

Education

- **Stellenbosch University** Stellenbosch, South Africa
Postdoctoral fellow 2017 - ongoing
 - Postdoctoral fellow at the department of Mechanical and Mechatronic Engineering, Stellenbosch University; Research focus on pressurized air receiver development for concentrating solar power plants.
 - Research Group Coordinator of the Solar Thermal Energy Research Group (STERG) at the Department of Mechanical and Mechatronic Engineering
 - Host: Prof. Theodor W von Backström
- **Stellenbosch University** Stellenbosch, South Africa
Ph.D. Mechanical Engineering 2012 - March 2017
 - Member of the Solar Thermal Energy Research Group (STERG) at the Department of Mechanical and Mechatronic Engineering
 - Research on the performance of a novel central receiver concept – the Spiky Central Receiver Air Pre-heater (SCRAP) – for a concentrating solar power (CSP) plant
 - Supervisors: Prof. Theodor W von Backström, Prof. Thomas M Harms
- **Stellenbosch University** Stellenbosch, South Africa
MEng Mechanical Engineering 2010 - 2012
 - Graduated with Cum Laude
 - Research on the feasibility of a concentrating solar power system for an application in the Western Cape with the title: *A pre-feasibility study of a concentrating solar power system to offset electricity consumption at the Spier Estate*
 - Supervisors: Prof. Theodor W von Backström, Mr. Paul Gauché
- **Automotive Components Technology Station (ACTS)** Port Elizabeth, South Africa
Internship abroad at NMMU 2008
 - Internship abroad at the Automotive Components Technology Station (ACTS) based at the Nelson Mandela Metropolitan University (NMMU)
 - FEA analysis of a spot welding gun and recommendation of design improvements
 - Supervisors: Prof. Danie Hattingh
- **University of Sydney** Sydney, Australia
Study semester abroad 2006 - 2007
 - Self organized semester to pursue studies at the University of Sydney
- **University of Applied Sciences Esslingen** Esslingen, Germany
Dipl.-Ing.(FH) Automotive Engineering 2004 - 2008
 - Graduated ranked as second best student in my program of study with a final mark of 1.4
 - Diploma thesis on electrically driven hardtop roof of a convertible: *Conception, construction and integration of an electrically-driven retractable hardtop using Catia V5 and SimDesigner*, with final mark of 1.0
 - Supervisors: Prof. Jürgen Haag, Mr. Matthias Rupp

Work Experience

- **Industry Consultant, Stellenergy (pty) ltd.** Stellenbosch, South Africa
Energy Yield Assessment 2017
 - Energy Yield Assessment on a CSP power plant for a CSP plant developer.
- **Assisting planning and organization, SolarPACES2015** Cape Town, South Africa
Assisting overseas conference organizer during planning and the event 2015
 - Planning and executing the conference technical tour
 - Planning and assisting with, amongst others, food selection, spatial arrangements, audiovisual media, entertainment, etc.
- **Industry Consultant, Stellenbosch Energy Consulting** Stellenbosch, South Africa
Impact assessment and mitigation plan for CSP developer 2014
 - Study for an international CSP power plant developer on impact and possible mitigation of dust as by-product of a mining activity nearby a CSP plant onto plant performance
- **Coordinator of STERG operations committee** Stellenbosch, South Africa
Improvement of internal affairs in the research group 2014
 - The work of the committee improved general work environment and academic quality of research within the group
 - The work in particular included organization of the *2nd annual STERG SolarPACES Symposium*
- **Industry Consultant, in2p GmbH** Fellbach, Germany
Development of a vibration damping device 2009 - 2010
 - Consulting for the engineering service provider in2p GmbH in Fellbach, Germany, at the concept stage of developing a vibration damping transport table for incubator road transport of premature infants in purpose built ambulance vehicles
- **Freelance Engineer** Esslingen, Germany
Development of a demonstration combustion motor 2009
 - Development and manufacturing of mechanic components of an interactive demonstration model of a combustion motor for academic purposes
- **Research Engineer, Fuel Cell Institute** Esslingen, Germany
Project development, student supervision 2009
 - Employee at Fuel Cell Institute at the University of Applied Sciences Esslingen, active in various projects including student supervision.
- **Project leader, Rennstall Esslingen** Esslingen, Germany
Development of frame design, ergonomics and FEA 2007 - 2008
 - Design, analysis and development of the frame of the Rennstall Esslingen's 2008 Formula SAE race car

Awards and Scholarships

- **Scholarship holder of Ph.D. bursary through Eskom EPPEI program**
Scholarship awarded by ESKOM chair in Concentrating Solar Power 2012 - 2015
- **Scholarship holder of the Stellenbosch University's Merit bursary**
Scholarship for Ph.D. studies, awarded based on academic excellence 2012 - 2015
- **Award for best MEng project in Renewable Energies**
Award given by the Department of Mechanical and Mechatronic Engineering 2011
- **Award for graduating *cum laude***
Award given by the Department of Mechanical and Mechatronic Engineering 2011
- **Scholarship holder of the German Academic Exchange Service (DAAD)**
Scholarship for MEng studies at Stellenbosch University 2010 - 2011

Peer reviewed publications

1. M Lubkoll, TM Harms, and TW von Backström (2018, in print). *Performance Prediction of the SCRAP Pressurized Air Receiver*. AIP Conference Proceedings.
2. L Heller, KG Allen, M Lubkoll, J-FP Pitot de la Beaujardiere, P Gauché, J Hoffmann (2017). *The SUNDISC cycle: A direct storage-charging dual-pressure air receiver cycle*. Journal of Solar Energy. 153:435-444.
3. M Lubkoll, TM Harms, and TW von Backström (2017). *Introduction to Heat Transfer Test Setup for the SCRAP Receiver*. AIP Conference Proceedings.
4. M Lubkoll, TM Harms, and TW von Backström (2016). *Introduction to Heat Transfer Test Setup and Manufacturing Process for the SCRAP Receiver*. In proceedings of SASEC 2016. Stellenbosch, South Africa.
5. M Lubkoll, TW von Backström and TM Harms (2016). *Performance outlook of the SCRAP receiver*. AIP Conference Proceedings 1734
6. M Lubkoll, TW von Backström, TM Harms and DG Kröger (2015). *Initial analysis on the novel Spiky Central Receiver Air Pre-heater (SCRAP) pressurized air receiver*. Energy Procedia, 69, pp. 461-470.
7. M Lubkoll, TW von Backström and DG Kröger (2014). *Survey on Pressurized Air Receiver Development*. In proceedings of SASEC 2014. Port Elizabeth, South Africa.
8. M Lubkoll, P Gauché and AC Brent (2012). *Localisation Potential of Linear Fresnel CSP in South Africa*. In proceedings of SASEC 2012. Stellenbosch, South Africa.
9. M Lubkoll, P Gauché and AC Brent (2011). *A pre-feasibility study of a concentrating solar power system to offset electricity consumption at the Spier Estate*. In proceedings of ISES Solar World Congress 2011. Kassel, Germany.

Presentations

1. M Lubkoll, TM Harms, and TW von Backström (2017). *Performance Prediction of the SCRAP Pressurized Air Receiver*. SolarPACES conference, Santiago de Chile.
2. M Lubkoll, TM Harms, and TW von Backström (2016). *Introduction to Heat Transfer Test Setup for the SCRAP Receiver*. SolarPACES conference, Abu Dhabi.
3. M Lubkoll, TM Harms, and TW von Backström (2016). *Introduction to Heat Transfer Test Setup and Manufacturing Process for the SCRAP Receiver*. SASEC2016, Stellenbosch.
4. M Lubkoll, TW von Backström and TM Harms (2015). *Performance outlook of the SCRAP receiver*. SolarPACES conference, Cape Town.
5. M Lubkoll, TW von Backström and TM Harms (2015). *Introduction of the Spiky Central Receiver Air Pre-heater (SCRAP)*. Second Eskom Power Plant Engineering Institute Student Workshop - Eskom Academy of Learning, Midrand.
6. M Lubkoll, TW von Backström, TM Harms and DG Kröger (2014). *Initial analysis on the novel Spiky Central Receiver Air Pre-heater (SCRAP) pressurized air receiver*. SolarPACES conference, Beijing.
7. M Lubkoll, TW von Backström and DG Kröger (2014). *Survey on Pressurized Air Receiver Development*. SASEC2014, Port Elizabeth.
8. M Lubkoll, P Gauché and AC Brent (2012). *Localisation Potential of Linear Fresnel CSP in South Africa*. SASEC 2012, Stellenbosch.
9. M Lubkoll, P Gauché and AC Brent (2011). *A pre-feasibility study of a concentrating solar power system to offset electricity consumption at the Spier Estate*. ISES Solar World Congress 2011, Kassel.

Skills

- **Development:** scilab, ANSYS Fluent, Tonatiuh, CATIA, Inventor, L^AT_EX
- **Languages:** English (fluent), German (mother tongue), Afrikaans (basics)

References

- **Prof Theodor W von Backström** Ph.D. supervisor
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- Prof TM Harms** Ph.D. supervisor
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- Dr Paul Gauché** MEng supervisor
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