

# Curriculum Vitae of Anton Herman Basson

22 February 2018

## 1. Personal Details

ORCID: <http://orcid.org/0000-0001-7998-330X>

Birth: 8 March 1959 in Port Elizabeth, South Africa

Citizen of South Africa

## 2. Academic Qualifications

- 2016 Leadership Certificate on Curriculum and Pedagogy in Higher Education, Univ of British Columbia (Canada)
- 1992 PhD Aerospace Engineering, Penn State Univ (USA)
- 1987 MEng Mechanical (Aeronautical), Stellenbosch Univ
- 1981 HonsBEng Mechanical (Aeronautical), Stellenbosch Univ

## 3. Professional Registration

Registered as a Professional Engineer in 1987 (no 870466)

## 4. Professional Experience

- Jul 1982 – Dec 1983: Assistant Lecturer in Aeronautics, Military Academy, Saldanha
- Jan 1984 – Apr 1987: Engineer, NIAST, CSIR, Pretoria
- May 1987 – Dec 1991: Engineer, Bureau for Mech Eng (BMI), Stellenbosch Univ
- Jan 1992 – Sep 1992: Group Manager, BMI, University of Stellenbosch
- Oct 1992 – Mar 1993: Co-founder and Partner: TF Design cc
- Apr 1993 – Dec 1996: Asso. Professor, Dept of Mechanical Eng, Stellenbosch Univ
- Jan 1997 – present: Professor in Mechanical Engineering (Mechanical Design)
- July 1998 – Dec 2000: Chairman, Dept of Mechanical Eng, Stellenbosch Univ
- Jan 2001 – Dec 2004: Director: Inst for Thermodynamics and Mechanics, Stellenbosch Univ
- Jan 2005 – Dec 2010: Chairman, Dept of Mechanical & Mechatronic Eng, Stellenbosch Univ
- Jan 2011 - Jun 2011: Acting Chairman, Dept of Mechanical and Mechatronic Eng, SU
- Oct 2012 - present: Vice-dean (Teaching and Quality Assurance), Faculty of Eng, SU

Other relevant experience:

2014 to present: Member of Senate's Committee for Teaching and Learning

2015: Member of task team for student feedback system

2015: Convenor of task team for the promotion and recognition of teaching

2016: Member of task team for the revision of the language policy

2016: Convenor of task team for allowing students refused readmission to register as special students

2016: Member of task team for revision of policy for recognition of prior learning

Up to 2000: Lead the introduction of the BEng Mechatronics programme

2015: Initiated the introduction of industry internship in the BEng programmes

2016: Initiated the introduction of internship for international exchange and industry internship in BEng programmes; subsequently initiated discussions with Rensselaer Polytechnic Institute in the USA and Linnaeus University in Sweden for exchange programmes

2016: Leading, in collaboration with Prof M Nieuwoudt, the introduction of PGDip(Eng), MEng (Structured), MEng (Research) and PhD programmes in biomedical engineering

2016: Leading a research project into the factors that affect persistence or departure of BEng students from previously disadvantaged groups

2016: Leading the introduction of an annual graduate survey for the Engineering Faculty

## **5. Personal Awards**

1997 Lecturer of the year, Engineering Faculty, University of Stellenbosch

2010 Rector's Award for Excellence in Education, University of Stellenbosch

2013, 2014, 2015 annual Rector's Award for General Performance, University of Stellenbosch

2016 Chancellor's Award for sustained excellent career performance, University of Stellenbosch

## **6. National Research Foundation Evaluation**

Evaluated as a Y-category researcher by FRD on 30 October 1995

Evaluated as a C3-category researcher by NRF: 23 June 2000 to Dec 2010

Evaluated as a C2-category researcher by NRF: November 2011 to December 2017

## **7. Membership of Professional Bodies**

### **7.1. Committees of the Engineering Council of South Africa**

Oct 1995 to April 2017: Member of the Professional Advisory Committee for Aeronautical Engineering

Oct 2001 to Feb 2013: Chairman of the Professional Advisory Committee for Aeronautical Engineering

Feb 2013 to April 2017: Member of the Engineering Programme Accreditation Committee, Engineering Council of South Africa

### **7.2. Accreditation Teams of the Engineering Council of South Africa**

Oct 2002: Member, Aeronautical Engineering, Witwatersrand University

Sept 2007: Member, Aeronautical Engineering, Witwatersrand University

Sept 2010: Member, Mechatronic Engineering, University of Cape Town

Sept 2012: Member, Mechatronic Engineering, University of Cape Town

Sept 2012: Team leader, Aeronautical Engineering, Witwatersrand University

Sept 2016: Member, Mechanical Engineering, University of Johannesburg

Sept 2017: Team leader, Aeronautical Engineering, Witwatersrand University

### **7.3. Membership of Learned Societies**

Current: Member of SA Institution of Mechanical Engineering (20621)

Current: Member of Aeronautical Society of South Africa (364219)

Jun 2011 to Sept 2012: Member of the Board of the Aeronautical Society of SA

### **7.4. Peer Reviewed Journals**

1998 to present: Member of Editorial Board of Journal of Engineering Design

2015, 2016: Reviewed papers for the Journal of Engineering Design, International Journal of Computer Integrated Manufacturing, Computers in Industry, Journal of Intelligent Manufacturing

### **7.5. International conferences**

2001: Member of Advisory Panel, International Conference on Engineering Design 2001, Glasgow

2003: Member of Advisory Panel, International Conference on Engineering Design 2003, Stockholm

2004: Member of International Programme Committee, International Conference on Competitive Manufacturing, 2004, Stellenbosch

2007: Co-chairman and member of the International Programme Committee, International Conference on Competitive Manufacturing 2007, Stellenbosch, South Africa

2007: Member of the International Programme Committee and Session Co-Chairman, International Conference on Engineering Design, ICED'07, Paris, France

2009: Reviewer for International Symposium on Tools and Methods of Competitive Engineering, TMCE 2010, Ancona Italy

2010: Co-chairman and member of the International Programme Committee, International Conference on Competitive Manufacturing 2010, Stellenbosch, South Africa.

2013: Member of the International Programme Committee, International Conference on Competitive Manufacturing 2013, Stellenbosch, South Africa

2016: Member of the International Programme Committee, International Conference on Competitive Manufacturing 2016, Stellenbosch, South Africa

## **8. Chapters in Books**

1. Schueller, A. and Basson, A.H. "Case Study on Low Cost Distributed Design Support for Small Teams", in "*Methods and Tools for Co-operative and Integrated Design*" edited by Tichkiewitch S. and Brissaud D., Kluwer Academic, 2004, pp. 425-436.
2. Kruger, K and Basson, AH "Implementation of an Erlang-based Resource Holon for a Holonic Manufacturing Cell", *Studies in Computational Intelligence*, Springer, Vol. 594, pp 49-58, 2015.

## 9. Journal Papers

1. Basson, AH, Von Backström, TW and Du Plessis, JP "Numerical Prediction of Two-Dimensional Axial Turbomachinery Cascade Flows", *Aeronautica Meridiana*, Vol 10, 1992, pp 115-127.
2. Basson, AH, Kunz, RF and Lakshminarayana, B "Grid Generation for Three-Dimensional Turbomachinery Geometries Including Tip Clearance", *AIAA Journal of Propulsion and Power*, Vol 9, No 1, 1993.
3. Kunz, RF, Lakshminarayana, B and Basson, AH "Investigation of Tip Clearance Phenomena in an Axial Compressor Cascade Using Euler and Navier-Stokes Procedures", *ASME Journal of Turbomachinery*, Vol 113, No3, Jul 1993, pp 453-467.
4. Basson, AH and Lakshminarayana, B "An Artificial Dissipation Formulation for a Semi-Implicit, Pressure Based Solution Scheme for Viscous and Inviscid Flows", *Int Journal of Computational Fluid Dynamics*, Vol 2, 1994, pp 253-282.
5. Basson, A and Lakshminarayana, B "Numerical Simulation of Tip Clearance Effects in Turbomachinery", *ASME Journal of Turbomachinery*, Vol 117, No 3, Jul 1995, pp 348-359.
6. Schuster, HR and Basson, AH "Aspects of SUNSAT Main Structure Design and Manufacturing", *R&D Journal, SA Inst Mech Eng*, Vol 11, No 2, 1995, pp 21-28.
7. Van der Westhuizen, K, Basson, AH and Schuster, HR "SUNSAT Baseplate Design, Finite Element Analysis and Manufacturing", *R&D Journal, SA Inst Mech Eng*, Vol 11, No 3, 1995, pp 51-60.
8. Maree, WG and Basson, AH "Design for Fabrication Early Cost Estimation for Small Production Volume", *CIRP Proceedings – Manufacturing Systems*, Vol 26, No 2, 1997, pp 95-100.
9. Schreve, K, Schuster, H and Basson, AH "Manufacturing Cost Estimation during Design of Fabricated Parts", *Journal of Engineering Manufacture, Proc IMechE Part B*, Vol 213, No B7, 1999, pp731-735.
10. Goussard, CL and Basson, AH, "Semi-automatic extraction of primitive geometric entities from unstructured point clouds", *Journal of Engineering Manufacture, Proc IMechE Part B*, Vol 217, No B10, 2003, pp1491-1495.
11. Schreve, K and Basson, AH "Small Volume Fabrication Cost Estimation Models for Embodiment Design", *R&D Journal*, Vol 20, No 1, 2004, pp 9-15.
12. Schreve, K and Basson, AH "Edge detection in reverse engineering using a scanning approach. Part 1: scanning algorithm", *International Journal of Advanced Manufacturing Technology*, Vol 26, No 9-10, 2005, pp 1048-1054.
13. Schreve, K and Basson, AH "Edge detection in reverse engineering using a scanning approach. Part 2: testing, including design of experiments", *International Journal of Advanced Manufacturing Technology*, Vol 26, No 9-10, 2005, pp1055-1062.
14. Scheffer, C and Basson, AH "A simulation model to improve pneumatic intensifier performance and reliability", *Journal of the SA Inst of Mining and Metallurgy*, Vol 105, No 4, 2005, pp 265-274.
15. Coetzee, CJ, Vermeer, PA and Basson, AH "The Modelling of Anchors Using the Material Point Method", *International Journal for Numerical and Analytical Methods in Geomechanics*, Vol 29, 2005, pp879-895.

16. Coetzee, CJ, Basson, AH and Vermeer, PA "Discrete and Continuum Modelling of Silo Discharge", R&D Journal, SA Inst Mech Eng, Vol 22, No 2, 2006, pp26-38.
17. Schreve, K, Goussard, CL, Basson, AH and Dimitrov, D "Interactive Feature Modeling for Reverse Engineering", Journal of Computing and Information Science in Engineering, Vol 6, No 4, 2006, pp 422-424.
18. Coetzee, CJ, Basson, AH and Vermeer, PA "Discrete and Continuum Modelling of Excavator Bucket Filling", Journal of Terramechanics, Vol 44, No 2, 2007, pp177-186.
19. Goussard, CL and Basson, AH "Cavity Pressure Estimation for a Piston Moulding Life Cycle Model", Journal of Mechanical Engineering, Slovenia, Vol 53, No 7-8, 2007, pp 491-502.
20. De Jongh, CU, Basson, AH and Scheffer, C "Predictive Modelling of Cervical Disc Implant Wear", Journal of Biomechanics, Vol 41, 2008, pp 3177-3183.
21. Busch, AC, Scheffer, C and Basson, AH "Development and Testing of a Prototype Reflex Measurement System Employing Artificial Neural Networks", Computer Methods and Programs in Biomedicine, Vol 94, 2009, pp 15–25.
22. Kruger, K and Basson, AH, "Implementation of an Erlang-based Resource Holon for a Holonic Manufacturing Cell", Studies in Computational Intelligence, 2014, Vol 594, pp 49-58.
23. Hoffman, AJ and Basson, AH "IEC 61131-3-Based Holonic Control of a Reconfigurable Manufacturing Subsystem", International Journal of Computer Integrated Manufacturing, Vol 29(5), 2016, pp 520-534, DOI 10.1080/0951192X.2015.1067915.
24. Kruger, K and Basson, AH "Erlang-based Control Implementation for a Holonic Manufacturing Cell", International Journal of Computer Integrated Manufacturing, Vol 30, No 6, 2017, pp 641–652. Online <http://dx.doi.org/10.1080/0951192X.2016.1195923>.

## **10. Papers in Conference Proceedings**

1. Basson, AH "Short Life Turbine Design, Analysis and Manufacturing for Advanced RPV Engines", Proceedings of the 7th RPE Symposium, CSIR, Pretoria, April 1986.
2. Basson, AH "Numerical Prediction of Two-Dimensional Axial Turbomachinery Cascade Flows", Proceedings of the First South African Aeronautical Engineering Conference, CSIR, Pretoria, May 1988.
3. Basson, AH, Kunz, RF and Lakshminarayana, B "Grid Generation for Three-Dimensional Turbomachinery Geometries Including Tip Clearance", AIAA Paper 91-2360, 27th Joint Propulsion Conference, Sacramento, CA, 24-26 June 1991.
4. Kunz, RF, Lakshminarayana, B and Basson, AH "Investigation of Tip Clearance Phenomena in an Axial Compressor Cascade Using Euler and Navier-Stokes Procedures", ASME paper 92-GT-299, 37th International Gas Turbine and Aeroengine Congress and Exposition, Cologne, Germany, 1992.
5. Basson, A and Lakshminarayana, B "Numerical Simulation of Tip Clearance Effects in Turbomachinery", ASME paper 93-GT-316, ASME Turbo Expo, International Gas Turbine Institute, Cincinnati, Ohio, USA, 1993.
6. Basson, AH and Lakshminarayana, B "Artificial Dissipation Terms for a Semi-Implicit, Pressure Based Solution Scheme", 3rd National CFD Symposium, Stellenbosch, 1993.

7. Maree, WG and Basson, AH "Design for Fabrication Early Cost Estimation for Small Production Volume", Proceedings of the 28th CIRP International Seminar on Manufacturing Systems, RAU, Johannesburg, May 1996, pp76-82.
8. Veldsman, G, Basson, AH and Van der Westhuizen, J "Composite Mould Design and Cost Estimation for Resin Transfer Moulding", Proceedings of the 1st International Conference on Composite Science and Technology, Durban, June 1996, pp 571-576.
9. Schuster, HR and Basson, AH "A Software 'Design Assistant' for Specification Development", Proceedings of the 22nd ASME Design Automation Conference, DETC, Irvine, California, August 1996, published on CD Rom.
10. Basson, AH and Schuster, HR "A Procedure and Software Tool for Manufacturability Assessment during Embodiment Design", Proceedings of the CIRP STC Design Seminar on New Tools and Workflows for Product Development, Berlin, May 1998, pp 37-48.
11. Veldsman, G and Basson, AH "The Role of Cost Estimation in Design for RTM", Proceedings of the 8<sup>th</sup> European Conference on Composite Materials, Naples, June 1998, pp 479-486.
12. Schreve, K, Schuster, HR and Basson, AH "Manufacturing Cost Estimation during Design of Fabricated Parts", Proceedings of the Engineering Design Conference '98 on Design Reuse, Brunel Univ, UK, 1998, pp 437-444.
13. Veldsman, G, Basson, AH "Cost Comparison of RTM Hand-Lay and Cast Tooling", 2nd International Conference on Composite Science and Technology, ICCST/2, Durban, SA, 1998, pp 483-488.
14. Basson, AH and De Swardt, AV "Estimation of Tack-Welding and Welding Cost During Design of Heavy Earthmoving Equipment", Proceedings of the 1999 CIRP International Design Seminar, Enschede, Netherlands, 1999, pp 299-308.
15. Veldsman, G and Basson, AH "Design for RTM Using Manufacturing Cost Estimation Models", Proceedings of the 1999 CIRP International Design Seminar, Enschede, Netherlands, 1999, pp 321-330.
16. Schreve, K and Basson, AH "Edge Detection in Reverse Engineering using a Virtual CMM", Paper DETC'00/DAC-14540, Proceedings of the 26th ASME Design Automation Conference, Baltimore, September 2000, published on CD Rom.
17. Groenewald, A, Basson, AH and Dobson, RT "Theoretical Modelling and Numerical Simulation for Two-phased Closed Thermosyphon considering Splashing and Geysering", Proceedings of the 6<sup>th</sup> Int Heat Pipe Symposium, Chiang Mai, Thailand, 5-9 November 2000.
18. Goussard, CL and Basson, AH "Semi-automatic Extraction of Primitive Geometric Entities from Point Clouds", Proceedings of the 2001 CIRP Int Design Seminar, Stockholm, Sweden, June 2001, pp 359-364.
19. Liu, Y and Basson, AH "Interfacing CAD and Manufacturing Cost Estimation Software using COM/OLE", Proceedings of the 2001 CIRP Int Design Seminar, Stockholm, Sweden, June 2001, pp 289-294.
20. Schueller, A and Basson, AH "Case Study on Synchronous and Asynchronous Collaboration in Distributed Conceptual Design", Proceedings of the 2001 CIRP Int Design Seminar, Stockholm, Sweden, June 2001, pp 435-440.

21. Schueller, A and Basson, AH "A Framework for Distributed Conceptual Design", Design Management - Process and Information Issues, Proceedings of the 13th Int Conference on Engineering Design ICED 01, Professional Engineering Pub for IMechE, Glasgow, August 2001, pp 385-391.
22. Schueller, A and Basson, AH "Case Study on Low Cost Distributed Design Support for Small Teams", Proceedings of the 2003 Int CIRP Design Seminar, Grenoble, France, May 2003.
23. Liu, Y and Basson, AH "Case Study in Using COM (OLE) to Link CAD and Manufacturing Cost Estimation Software", Proceedings of the International Conference on Competitive Manufacturing COMA 04, Stellenbosch, February 2004, pp 169-174.
24. Basson, AH, Bonnema, GM and Liu, Y "A Flexible Electro-Mechanical Design Information System", Proceedings of the Fifth International Symposium on Tools and Methods of Competitive Engineering TMCE 2004, Lausanne, Switzerland, April 2004, pp 879-890.
25. Dymond, JAD and Basson, AH "A Computational Model for Mould Filling in Lomolding and Injection Moulding", Proceedings of the 5<sup>th</sup> SA Conf in Computational and Applied Mechanics, SACAM06, Cape Town, January 16-18, 2006, pp 404-412.
26. Goussard, CL and Basson, AH "Cavity Pressure Estimation for a Piston Moulding Life Cycle Model", Proceedings of the 6<sup>th</sup> International Symposium on Tools and Methods of Competitive Engineering, TMCE 2006, Ljubljana, Slovenia, April 18–22, 2006, pp 767-774.
27. Goussard, CL and Basson, AH "Parametric Design Model for the Optimisation of a Piston Moulding Machine", Proceedings of the 2006 CIRP Design Seminar, Kananaskis, Canada, pp 786-792 (786\_10147.pdf on CD Rom).
28. Schreve, K and Basson, AH "Edge Detection and Draft Angles in Feature Based Reverse Engineering", COMA 07, Stellenbosch, February 2007.
29. Liu, Y and Basson, AH "An Ontology Based Approach to a Flexible Aid for Mechanical Conceptual Design", Proceedings of the International Conference on Engineering Design, ICED'07, Paris, 2007.
30. Goussard, CL and Basson, AH "Concept Evaluation and Layout Design of a Piston Moulding Machine", Proceedings of the International Conference on Engineering Design, ICED'07, Paris, 2007.
31. De Jongh, CU, Basson, AH and Scheffer, C "Dynamic simulation of cervical spine following single-level cervical disc replacement", 29<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology (EMBS), Lyon, France, 2007, pp 4289-4292.
32. Dymond, FSD, Basson, AH and Kim, Y "Design of a Fixtureless Reconfigurable Automated Spot Welding Assembly System", Proceedings of the 2<sup>nd</sup> Robotics & Mechatronics Symposium, Bloemfontein, November 2008, pp 12-17.
33. Du Preez, N, Basson, A, Lutters, D and Nieberding, H "Structuring the Development Process According to the Project Context: Two Case Studies", Proceedings of the Portland International Conference on Management of Engineering & Technology, PICMET 2008, pp 1189-1205

34. Egbuna, C and Basson, AH "Electric Actuator Selection Design Aid for Low Cost Automation", Proceedings of the International Conference on Engineering Design ICED'09, Stanford, USA, August 2009, pp 6-43 to 6-54.
35. Sequeira, MA and Basson, AH "Case Study of a Fixture-Based Reconfigurable Assembly System", Proceedings of 2009 IEEE International Symposium on Assembly and Manufacturing, Suwon, Korea, 17-20 November 2009.
36. Dymond, FSD, Basson, AH and Kim, Y "Conceptual Design of a Fixtureless Reconfigurable Automated Assembly System", COMA '10 International Conference on Competitive Manufacturing, Stellenbosch, South Africa, 3-5 February 2010, pp 33-38.
37. Dimitrov, D, Du Preez, ND, Basson, AH, Van der Merwe, A, Fourie, CJ, Schreve, K, Scheffer, C "Manufacturing Research at Stellenbosch During the First Decade and Beyond", COMA '10 International Conference on Competitive Manufacturing, Stellenbosch, South Africa, 3-5 February 2010, pp 7-14.
38. Okoloko, I and Basson, AH "Consensus with Collision Avoidance: An LMI Approach", Proceedings of the 5<sup>th</sup> International Conference on Automation, Robotics and Applications (ICARA2011), Wellington, New Zealand, 6-8 December 2011, pp 84-89.
39. Mulibika, C and Basson, AH "Comparison of IEC 61499 and Agent Based Control for a Reconfigurable Manufacturing Subsystem", COMA'13, International Conference on Competitive Manufacturing, Stellenbosch, South Africa, February 2013, pp 283-288.
40. Kruger, K and Basson, AH "Multi-Agent Systems vs IEC 61499 for Holonic Resource Control in Reconfigurable Systems", Forty Sixth CIRP Conference on Manufacturing Systems, Sesimbra, Portugal, Procedia CIRP, Vol. 7, 2013, pp 503–508.
41. Graefe, R and Basson, AH "Control of Reconfigurable Manufacturing Systems using Object-Oriented Programming", Proceedings of the 5th International Conference on Changeable, Agile, Reconfigurable and Virtual Production (CARV2013), Munich, Germany, October 2013, pp 231-236.
42. Hoffman, K, Basson, AH and Le Roux, A "Towards Alternatives for Agent Based Control in Reconfigurable Manufacturing Systems", in Enabling Manufacturing Competitiveness and Economic Sustainability, Proceedings of the 5th International Conference on Changeable, Agile, Reconfigurable and Virtual Production (CARV 2013), Edited by M.F. Zeah; published by Springer Cham Heidelberg New York Dordrecht London, Munich, Germany, October 2013, pp 237-242.
43. Kruger, K and Basson, AH "A Stepped Conveyor Singulator Design for Reconfigurable Assembly", Proceedings of the 5th International Conference on Changeable, Agile, Reconfigurable and Virtual Production (CARV2013), Munich, Germany, October 2013, pp 213-218.
44. Kruger, K and Basson, AH "Implementation of an Erlang-based Resource Holon for a Holonic Manufacturing Cell", Proceedings of the International Workshop on Service Orientation in Holonic and Multi-Agent Manufacturing (SOHOMA'14), Nancy, France, November 2014, published as Studies in Computational Intelligence Vol. 594, pp 49-58, 2015.
45. Masendeke, DM and Basson AH, "Communication in a LabVIEW Based Controller", COMA'16, International Conference on Competitive Manufacturing, Stellenbosch, South Africa, January 2016, pp 267-272.



46. Basson, AH "A Comparison Of Teaching Practices At Some Leading Engineering Faculties", 6th African Engineering Education Association Conference, Bloemfontein, South Africa, September 2016, pp 137-142.
47. Basson, AH, "What should engineers be trained for in SA?", Proceedings of the 4th Biennial Conference of the South African Society for Engineering Education, Cape Town, South Africa, 14-15 June 2017, pp 1-12.
48. Basson, AH, Van der Merwe, A, Bladergroen, M, Wolff, K "Stellenbosch University Engineering Faculty Blended Learning Project: Success Factors for a Faculty-Wide Initiative aligned with Institutional Strategy", Proceedings of ISERD International Conference, Rio de Janeiro, Brazil, 27th-28th August 2017, pp 1-7.
49. Kruger, K, Basson, AH "Erlang-based Holonic Controller for a Modular Conveyor System", Studies in Computational Intelligence: Service Orientation in Holonic and Multi-Agent Manufacturing, Vol 694, Springer, 2017, pp 191-200.
50. Kruger, K, Basson, AH "Validation of a Holonic Controller for a Modular Conveyor System using an Object-oriented Simulation Framework", Studies in Computational Intelligence: Service Orientation in Holonic and Multi-Agent Manufacturing, Vol 694, Springer, 2017, pp 427-435.

## **11. Non-refereed Papers and Presentations**

1. Basson, AH, Kruth, J-P, Vandenhoudt, G, Vandormael, P and Danckaerts, T "Reverse Engineering: A Comparison of Alternative Techniques" , Studiedag presentation, Wetenschappelijk en Technisch Centrum van de Metaalverwerkende Nijverheid (WTCM), Leuven, Belgium, May 1998.
2. Basson, AH "Integrating Design for Manufacturing and Systems Design into Undergraduate Design Courses", Design Teaching Workshop, Univ Witwatersrand, July 1998.
3. Basson, AH "Manufacturing Related Research: A Local View of Present and Future", Manufacturing, Materials and Mechanics Seminar, UCT, October 2000.
4. Basson, AH, Treurnicht, NF, De Kock EA and Schrueder, EA, "Automated proton compensator manufacturing using continuous cutting", Proton Therapy Co-Operative Group XXXIV, Boston, Massachusetts, USA, June 11-13, 2001.
5. Basson, AH, Treurnicht, NF, "Application of a Discrete Approximation Approach to CNC Path Generation for the Manufacture of Proton Compensators for Cancer Treatment", 17<sup>th</sup> SA Inst for Indust Eng Conference, Stellenbosch, Sept 18-20, 2002, pp33-42.

## **12. Products developed**

### NCBlade

Software to create cutter paths for cutting blade or wing profiles on computer numerical control (CNC) milling machines.

### DiDeas II

Software to analyse the manufacturability of parts based on an analysis of their manufacturing cost.

### **13. PHD Dissertation**

Numerical simulation of steady three-dimensional flows in axial turbomachinery bladerows

### **14. Thesis Supervision of Postgraduate Students**

Graduated PhD students:

Dr H Schuster (graduated December 1997)  
Dr K Schreve (graduated March 2002)  
Dr A Schueller (graduated March 2002)  
Dr CJ Coetzee (graduated April 2004)  
Dr Y Liu (graduated December 2007)  
Dr CL Goussard (graduated April 2008)  
Dr H Nieberding (graduated March 2010); co-supervisor with Prof ND du Preez  
Dr I Okoloko (Graduated December 2013), co-supervised with Dr Y Kim  
Mr K Kruger (Graduated March 2018)

Graduated MEng (thesis research) and MSc Eng students:

Mr DNJ Els (graduated March 1996)  
Mr G Veldsman (graduated March 1996)  
Mr W Maree (graduated March 1997)  
Mr SWP Esterhuyse (graduated December 1997)  
Mr K Schreve (graduated March 1998)  
Mr AV de Swardt (graduated December 1998)  
Mr C Goussard (graduated December 2001)  
Mr Y Liu (graduated December 2001)  
Mr JAD Dymond (graduated December 2004)  
Mr B Johnson (graduated MSc PolSc Dec 2006); co-supervised with Prof R Sanderson  
Mr C de Jongh (graduated Dec 2007); co-supervised with Prof Cornie Scheffer  
Mr A Busch (graduated March 2008); co-supervised with Prof Cornie Scheffer  
Mr C Egbuna (graduated March 2008)  
Mr MA Sequeira (graduated December 2008)  
Mr FSD Dymond (graduated December 2009); co-supervised with Dr Y Kim  
Mr A Adams (graduated December 2010)  
Mr J Atkinson (graduated December 2012)  
Mr K Kruger (graduated March 2013)  
Mr C Mulubika (graduated March 2013)  
Mr R van der Merwe (graduated December 2013)  
Mr A le Roux (graduated December 2013)  
Mr AJ Hoffman (graduated December 2014)  
Mr G Claassen (graduated March 2015)  
Mr D Masendeke (graduated March 2015)  
Mr C Steed (graduated March 2016)  
Mr R Graefe (graduated December 2016)  
Mr M Kotze (graduated December 2016)  
Mr MM Deacon (graduated March 2017)  
Mr PJ Havenga (graduated March 2017)  
Mr JC Leuvenink (graduated March 2018); main supervisor is Mr K Kruger

Current PhD students:

Mr GT Hawkrige (converted from masters December 2017); with Mr K Kruger as co-supervisor

Current MEng (thesis research) students:

Mr CS van den Berg (started February 2015)

Mr GT Hawkrige (started February 2016); with Mr K Kruger as co-supervisor

Mr AJH Redelinguys (started February 2017); with Mr K Kruger as co-supervisor

Mr D Fölcher (started February 2017); main supervisor is Mr K Kruger