witwatersrand
1998	Fluid Dynamics (Prof T Moss)	University of the Witwatersrand
1999	Fluid Dynamics (Prof P Rousseau)	North-West University
1999	Thermodynamics (Prof CJ Rallis)	University of the Witwatersrand
1999	Heat Transfer (Prof N Tully)	University of the Witwatersrand
1999	Fluid Dynamics (Dr HJWP Neomagus)	North-West University
1999	Final year project (Prof N Tully)	University of the Witwatersrand
2000	Advanced Thermo systems (Prof PG Rousseau)	North-West University
2000	Momentum transfer (Prof HJWP Neomagus)	North-West University

2000	Fluid Dynamics (Prof CJ Rallis)	University of the Witwatersrand
2001	Advanced Thermo systems (Prof PG Rousseau)	North-West University
2001	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2002	Advanced Thermo systems (Prof PG Rousseau)	North-West University
2002	Fluid Machines 414, Fluid Mechanics A314, Fluid Mechanics B344, Heat Transfer 414, Thermodynamics B344 and Thermodynamics A244	University of Stellenbosch
2002	Thermo Systems TML4	University of Johannesburg
2002	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2002	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2003	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2004	Heat Transfer 4A (Ms LC Coblentz)	University of Johannesburg
2004	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2005	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2006	Heat Transfer 4A (Prof A Nurick)	University of Johannesburg
2006	Momentum transfer CEM311 (Prof HJWP Neomagus)	North-West University
2007	Military Technology 312/322/342 and 352 (Major J Geldenhuys)	Military Academy University of Stellenbosch
2007	Thermodynamics 3 ENME4TD (Prof S Govender)	University of Kwa-Zulu Natal
2007	Design Project ENME4DP (Prof S Govender)	University of Kwa-Zulu Natal
2007	Heat Transfer 4A (Prof A Nurick)	University of Johannesburg
2007	Momentum transfer CEM312 (Prof HJWP Neomagus)	North-West University
2007	Aircraft Mechanics 342 (Major J Geldenhuys)	Military Academy University of Stellenbosch
2007	Design & Research Projects	University of Kwazulu-Natal
2007	Aircraft Mechanics 342 (Major J Geldenhuys)	Military Academy University of Stellenbosch

RESEARCH

Personal research and supervision of students

Originally, my teaching and research interests were in computational fluid dynamics. During the period 1993 to 1994 it shifted to experimental thermal/fluid sciences with specific application to air-conditioning and refrigeration systems. To make this possible, I started specialising in fluid mechanics, thermodynamics and heat transfer - the main building blocks that have to be integrated for developing new refrigeration and air-conditioning systems. The emphasis of my research at present is on enhanced heat transfer, convection heat transfer, condensation heat transfer, evaporation heat transfer of new refrigerants and zeotropic refrigerants and heat transfer fouling.

STUDENT SUPERVISION AND CO-SUPERVISION

Student name	Year	Title	Degree
WM Marx	1993	Minimizing of pressure losses in a fan drift-mine shaft intersection, using computational fluid dynamics	MEng
MP van Staden	1994	Development of an airflow model for a Lethabo steam boiler making use of computational fluid dynamics	MEng
F de V Arnoldi	1994	Simulation and performance tests of a water-to-water heat pump	MEng
DR de Basson	1994	Control strategy for optimal energy consumption at	PhD

South African Universities and Technikons

MC Bekker	1995	Separation of solid-liquid suspensions with acoustic energy	MEng
TM Muya	1996	Hot water consumption in South African developed and developing communities	MEng
FJ Smit	1996	The influence of a non-azeotropic refrigerant mixture on the performance of a hot-water heat pump	MEng
SA Oerder	1996	The performance of a municipal water reticulation, ground-coupled, reversible heat pump	MEng
PPJ Vorster	1998	Wet compression versus dry compression in heat pumps working with pure refrigerants or non-azeotropic mixtures for different heating applications <i>Vice-Chancellor Award (best dissertation)</i>	MEng
W Swanepoel	1998	Wet compression versus dry compression in refrigeration cycles working with pure refrigerants or non-azeotropic mixtures for different cooling applications	MEng
JPM Bukasa	1999	Average boiling heat transfer and pressure drop coefficients of R22/R142b in a helically coiled water heated tube-in-tube heat exchanger	MEng
SA Kebonte	1999	Condensation heat transfer and pressure drop coefficients of R22/R142b in a water-cooled helically coiled tube-in-tube heat exchanger	MEng
CW Wood	1999	Design methodology and experimental verification used to optimize liquid overfeeding effects achieved with heat exchanger accumulators	MEng
R da Veiga	1999	Evaluation of a permanent magnet to decrease scale formation in a tube <i>Vice-Chancellor Award (best dissertation)</i>	MEng
PJ Petit	1999	A steady-state model for the high-pressure side of a unitary air-conditioning	MEng
C Smith	2000	An evaluation of a magnetic physical water treatment device for the prevention of scale fouling in hot-water storage tanks	MEng
S van der Vyver	2000	The design, optimization and experimental verification of an accumulator heat exchanger	MEng
CA de Swardt	2000	A performance comparison between an air-source and a ground-source reversible heat pump	MEng

MP van Staden	2000	An integrated approach to transient simulation of large air-cooled condensers using computational fluid dynamics	PhD
WR da Veiga	2000	Heat transfer coefficient of a snow bag <i>Vice-Chancellor Award (best dissertation)</i>	MEng
H Coetzee	2001	Heat transfer and pressure drop characteristics of angled spiralling tape	MEng
S Coetzee	2001	The development of an experimental set-up to investigate heat transfer enhancement in tube-in-tube heat exchangers <i>Vice-Chancellor Award (best dissertation)</i>	MEng
E Krüger	2001	Comparison between CFD analysis and experimental work on heat exchangers	MEng
Z Shao	2001	Numerical and experimental evaluation of flow through perforated plates	MEng
N Denys	2002	The economic viability of a micro turbine cogeneration system	MEng
J Dirker	2002	Heat transfer coefficients in concentric annuli	M.Eng
L van der Hoek	2002	Data acquisition system for determining heat transfer coefficients in a heat pump	MEng
JPB Bukasa	2002	Heat transfer performance during condensation inside spiralled micro-fin tubes	PhD
W Louw	2002	The influence of annular tube contact in a helical-wound tube-in-tube heat exchanger	MEng
LC Coblenz	2002	Uncertainty analysis in heat exchanger applications	MEng
L Schreuder	2002	Characteristics of a plate heat exchanger under superheated conditions	MEng
AM Maluleke	2002	Optimal control versus conventional control strategies for ice-based thermal storage	M.Eng
JA Olivier	2003	Pressure drop during condensation inside smooth, helical microfin, and herringbone micro-fin tubes <i>Vice-Chancellor Award (best dissertation), S₂A₃ medal by the South African Association for Scientific Achievements</i>	M.Eng

R Da Veiga	2003	Development of a calcium carbonate scale formation experimental set-up for the evaluation of physical water treatment devices	PhD
WR Da Veiga	2003	Characteristics of a semicircular heat exchanger used in a water-heated condenser pump	PhD
L Liebenberg	2003	A unified prediction method for smooth and micro-fin tube condensation performance	Ph.D
FJ Smit	2003	Condensing coefficients of the refrigerant mixture R-22/R-142b in smooth tubes and during enhanced heat transfer configurations	PhD
H Van der Vyver	2003	Heat transfer characteristics of a fractal heat exchanger	PhD
J Bijkersma	2003	Pressure losses at the tubular inlet section of a low temperature differential heat exchanger	MEng
A Lambrechts	2004	Heat transfer performance during condensation inside smooth, micro-fin and herringbone tubes	MEng
D Owaga	2004	Flow patterns during refrigerant condensation in smooth and enhanced tubes <i>Vice-Chancellor Award (best dissertation)</i>	MEng
C Kotzé	2004	Direct contact brine-air heat exchanger characteristics	MEng
J Dirker	2004	Heat-extraction from solid-state electronics by embedded solids with application to integrated power electronics passive modules	PhD
Ji Tianfu	2005	Heat transfer enhancement during condensation in smooth tubes with helical wires inserts	PhD
T Bello-Ochende	2005/6	Heat transfer augmentation in heat sink channels	Post doctoral fellow
NDL Burger	2006	Failure analysis of ultra-high molecular weight polyethylene acetabular cups	PhD
J Pattinson	2006	A cut-cell, agglomerated-multigrid accelerated, Cartesian mesh method for compressible and incompressible flow	MEng
M Christians	2007	Flow pattern-based heat transfer and pressure drop correlations for condensing refrigerants in smooth tubes	MEng
E van Rooyen	2007	Time-fractional analysis of flow patterns during refrigerant condensation	MEng

Research leadership

- Chairperson of the Research Committee of the Faculty of Engineering of North-West University from 1990 to 1994. My responsibilities were: the distribution of research information, evaluation of research proposals by the faculty, implementation of a research strategy to increase research outputs, motivation of staff to increase their rate of production of publications, contact with outside organisations such as the Foundation for Research Development, the Water Research Council, the Department of Mineral and Energy Affairs, leadership, meetings and report back to the Faculty Council.
- Leader and initiator of the Research Group for Cooling and Heating Technology (RECOHET) at the University of Johannesburg. The research group consisted of 20 to 30 graduate students. I also initiated the building and construction of a new enhanced heat transfer laboratory for evaluating evaporation and boiling heat transfer characteristics of new refrigerants and zeotropic refrigerants. Most of the funding for this laboratory came from sources outside the university. The first experiments in this laboratory were carried out in June 1997.
- Chairperson of the Organising Committee of the 1st International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, sponsored by the American Society of Mechanical Engineers (ASME) and the South African Institute for Mechanical Engineers (SAIMEchE), 8 to 10 April 2002.
- Chairperson of the Organising Committee of the 2nd International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, sponsored by the Engineering Institute of Zambia, 23 to 26 June 2003.
- Chairperson of the Organising Committee of the 3rd International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, 21 to 24 June 2004.
- Chairperson of the Organising Committee of the 4th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Cairo, Egypt, 19 to 22 September 2005.
- Chairperson of the Organising Committee of the 5th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Sun City, 1 to 4 July 2007.

Research funding

Research funding for the past few years only:

For 2004:

R60 000 (TESP)
 US\$76 750 (ASHRAE with L Liebenberg and AG Malan)
 R1 800 000 (THRIP application with L Liebenberg and AG Malan)
 R732 000 (NRF: 2003 to 2005)
 R1 231 200 (Pebble bed/PU together with A G Malan: 2004 to 2006)
 R114 000 (Kentron with A G Malan)
 R50 000 (Polish – South Africa collaboration)

For 2005:

R732 000 (NRF: 2003 to 2005)
 R80 000 (Eskom TESP)
 R50 000 (Eskom with L Liebenberg)
 R1 231 200 (Pebble bed/PU together with A G Malan: 2004 to 2006)
 US\$76 750 (ASHRAE with L Liebenberg: 2004 to 2006)
 R543 000 (THRIP with L Liebenberg and A G Malan)
 R1 200 000 (SIMRAC: 2005/2006 with NDJ Burger and J Dirker)

For 2006:

R309 000 (NRF: for 2006 only)
 R80 000 (Eskom TESP)
 R50 000 (Eskom with Liebenberg)
 R1 231 200 (Pebble bed/PU together with A G Malan: 2004 to 2006)
 US\$76 750 (ASHRAE with L Liebenberg: 2004 to 2006)
 R30 000 (Franke)

R1 200 000 (SIMRAC: 2005/2006 with ND L Burger and J Dirker)
 R1 000 000 (THRIP with L Liebenberg and A G Malan)
 R50 000 International Science Co-operation grant with Poland

For 2007:

R100 000 (Constructal Theory Workshop: Kumba Resources, SASOL and NRF)
 R80 000 (Eskom TESP)
 R845 587 (NACoE with L Liebenberg)
 R721 000 (THRIP) plus R1 020 000 (industry)
 R300 000 (NRF)

For 2008:

R80 000 (Eskom TESP)
 R195 000 (NRF) (same amount per annum from 2008 to 2011)

Other Funding (for Department or School of Engineering)

For 2007:

R250 000 (PPS Refurbishment Sponsorship for CDIO lab)
 R170 million (Department of Education for new buildings for Engineering,
 together with A Melck and R F Sandenbergh)
 R3 million (Department of Trade and Industry for Centre of Excellence in
 Advanced Engineering together with R F Sandenbergh)

EXTERNAL EXAMINER THESES (1995 - the present)

Year	Degree, candidate & Supervisor	Title	University
1995	Du Plessis P DEng Prof L Pretorius	Mechanical oscillations on overhead transmission lines	University of Johannesburg
1995	Kleingeld M PhD Prof EH Mathews	Novel aspects of a national campaign on household energy savings	University of Pretoria
1995	Grobler LJ PhD Prof EH Mathews	A new holistic approach for HVAC retrofitting	University of Pretoria
1996	Lombard C PhD Prof EH Mathews	Two-port simulation of HVAC systems, an object-oriented approach	University of Pretoria
1996	Moodie JHR MEng Prof PG Rousseau	Development and integration of simplified mathematical models of chillers and air-conditioners for HVAC system simulation	University of Pretoria
1996	Weggelaar A MEng Prof EH Mathews	Verification, application and extension of a novel thermal simulation model	University of Pretoria
1997	MEng Sikder M Prof CJ Rallis	The design, fabrication and testing of a cyclone precipitator to provide particles of suitable sizes for uses in measuring the laminar burning	University of the Witwatersrand

		velocity of premixed gases by means of laser doppler velocimetry	
1997	PhD Van Heerden E Prof EH Mathews	Integrated simulation of building thermal performance, HVAC system and control	University of Pretoria
1997	PhD Buys JH Prof EH Mathews	Integration of economic and performance analyses of HVAC systems	University of Pretoria
1997	MEng Kilfoil AM Prof EA Moss	Water flushing of rock chips from horizontal holes drilled by rotary percussion	University of the Witwatersrand
1997	MEng Arndt DC Prof EH Mathews	Futher extension, verification and application of integrated building, HVAC system and control simulation	University of Pretoria
1998	MEng Thom MG Prof TJ Sheer	Performance evaluation of a desiccant-evaporative cooling air-conditioning system	University of the Witwatersrand
1998	MEng Taylor PB Prof EH Mathews	Enhancing the energy efficiency of houses and geysers	University of Pretoria
1999	MEng Pretorius CA Prof PG Rousseau	Simulation of nonazeotropic heat pump performance	North-West University
2001	MEng MF Geyser Prof EH Mathews	New technology for ESCO analysis	University of Pretoria
2002	M.Eng PW Jordaan Prof PG Rousseau	Determining the potential impact of a micro heat pump for domestic water heating	North-West University
2002	M.Eng HJ van Antwerpen Prof GP Greyvenstein	An investigation into the viability of using turbines for simultaneous secondary pressure regulation and energy recovery in mine- cooling water systems	North-West University
2003	PhD CP Botha Prof EH Mathews	Simulation of the human energy system	North-West University
2003	PhD R Els Prof EH Mathews	Energy evaluations and load shift feasibility in South African mines	North-West University

2003	M.Eng DT Claassen Prof EH Mathews	New procedures to reduce cost in HVAC systems	North-West University
2004	PhD M den Boef Prof EH Mathews	Assessment of the national DSM potential in mine underground services	North-West University
2004	PhD W den Heijer Prof GJ Grobler	An integrated approach to implement and sustain energy efficiency and greenhouse gas mitigation in SA	North-West University
2004	MEng GJ Martins Prof LJ Grobler	A methodology to identify, quantify and verify the cost benefits of energy and process improvements on a ferro-metal production plant	North-West University
2004	MEng JC Olivier Prof GP Greyvenstein	Network modeling of transient heat exchanger performance	North-West University
2005	PhD W Bouer Prof EH Mathews	Designing a dynamic integrated thermal and energy system simulation scheme for cross industry applications	North-West University
2005	PhD WF Fuls Prof M Kleingeld	Development of a novel interim bulk fuel storage facility for the PBMR	North-West University
2005	MEng G du Plessis Prof PG Rousseau	Evaluation of alternative sanitary water heating configurations for demand side management	North-West University

3. INDUSTRY EXPERIENCE

INVOLVEMENT

Company	Position	Description of services
M-Tech Mechanical	Director from 1990 to 1994, CEO during 1993.	General consulting in mechanical engineering concentrating on computational fluid dynamics. A few other development and manufacturing projects (e.g. air knives).
M-Tech Software	Founder and CEO from 1992 to	Marketing of technical software, concentrating on the ANSYS finite element

	1994. Sold the company in 1994.	programme.
Enerflow CC	Director from 1992 - 2000.	Developing, manufacturing and marketing 5 ranges of heat pumps (286 different models).
Fabco Technologies (Pty) Ltd	Director from 1993 until 1994. CEO during 1993.	Multi-disciplinary engineering (consulting, turnkey projects, energy audits, etc.). Associated companies were: CDS Electrical Engineers, M-Tech Mechanical, Enerflow, FRAD and Fabco Trading.
EPS Consulting Engineers	Founder and CEO (1994 to 2002).	Energy Performance Contracting projects.
Cooling and Heating Technologies	Founder and CEO (1994 to 2002).	Consulting in air-conditioning and refrigeration.
Randtech	Founder and CEO (2000 – 2002).	General consulting in mechanical engineering for staff at the University of Johannesburg.

4. MEMBERSHIPS, CONTRIBUTIONS TO SOCIETIES, JOURNALS, COUNCILS, COMMISSIONS, SEMINARS, RESEARCH VISITS, ETC.

Commissions and committees (Universities)

- University of North-West, Research Committee, 1990 - April 1994, chairperson.
- University of North-West, Special Committee on the Revision of the Guidelines for the writing of mini-dissertations, dissertations and theses, member, 1990.
- University of North-West, Senate Commission, Special Committee writing a document: "Guidelines for study leaders and supervisors for master's and doctoral students and guidelines for examination", member, 1992.
- University of North-West, Executive Committee of the Faculty of Engineering, member by representing Mechanical Engineering as Acting Head, October 1992 - November 1993.
- University of Johannesburg, Committee on determining the views of undergraduate students on the Faculty of Engineering, member, 1995.
- University of Johannesburg, Committee on changing to full departmental systems, 1997 – 1999.
- University of Johannesburg, Committee on upgrading and modernising media equipment for lecture rooms, 1998.
- University of Johannesburg, developing of an energy course, curricula, and study guides, material, etc. for a Diploma in Technology Education, 1999-2000.
- University of Johannesburg, Dean's committee, 1999 – 2003.
- University of Johannesburg, Ethics committee of Senate, 2001 – 2003.
- University of Johannesburg, Committee for the development of a new educational model, 2001 – 2002.
- University of Pretoria, Research Committee, Faculty of Engineering, 2003 – the present.
- University of Pretoria, Senate, July 2002 – present.
- University of Pretoria, Member of the Managing Committee of the Faculty of Engineering, Built Environment and Information Technology, 2004 – present.
- University of Pretoria, Facilities Management Committee, 2005 – present.
- University of Pretoria, Chair of Mathematics Committee, 2007 - present.

Research evaluation/reviewer (articles excluded)

- Member NRF/Vaal Triangle Technikon Programme Advisory Committee, 2000 – present.
- NRF Committee to evaluate research at Vaaldriehoek Technikon, 2000, 2001.
- NRF, International Science Liaison, evaluation of applications, keynote speakers, 6 February 2003.
- University of Durban-Westville, Promotions Committee, 14 February 2003.

- NRF Review Committee, post doctoral fellowship applications, 2003 – present.
- NRF, Evaluation of International Science Liaison Grants, 2003 – present.
- NRF, Evaluation of research proposal for NRF Technikon Programme, 2003.
- Innovation Fund, technical evaluator, 2003, 2005.
- The Royal Society, United Kingdom, Research grants, June 2004.
- NRF peer rating, 2004 to the present. Evaluating the quality of research outputs and standing of researchers.
- The Royal Society, United Kingdom, Research grants, August 2006.

Accreditations and external evaluations

- Member of accreditation team (Engineering Council of South Africa), University of Durban-Westville (1996): Mechanical Engineering programme.
- Member of accreditation team (Engineering Council of South Africa), University of Durban-Westville (2000): Mechanical Engineering programme.
- Member of external evaluations panel, University of Stellenbosch (2002): Faculty of Military Science, Department of Aeronautics.
- Member of accreditation team (Engineering Council of South Africa), University of Cape Town (2001): (Mechatronics programme).
- Member of paper accreditation team (Engineering Council of South Africa), University of Stellenbosch (2001): (Mechatronics programme).
- Member of accreditation team (Engineering Council of South Africa), University of Natal (2003): (Mechanical engineering programme).
- Member (team leader) of external evaluations panel, University of Stellenbosch (2005): School of Science and Technology.
- Member of accreditation team (Engineering Council of South Africa), University of Stellenbosch (2005): (Mechatronics engineering programme).
- Member of accreditation team (Engineering Council of South Africa), University of Stellenbosch (2006): (Mechatronics engineering programme).
- Member (team leader) of accreditation team, (Engineering Council of South Africa), University of North-West (2006): (Mechanical Engineering programme).
- Member of accreditation team (Engineering Council of South Africa), Nelson Mandela Metropolitan University (2007): (Mechatronics engineering programme).
- Member (team member) of accreditation team, (Engineering Council of South Africa), University of the Witwatersrand (2007): (Mechanical, Aeronautical and Industrial Engineering programmes).

Professional engineering committees

- Member of the Professional Advisory Committee (PAC) of the Engineering Council for South Africa (ECSA), 11 April 2002 to the present.
- Member of the Professional Engineers: Qualifications and Examinations Committee (QEC), of the Engineering Council of South Africa (ECSA), April 2004 to the present.

Editor, guest editor, editorial boards, etc.

- Aeronautica Meridiana, Member of Editorial Committee, 1991- the present.
- Aeronautica Meridiana, Guest Editor for 1992 issue.
- Research and Development Journal, Member of Editorial Advisory Board, 1990 - 1994.
- Heat Transfer Engineering, Member of Editorial Advisory Board, 2001 – present.
- Guest Editor, Heat Transfer Engineering, Special annual issues on HEFAT conferences, 2003, 2004, and 2005.
- Associate Editor, Heat Transfer Engineering, 2002 – the present.
- Editor, Experimental Heat Transfer, 2005 – the present.
- Editorial Board, Energy and Buildings, 2005 – 2007.
- Advisory Editor, Science & Technology of Nuclear Installations, (new journal to be produced in 2007/2008), 2006 - the present.
- Editorial Board member, International Review of Mechanical Engineering (IREME), 2006 - the present.
- Guest Editor, Experimental Heat Transfer, Special issue on HEFAT2005 conference, 2007.

Professional societies

- American Institute of Aeronautics and Astronautics, Member, Membership number: 85539, 1990 – 1995, 2005 – present.
- Aeronautical Society of South Africa (Division of RAeS), Member, 1990 – 1995, Fellow, 2005 – present.
- South African Institution of Mechanical Engineers, Member, 1985 - 1997.
- South African Institution of Mechanical Engineers, Fellow, Membership number: 132060, 1997 - the present.
- American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE), Member, Membership number: 05084535, 1993 - the present.
- American Society of Mechanical Engineers, Member (1992-2007), Fellow (2007 - present), Membership number: 4032447, 1992 - the present.
- South African Institute of Refrigeration and Air Conditioning (SAIRAC), Member, Membership number: 2486, 1999 – the present.
- The Royal Aeronautical Society of South Africa (RAeS), Membership number 1368200, Fellow, 2005 – the present.
- Council member of the Aeronautical Society of South Africa, 2005 – the present.
- South African Academy of Engineering (SAAE), Fellow, 2006 – the present.

Conference participations/contributions

- National Computational Fluid Mechanics Conference, member of organising committee, 1990.
- Chairperson for morning session on Transonic flow, Second National CFD Conference, Vereeniging, 1991.
- Session chairperson at the International Symposium on Economic Modelling, London, 1991.
- Session chairperson at the Seventh International Conference on Numerical Methods in Transonic Problems, Stanford, 1991.
- Morning session chairperson at a one-day Maintenance Forum in Johannesburg, 1991.
- Session chair: ASME_ZSITS International Thermal Science Seminar, Slovenia, 2000
- Session chair (2X): Conference on Applied Mechanics, Durban, SACAM, 2000
- Lead Scientist: 5th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Thessalonica, Greece, 2001.
- Session chairperson, 5th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Thessalonica, Greece, session on condensation, 2001.
- Member of the Conference Scientific Committee for the Compact Heat Exchanger symposium (A Festschrift on the 60th Birthday of Ramesh K Shah), IHTC Grenoble, France, 24 August 2002.
- Chair of organising committee, First International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, HEFAT2002, Skukuza, Kruger National Park, South Africa, 8 to 10 April 2002.
- Member of the Assembly of World Conferences on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics (expire after the 7th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics).
- Member of the European Scientific Committee for the Compact Heat Exchanger Conference, Crete, September/October 2003.
- Member of the Scientific Advisory Board for the 2nd Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems, 15 – 20 June 2003, Croatia.
- Member of the International Scientific Committee for the 3rd International Symposium on Computational Heat Transfer, Norwegian fjords, 19 – 24 April 2004.
- Lead Scientist, Assembly of World Conferences on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, 3rd International Symposium on Two-Phase Flow Modelling and Experimentation, Pisa, Italy, 22 – 24 September 2004.
- Member of the Organising committee and International Forum on Heat Transfer, Heat Transfer Society of Japan, Kyoto, Japan, 24 – 26 November 2004.
- Member of the organizing committee, SACAM04, Fourth South African Conference on Applied Mechanics, 18 – 21 January 2004.
- Member of the International Scientific Committee, 5th International Symposium on Multiphase Flow, Xi'an, China, 2005.
- Chair of organising committee, Second International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, HEFAT2003, Livingston, Zambia, 23 to 25 June 2003.

- Member of the Scientific Committee, ASME_ZSITS International Thermal Science Seminar, Slovenia, 13 – 16 June 2004.
- Member of the Student Program Track Leader, ASME and JSME, 12th International Conference on Nuclear Engineering, Arlington, Washington, DC, 25 – 29 April 2004.
- Member of the International Scientific Committee, 7th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, PRES 2004, Prague, Czech Republic, 22 – 26 August 2004.
- Lead Scientist of the Sixth World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics (ExHFT-6), Matsushima, Japan, 17 – 21 April 2005.
- Chair of organising committee, Third International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, HEFAT2004, Cape Town, 21 to 24 June 2004.
- Member of the Scientific Advisory Board of 2005 Dubrovnik Conference, 5 – 11 June 2005.
- Member of the Conference Scientific Committee, Heat Transfer in Components and Systems for Sustainable Energy Technologies: Heat-SET 2005, Grenoble, France, 5-7 April 2005.
- Member of the Scientific Committee of the Fifth International Conference on Enhanced, Compact and Ultra-Compact Heat Exchangers: Science, Engineering and Technology sponsored by ECI of New York, Whistler, British Columbia, Canada, September 12-16, 2005.
- Chair of organising committee, Fourth International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, HEFAT2005, Cairo, Egypt, 19 to 22 September 2005.
- Member of Scientific Committee of Special Session on Single and Two-phase Natural Circulation, 3rd IASME/WSEAS International Conference on Heat Transfer, Thermal Engineering and Environment, Corfu, Greece, 20 – 22 August 2005.
- Member of the Scientific Committee, Assembly for International Heat Transfer Conferences.
- Member of the International Scientific Committee, 9th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, PRES 2006, Prague, Czech Republic, 27 – 31 August 2006.
- Member of the Scientific Advisory Board of the 4th Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems, 4- 8 June 2007.
- Member of the International Scientific Committee, 10th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, PRES 2007, Ischia Island, Gulf of Naples, 24 – 27 June 2007.
- Session Chair, 13th International Heat Transfer Conference (IHTC-13), Sydney, 13 - 18 August 2006.
- Member of the Scientific committee, Heat Transfer in Components and Systems for Sustainable Energy Technologies Conference (Heat-SET 2007), Chambéry, France, 18-20 April 2007.
- Member of the International Scientific Committee, WSEAS Conference on Fluids and Heat and Mass Transfer, Vouliagmeni Beach, Crete, Greece, 25-27 August 2007.
- Coordinating Scientist for the International Heat and Mass Transfer Conference, 19th National and 8th ISHMT-ASME HMT Conference, Hyderabad, India, 3-5 January 2008.
- Member of Scientific Committee, ECOS'08, Cracov, Poland, 2008.
- Member of the International Advisory Committee on Computational Mechanics, Sun City, 7 to 11 January 2009.

External research supervision

- Christophe T'Joel, PhD, member of external guidance committee, University of Ghent, 2005.

Technical committees

- Department of Mineral and Energy Affairs - Launching committee for the development of computer software for the design of energy-efficient buildings, 1992 and 1993.
- Corresponding member of the Technical Committee TC1.4 (Heat Transfer) of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), 1998 - 2004
- Corresponding member of the Technical Committee TC8.4 (Air to refrigerant heat transfer equipment) of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), 1998 - the present.
- Corresponding member of the Technical Committee TC8.5 (Liquid to refrigerant heat transfer equipment) of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), 1998 – 2002.
- International member of the Technical Committee TC8.5 (Liquid to refrigerant heat transfer equipment) of the

- American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), 2002 - the present.
- International member of the Technical Committee TC1.4 (Heat Transfer) of the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), 2004 - the present.
- Board member of the Department of Trade and Industry-sponsored, National Aerospace Centre of Excellence (NACoE), 2006 – present.

Organisation of short courses

- Compact heat exchangers, Dr R Shah, Delphi Harrison Thermal Systems, General Motors Corporation, 18 – 19 April 2000.
- Evaporative cooling towers for industrial and refrigeration applications, Dr Paul Erens, Industrial Water Cooling, 5 – 6 June 2000.
- Solar Systems – Opportunities for competitive products, Dr Henry Healey, Florida Alternative Corporation, 1 – 2 November 2000.
- Reliability-centred Maintenance, Jasper L Coetzee, M-Tech , 13 – 15 March 2001.
- Delivering customer value – reengineering at the interface, Dr Kelvin Kemm and Joe Aspinall, STRATEK , 23 – 24 April 2001.
- Maintenance Fundamentals for Maintenance and Production Executives, Jasper L Coetzee and Pieter-Jan Vlok, 24 – 26 May 2001.
- Eco-labelling and industrial manufacturing, Dr Kelvin Kemm and Joe Aspinall, STRATEK, 8 – 9 May 2001.
- Problem solving skills for maintenance practitioners, Jasper L Coetzee and Ronel Kotzé, M-Tech, 15 – 17 May 2001.
- The environmental challenge to industry, Dr Kelvin Kemm and Mr Leon Louw, STRATEK, 29 – 30 May 2001.
- Project management, Deon Kruger, University of Johannesburg, 6 – 8 June 2001.
- Maintenance fundamentals for maintenance and production executives, Jasper L Coetzee, M-Tech, 5 – 7 June 2001.
- Technology and economics, Dr Kelvin Kemm and Leon Louw, STRATEK, 12 – 13 July 2001.
- Lateral thinking and problem-solving in industry, Dr Kelvin Kemm and Leon Louw, STRATEK, 19 – 20 July 2001.
- Project management, Deon Kruger, University of Johannesburg, 18 – 20 September 2001.
- The First Southern Hemisphere Workshop on Constructal Theory and Design in Nature and Engineering, Adrian Bejan, Sylvia Lorente, Tunde Bello-Ochende, Antonio Reis and Antonia Miguel, University of Pretoria, 2 March 2007.

Research visits

- JSPS (Japan Society for the Promotion of Science) fellowship, Kyushu and Kobe Universities, Japan, 13 March 2004 to 2 April 2004.

Research seminars by invitation

- Heat Transfer Society of Japan, The characterisation of flow regimes during refrigerant condensation in smooth and enhanced tubes: power spectral density distribution of pressure signals, Kyushu University, Japan, 22 March 2004.
- Kobe University, Kobe University, Japan, 29 March 2004, The characterisation of flow regimes during refrigerant condensation in smooth and enhanced tubes: power spectral density distribution of pressure signals.
- University of Illinois, 24 June 2005, Condensation flow regime maps during refrigerant condensation.

REFEREING MANUSCRIPTS FOR JOURNALS/PUBLICATION

Aeronautica Meridiana	April 1991
Aeronautica Meridiana	May 991
International Journal of Building and Environment	May 1991
International Journal of Building and Environment	May 1991
International Journal of Building and Environment	June 1991
International Journal of Building and Environment	August 1991
Water SA	February 1992
Research and Development Journal	April 1992

International Journal of Building and Environment	April 1992
Heat Transfer Engineering	May 1992
Research and Development Journal	July 1992
International Journal of Numerical Methods for Heat and Fluid Flow	November 1992
Water SA	December 1992
Energy - The International Journal	January 1993
Aeronautica Meridiana	January 1993
AIAA	March 1993
Heat Transfer Engineering	May 1993
Water SA	May 1993
International Journal of Building and Environment	July 1993
International Journal of Energy Research	March 1994
Energy Conversion and Management	April 1994
AIAA	May 1994
Heat Transfer Engineering	January 1994
Energy - The International Journal	March 1994
International Journal of Energy Research	April 1994
Energy, Conversion and Management	July 1994
Heat Transfer Engineering	August 1994
International Journal for Energy Research	March 1995
Energy - The International Journal	October 1995
Heat Transfer Journal	February 1996
International Journal of Refrigeration	April 1996
Energy Conversion and Management	November 1996
Heat Transfer Engineering	March 1997
Research and Development Journal	April 1999
Research and Development Journal	June 1999
Journal of Enhanced Heat Transfer	July 1999
International Journal of Applied Thermodynamics	March 2000
Research and Development Journal	January 2001
Research and Development Journal	April 2001
Research and Development Journal	April 2002
ASHRAE Transactions	August 2002
Applied Thermal Engineering	August 2002
Heat Transfer Engineering	November 2002
ASHRAE Transactions	November 2002
ASHRAE Transactions	January 2003
Experimental Heat Transfer	May 2003
R & D Journal	June 2003
Heat Transfer Engineering	December 2003
Journal of Heat Transfer	January 2004
Journal of Heat Transfer	February 2004
Heat Transfer Engineering	March 2004
Journal of Heat Transfer	March 2004
Applied Thermal Engineering	May 2004
Experimental Heat Transfer	September 2004
Heat Transfer Engineering	November 2004
Journal of Heat Transfer	December 2004
Journal of Heat Transfer	January 2005
Energy – The International Journal	February 2005
Solar Energy Journal	May 2005
Electronic Packaging	June 2005
Experimental Heat Transfer	July 2005
Journal of Heat Transfer	August 2005
Journal of Heat Transfer	October 2005
Applied Thermal Engineering	November 2005

Experimental Thermal and Fluid Science	December 2005
Journal of Heat Transfer	January 2006
Energy - The International Journal	February 2006
Applied Thermal Engineering	April 2006
Energy - The International Journal	May 2006
Heat Transfer Engineering	June 2006
International Journal of Refrigeration	August 2006
Journal of Heat Transfer	August 2006
Journal of Heat Transfer	September 2006
International Journal of Heat and Mass Transfer	September 2006
Applied Thermal Engineering	November 2006
Experimental Heat Transfer	December 2006
Applied Thermal Engineering	December 2006
Applied Thermal Engineering	January 2007
Applied Thermal Engineering	April 2007
International Journal of Energy Technologies and Policy (IJETP)	April 2007
International Journal of Thermal Sciences	July 2007
Solar Energy	August 2007
Chemical Engineering and Processing: Process Intensification	November 2007

5. AWARDS

Academic awards (as student)

- University colours from the University of Pretoria for Academic Achievement, 1986 and 1988.

Medals

- General Service medal from the South African Defence Force for the period 1988 and 1989 for "defending the Republic of South Africa in the conservation of life, health and property".

Research Awards

- Thomas Price Award in 1988. Awarded by the South African Institute of Mechanical Engineers for original research published in the 1986 issue of the Research and Development Journal.
- Evaluated in 1992 by the Foundation of Research Development as a Y-class researcher. These acknowledged researchers (normally younger than 35 years of age) who obtained their doctoral degrees not more than five years prior to evaluation and who, on the basis of their performance as researchers during their doctoral studies and/or early post doctoral research careers, as indicated by their research outputs, are recognised as showing promise of establishing themselves as researchers within a five-year period after evaluation.
- Rand Coal Award in 1994 together with WM Marx (postgraduate student). Awarded by the South African Institute of Mechanical Engineers for original research published in 1993 in the Research and Development Journal.
- Evaluated in 1996 by the Foundation of Research Development as an established C2 researcher who, as individual or member of a team, produces research outputs of an international standard as judged by the science, engineering or technology community, either internationally or locally.
- South African Institute of Mechanical Engineers Bronze Medal for 1998 together with S van den Vyver. Awarded by the Institute for original research published in 1997 in the Research and Development Journal for the paper entitled "Heat transfer augmentation in the annulus of a heat exchanger consisting of a round tube inside a twisted square tube".
- South African Institution of Mechanical Engineers, LT Campbell-Pitt Award for 1999, together with H Herman.

Awarded by the Institute for original research published in 1998 in the Research and Development Journal for the paper entitled "Heat transfer augmentation of a spiralled tube inside the annulus of a tube-in-tube heat exchanger".

- Silver Medal Award (2001) of the South African Institution of Mechanical Engineering together with two students (S Coetzee and W da Veiga) for the best paper published in 2000 in the Research and Development Journal entitled: "Condensation in an annulus with spiralled wires".
- Evaluated in 2001 by the Foundation of Research Development as an established C1 researcher who, as individual or member of a team, produces research outputs of an international standard as judged by the science, engineering or technology community, either internationally or locally. A C1 category is described as: "While all reviewers concur that the candidate is an established researcher (as described), some of them indicate that he/she already enjoys considerable international recognition for his/her high quality research outputs. (Researchers on the borderline between B and C fall into this group.)"
- Fellowship grant in 2004 from the Japan Society for the Promotion of Science (JSPS), to conduct research in Japan for a period of up to 42 consecutive days. Usually granted to senior scientists, university professors, and other persons with substantial professional experience.
- Evaluated in 2006 by the Foundation of Research Development as an established B2 researcher who enjoys considerable international recognition for the high quality and impact of their recent research outputs.

Teaching Awards

- At the North-West University, twice received a Special Award for Teaching on the basis of "proven excellent teaching". This award, named the "VERKA Award" is only awarded every three years and I received it consecutively for 1990 and 1993.
- Lecturer of the year, Faculty of Engineering, University of Johannesburg, 2000. (Awarded in 2000 for the first time.)

Academic awards

- University of Pretoria Exceptional Achiever: Senior academics who have already achieved professional status and who have maintained continuous exceptional achievement in the fields of under- and postgraduate teaching and learning, research, community service and administration, and who enjoy exceptionally high stature among their peers (for the period 2004 to 2006).
- University of Pretoria Exceptional Achiever: Senior academics who have already achieved professional status and who have maintained continuous exceptional achievement in the fields of under- and postgraduate teaching and learning, research, community service and administration, and who enjoy exceptionally high stature among their peers (for the period 2007 to 2009).

Guest speaker

- Certificate Ceremony: M-Tech Maintenance Training: The importance of continuing education, February 2001.

6. RESEARCH OUTPUTS

Patents registered

1. MEYER JP, Multi Channel Random Selector, Patent no. 90/4245, 1990.
2. MEYER JP and DE WET JM, Evaporation action cooling unit, Patent no. 93/9393, 1993.
3. MEYER JP and COETZEE H, Twisted strip heat exchanger, Patent 99/5561, 2000.

4. MEYER JP, Heat exchanger with truncated pyramid-shaped projections, Patent 99/7399, 2000.
5. MEYER JP and VAN DER VYVER S, Round tube inside a twisted square tube, heat exchanger, Patent 99/7400, 2000.
6. MEYER JP and VAN DER VYVER H, Heat transfer augmentation of a spiralled tube inside the annulus of a tube-in-tube heat exchanger, Patent 99/7401, 2000.
7. MEYER JP, Fractal heat exchanger for optimum enhanced heat transfer, Patent 99/7398, 2000.

Research reports

8. MEYER JP, MUYYA T and VISAGIE J; Potential for hot-water heating with heat pump reticulation in the domestic sector - techno-economic study, Report no: EO9517, Department of Mineral and Energy Affairs, February 1996.
9. MEYER JP; A strategy for the development of an energy performance contracting industry in South Africa, Report no. EDBV9607, Department of Mineral and Energy Affairs, 1997.
10. COETZEE PP and MEYER JP; Evaluation and development of physical water treatment process for reduction of CaCO₃ scale, WRC Report No. 836/1/02, 2002.

Encyclopaedia

11. MEYER JP; Heat pumps, International Encyclopaedia of Heat and Mass Transfer, Edited by HEWIT GF, SHIRES GL and POLEZHAEV YV, CRC Press, New York, pp. 562-564, 1997.

Articles published in peer-reviewed accredited journals

12. MEYER JP; A method to predict the effective cleaning of milk pipe-lines, Research and Development Journal, Vol. 2, No. 1, pp. 16-18, 1986.
13. MEYER JP and MATHEWS EH; A transformed Laplace equation for the numerical solution of various mechanical engineering problems, The International Journal for Mechanical Engineering Education, Vol. 15, No. 1, pp. 41-50, 1987.
14. MEYER JP; Computational fluid flow, The South African Mechanical Engineer, Vol. 37, No. 5, pp. 223-228, May 1987.
15. MATHEWS EH and MEYER JP; Numerical modelling of wind loading on a film clad greenhouse, Building and Environment; The International Journal of Building Science and its Applications, Vol. 22, No. 2, pp. 129-134, 1987.
16. MATHEWS EH, MEYER JP, VISSER JA and CROSBY CP; Numerical prediction of wind loads on buildings, Journal of Wind Engineering and Industrial Aerodynamics, Vol. 31, pp. 241-250, 1988.
17. MEYER JP, MATHEWS EH and VAN ZYL GP; Numerical calculation of profiles corresponding to given pressure distributions, Communications in Applied Numerical Methods, Vol. 3, No. 2, 1988.
18. MATHEWS EH, CROSBY CP, VISSER JA and MEYER JP; Numerical prediction of wind loads on buildings, Journal of Wind Engineering and Industrial Aerodynamics, Vol. 13, pp. 241-250, 1988.
19. MATHEWS EH and MEYER JP; Computation of wind loads on a semicircular greenhouse, Journal of Wind Engineering and Industrial Aerodynamics, Vol. 29, pp. 225-233, 1988.
20. MEYER JP; Numerical prediction of viscous and turbulent flow around a projectile in the transonic flow regime,

Aeronautica Meridiana Journal, Vol. 8, pp. 75-83, 1990.

21. GREYVENSTEIN GP and MEYER JP; The viability of heat pumps for the heating of swimming pools in South Africa, *Energy - The International Journal*, Vol. 16, No. 7, pp. 1031-1037, 1991.
22. MEYER JP, LE GRANGE LA and MEYER C; The utilization of air scoops for the improvement of ventilation in a coal mine heading, *International Journal of Mining Science and Technology*, Vol. 13, pp. 17-24, 1991.
23. MEYER JP and GREYVENSTEIN GP; The heating of swimming pools in South Africa: a techno-economic analysis between heat pumps and solar heating, *Research and Development Journal*, Vol. 7, No. 1, pp. 26-31, 1991.
24. MEYER JP and GREYVENSTEIN GP; Hot water for homes in South Africa with Heat Pumps, *Energy - The International Journal*, Vol. 16, No. 7, pp. 1039-1044, 1991.
25. GREYVENSTEIN GP and MEYER JP; Influence of price changes on the viability of heat pumps for heating water in South African homes, *International Journal of Energy Conversion and Management*, Vol. 33, No. 1, pp. 41-49, 1991.
26. MEYER JP and GREYVENSTEIN GP; The influence of an increase in electricity tariffs on the viability of heat pumps against direct heating for large consumers of hot water in South Africa, *International Journal of Energy Economics*, Vol. 13, No. 4, pp. 238-245, 1991.
27. MEYER JP and GREYVENSTEIN GP; Hot water for large residential units, hospitals and laundries with heat pumps in South Africa: a techno-economic analysis, *International Journal of Energy Conversion and Management*, Vol. 33, No. 2, pp. 135-144, 1991.
28. VAN STADEN MP and MEYER JP; The influence of nose radius modification on the lift to drag ratio of an NACA64-006 wing section, *Aeronautica Meridiana*, Vol. 9, 1991.
29. MATHEWS EH, VAN DER WALT NW and MEYER JP; A numerical design procedure for subsonic nozzles, *Aeronautica Meridiana*, Vol. 9, 1992.
30. MEYER JP and GREYVENSTEIN GP; The drying of grain with heat pumps in South Africa, *International Journal of Energy Research*, Vol. 16, No. 1, pp. 13-20, 1992.
31. MEYER JP and GREYVENSTEIN GP; Hot water for large residential units, hospitals and laundries with heat pumps in South Africa; a techno-economic analysis, *Energy Conversion and Management*, Vol. 33, No. 2, pp. 135-143, 1992.
32. MEYER JP and GREYVENSTEIN GP; Influence of price changes on the viability of heat pumps for water heating in South Africa, *Energy Conversion and Management*, Vol. 33, No. 1, pp. 41-49, 1992.
33. MEYER JP; The behaviour of a non-circular cylinder with and without strakes in cross-flow, *Aeronautica Meridiana*, Vol. 10, 1992.
34. MEYER JP and MARX WM; The minimizing of pressure losses in a fan drift-mine shaft intersection, using computational fluid dynamics, *Research and Development Journal*, Vol. 9, No. 3, pp. 1-7, 1993.
35. LE GRANGE LA, GREYVENSTEIN GP, DE KOCK WJ and MEYER JP; A numerical model for solving polymer melt flow, *Research and Development Journal*, Vol. 9, No. 2, pp. 12-17, 1993.
36. GREYVENSTEIN GP and MEYER JP; The cost-effectiveness of heat pumps in specific buildings in South Africa, *International Journal of Energy Research*, Vol. 17, No. 7, pp. 633-646, 1993.
37. MEYER JP and GREYVENSTEIN GP; The influence of height above sea level on the COP of air-source heat

pumps used for water heating, *Heat Transfer Engineering*, Vol. 14, No. 2, pp. 44-50, 1993.

38. MEYER JP and GREYVENSTEIN GP; The calculation of viscous transonic flows with a pressure-based method, *AIAA Journal*, Vol. 32, No. 3, pp. 659-661, 1994.
39. MEYER JP and TSHIMANKINDA M; Domestic hot water consumption by developing communities in South African Traditional Houses, *Energy - The International Journal*, Vol. 21, No. 12, pp. 1101-1106, 1996.
40. MEYER JP and TSHIMANKINDA M; Domestic hot water consumption in South African houses for developed and developing communities, *International Journal of Energy Research*, Vol. 21, pp. 667-673, 1997.
41. PETIT PJ and MEYER JP; A techno-economic analysis between the performances of air- and ground-source air conditioners in South Africa, *International Journal of Energy Research*, Vol. 21, No. 11, pp. 1011-1021, 1997.
42. MEYER JP and TSHIMANKINDA M; Domestic hot water consumption by South African developing communities living in shacks, *International Journal of Energy Research*, Vol. 21, pp. 1081-1086, 1997.
43. VAN DEN VYVER S and MEYER JP; Heat transfer augmentation in the annulus of a heat exchanger consisting of a round tube inside a twisted square tube, *Research and Development Journal*, Vol. 13, No. 3, pp. 77-82, 1997.
44. SWANEPOEL W and MEYER JP; Preliminary investigation of heat transfer augmentation by means of spiral wires in the annulus of tube-in-tube heat exchangers, *Research and Development Journal*, Vol. 13, No. 3, pp. 98-100, 1997.
45. BEKKER MC, MEYER JP, PRETORIUS L and VAN DER MERWE DF; Separation of solid-liquid suspensions with acoustic energy, *Water Research Journal*, Vol. 31, No. 10, pp. 2543-2549, 1997.
46. MEYER JP and TSHIMANKINDA M; Domestic hot-water consumption in South African apartments, *Energy - The International Journal*, Vol. 23, No. 1, pp. 61-66, 1998.
47. MEYER JP and TSHIMANKINDA M; Domestic hot water consumption in South African Townhouses, *Energy Conversion and Management*, Vol. 39, No. 7, pp. 679-684, 1998.
48. PETIT PJ and MEYER JP; Techno-economic analysis between the performances of heat source air-conditioners in South Africa, *Energy, Conversion and Management*, Vol. 39, No. 7, pp. 661-669, 1998.
49. VORSTER PPJ and MEYER JP; Wet compression versus dry compression in heat pumps working with pure refrigerants, *Australian Refrigeration Air Conditioning & Heating Journal, (AIRAH Journal)*, Vol. 52, No. 3, pp. 40-43, 1998.
50. PETIT PJ and MEYER JP; Economic potential of vertical ground-source heat pumps compared to air-source air-conditioners in South Africa, *Energy - The International Journal*, Vol. 23, No. 2, pp. 137-143, 1998.
51. WOOD CW and MEYER JP; Unsteady temperature distributions in vertical storage tanks heated with heat pumps, *Heat Transfer Engineering*, Vol. 19, No. 3, pp. 43-52, 1998.
52. HERMAN H and MEYER JP; Heat transfer augmentation of a spiralled tube inside the annulus of a tube-in-tube heat exchanger, *Research and Development Journal*, Vol. 14, No. 3, pp. 43-48, 1998.
53. MEYER JP; Evaluation of LPG as a refrigerant in air conditioning and refrigeration, *Mechanical Technology*, pp. 7-12, December 1998.
54. MEYER JP; Evaluation of LPG, propane, R-404A, R-410A and R-407c as refrigerants in air conditioning and refrigeration, *Refrigeration and Air Conditioning*, Vol. 15, No. 2, pp. 24-33, 1999.

55. MEYER JP, RAUBENHEIMER PJA and KRÜGER E; The influence of return loop flow rate on stratification in a vertical hot water storage tank connected to a heat pump water heater, *Heat Transfer Engineering*, Vol. 21, No. 2, pp. 67 – 73, 2000.
56. VORSTER PPJ and MEYER JP; Wet compression versus dry compression in heat pumps working with pure refrigerants or non-azeotropic binary mixtures for different heating applications, *International Journal of Refrigeration*, Vol. 23, No. 4, pp. 292-311, 2000.
57. MEYER JP, BUKASA JM and KEBONTE S; Average boiling and condensation heat transfer coefficients of the zeotropic refrigerant mixture R22/R142b in a coaxial tube-in-tube heat exchanger, *Journal of Heat Transfer*, Vol. 122, No. 1, pp. 186-188, 2000.
58. COETZEE S, DA VEIGA WR and MEYER JP; Condensation in an annulus with spiralled wires, *Research and Development Journal*, Vol. 16, No. 3, pp. 51 – 54, 2000.
59. MEYER JP; A review of domestic hot-water consumption in South Africa, *Research and Development Journal*, Vol. 16, No. 3, pp. 55 – 61, 2000.
60. DE SWARDT CA and MEYER JP; A performance comparison between an air-source and a ground-source reversible heat pump, *International Journal of Energy Research*, Vol. 25, No. 10, pp. 899 – 910, 2001
61. MEYER JP and WOOD CW; The design and experimental verification of heat exchanger accumulators used in small commercially available air conditioning systems, *International Journal of Energy Research*, Vol. 25, No. 10, pp. 911 – 925, 2001.
62. MEYER JP; The performance of the refrigerants R-134a, R-290, R404A, R-407c and R-410A in air conditioners and refrigerators, *Strojniški Vestnik - Journal of Mechanical Engineering*, Vol. 47, No. 8, pp. 366 – 373, 2001.
63. DE SWARDT CA and MEYER JP; A performance comparison between an air-source and a ground-source reversible heat pump, *Strojniški Vestnik - Journal of Mechanical Engineering*, Vol. 47, No. 8, pp. 519 - 526, 2001.
64. SMIT FJ and MEYER JP; Condensation heat transfer coefficients of the zeotropic refrigerant mixture R-22/R-142b, *International Journal of Thermal Sciences*, Vol. 41, No. 7, pp. 625 – 630, 2002.
65. SMIT FJ and MEYER JP; R-22 and Zeotropic R-22/R-142b mixture condensation in micro fin, high-fin and twisted tape insert tubes, *Journal of Heat Transfer*, Vol. 124, No. 5, pp. 912 – 921, 2002.
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67. SMIT FJ, THOME JR and MEYER JP; Heat transfer coefficients during condensation of the zeotropic refrigerant mixture HCFC-22/HCFC-142b, *Journal of Heat Transfer*, Vol. 124, No. 6, pp. 1137 – 1146, 2002.
68. DIRKER J and MEYER JP; Heat transfer coefficients in concentric annuli, *Journal of Heat Transfer*, Vol. 124, No. 6, pp. 1200 – 1202, 2002.
69. SMITH C, COETZEE PP and MEYER JP; The effectiveness of a magnetic physical water treatment device on scaling in domestic hot-water storage tanks, *Water SA*, Vol. 29, No. 3, pp. 231 – 236, 2003.
70. COETZEE H, LIEBENBERG L and MEYER JP; Angled spiralling tape inserts in a heat exchanger annulus, *R & D Journal*, Vol. 19, No. 2, pp 3 – 10, 2003.
71. DIRKER J and MEYER JP; Convection in concentric annular regions for turbulent flow of liquid water, *R & D*

Journal, Vol. 19, No. 2, pp. 17 – 21, 2003.

72. COETZEE H, LIEBENBERG L and MEYER JP; Heat transfer and pressure drop characteristics of angled spiralling tape inserts in a heat exchanger annulus, *Heat Transfer Engineering*, Vol. 24, No. 6, pp 29 – 39, 2003.
73. BUKASA JP, LIEBENBERG L and MEYER JP; Heat transfer performance during condensation inside spiralled micro-fin tubes, *Journal of Heat Transfer*, Vol. 126, No. 3, pp 321 – 328, 2004.
74. DIRKER J, VAN DER VYVER H and MEYER JP; Convection heat transfer in concentric annuli, *Experimental Heat Transfer*, Vol. 17, No 1, pp. 19 – 29, 2004.
75. OLIVIER JA, LIEBENBERG L, KEDZIERSKI MA, and MEYER JP; Pressure drop during refrigerant condensation inside horizontal smooth, helical micro-fin, and herringbone micro-fin tubes, *Journal of Heat Transfer*, Vol. 126, No. 5, pp. 687 – 696, 2004.
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