

# **CURRICULUM VITAE OF PIETER HERMAN NEETHLING**

## **Personal information:**

Surname: Neethling  
First names: Pieter Herman

## **Academic history:**

- 1998
  - Matriculated from Paul Roos Gymnasium, 98% aggregate  
6 A's
- 2001
  - Achieved BSc Cum Laude – University of Stellenbosch
- 2002
  - Achieved BSc Hons Cum Laude – University of Stellenbosch
- 2005
  - Achieved MSc Cum Laude – University of Stellenbosch

## **Prizes and awards:**

- 1996
  - Academic colours – Stellenberg High School
  - Hockey colours – Stellenberg High School
- 1998
  - Full Academic colours – Paul Roos Gymnasium
  - Subject Prize: Afrikaans First Language HG – Paul Roos Gymnasium
  - Subject Prize: Natural Science HG – Paul Roos Gymnasium
- 1999
  - Merit bursary – University of Stellenbosch
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  - Merit bursary – University of Stellenbosch
- 2002
  - Merit bursary – University of Stellenbosch
- 2003
  - Merit bursary – University of Stellenbosch
  - Prize for best poster presentation by a MSc student in Lasers, Optics and Spectroscopy – South African Institute of Physics 48<sup>th</sup> annual conference held in Stellenbosch
- 2004
  - Merit bursary – University of Stellenbosch

- Prize for best poster presentation by a MSc student in Lasers, Optics and Spectroscopy – South African Institute of Physics 49<sup>th</sup> annual conference held in Bloemfontein
  - 2<sup>nd</sup> Prize for presentation at the South African Spectroscopic Society's Young Spectroscopist Symposium
- 2005
- Merit bursary – University of Stellenbosch
  - NRF Prestigious bursary
  - Prize for best lecture by a PhD student in Lasers, Optics and Spectroscopy – South African Institute of Physics 50<sup>th</sup> annual conference held in Pretoria
- 2006
- Merit bursary – University of Stellenbosch
  - NRF Prestigious bursary
- 2007
- Merit bursary – University of Stellenbosch
  - NRF/DOL Scarce Skills bursary
  - Prize for best lecture by a PhD student in Lasers, Optics and Spectroscopy – South African Institute of Physics 52<sup>nd</sup> annual conference held in Johannesburg
- 2008
- NRF Innovation Post-doctoral fellowship
  - Prize for best lecture by a PhD student in Lasers, Optics and Spectroscopy – South African Institute of Physics 53<sup>rd</sup> annual conference held in Polokwane

### **Societies and affiliations**

- Member:
- Golden Key International Honours Society
  - South African Institute of Physics
  - South African Spectroscopic Society

### **Research Output:**

Conference presentations:

National

- 2002 ● Poster presentation at the South African Institute of Physics 47<sup>th</sup> annual conference  
 Title: ***Investigation of a plasma shutter***  
 Authors: PH Neethling, HM von Bergmann
- 2003 ● Poster presentation at the South African Institute of Physics 48<sup>th</sup> annual conference  
 Title: ***The Z-scan as Analysis Technique***  
 Authors: PH Neethling, EG Rohwer, PEW Walters

- Oral presentation at the South African Institute of Physics 48th annual conference  
Title: ***Investigating possible optical limiters***  
Authors: PH Neethling, EG Rohwer, PE Walters
- 2004 ● Poster presentation at the South African Institute of Physics 49<sup>th</sup> annual conference  
Title: ***Nonlinear absorption of Polyfluorene***  
Authors: PH Neethling, EG Rohwer, PEW Walters
- Oral presentation at the South African Institute of Physics 49<sup>th</sup> annual conference  
Title: ***Nonlinear absorption and refraction in C<sub>60</sub>***  
Authors: PH Neethling, EG Rohwer, PE Walters
- 2005 ● MSc Thesis: ***Determining non-linear optical properties using the Z-scan technique***
- Poster presentation at the South African Institute of Physics 50<sup>th</sup> annual conference  
Title: ***Superconductor thin film etching using a femto-second laser***  
Authors: PH Neethling, EG Rohwer, U Buttner, HM von Bergmann
  - Oral presentation at the South African Institute of Physics 50<sup>th</sup> annual conference  
Title: ***Second harmonic generation in ZnO***  
Authors: PH Neethling, EG Rohwer, HM von Bergmann
- 2006 ● Poster presentation at the South African Institute of Physics 51<sup>st</sup> annual conference  
Title: ***A regenerative amplifier for a femtosecond laser at the University of Stellenbosch***  
Authors: P.H. Neethling, E.G. Rohwer, H.M. von Bergmann, H.Schwoerer
- Oral presentation at the South African Institute of Physics 51<sup>st</sup> annual conference  
Title: ***Investigating the Si/SiO<sub>2</sub> interface using surface second harmonic generation***  
Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann
  - Oral presentation at the South African Institute of Physics 51<sup>st</sup> annual conference  
Title: ***Second harmonic generation as a technique to probe semiconductor materials***  
Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann
- 2007 ● Oral presentation at the South African Institute of Physics 52<sup>nd</sup> annual conference

Title: **Characterization and pulse length optimization of a low repetition rate amplified femtosecond laser**

Authors: P.H. Neethling, E.G. Rohwer, G.W. Bosman

- Oral presentation at the South African Institute of Physics 52<sup>nd</sup> annual conference

Title: **Second harmonic generation from p-doped silicon**

Authors: P.H. Neethling, E.G. Rohwer, T. Scheidt

- Poster presentation at the South African Institute of Physics 52<sup>nd</sup> annual conference

Title: **White light continuum generation using an amplified femtosecond laser**

Authors: P.H. Neethling, E.G. Rohwer, G.W. Bosman

- 2008 • Oral presentation at the South African Institute of Physics 53<sup>rd</sup> annual conference

Title: **Second harmonic generation from highly Boron doped Si/SiO<sub>2</sub>**

Authors: P.H. Neethling, E.G. Rohwer, T. Scheidt, H.Stafast

- Oral presentation at the South African Institute of Physics 53<sup>rd</sup> annual conference

Title: **Ultrafast transient absorption spectroscopy**

Authors: G.W. Bosman, A. Griessel, P.H. Neethling, E.G. Rohwer, H. Schwoerer

- Oral presentation at the South African Institute of Physics 53<sup>rd</sup> annual conference

Title: **Time-dependent second-harmonic generation from Si/SiO<sub>2</sub> interface probed by ultrafast femtosecond laser pulses**

Authors: G.P. Nyamuda, P.H. Neethling, E.G. Rohwer, C.M. Steenkamp, H. Stafast

#### International

- 2003 • Oral presentation at the International Conference on Laser Applications, 15-16 August 2003, Windhoek, Namibia

Title: **Investigating possible optical limiters**

Authors: PH Neethling, EG Rohwer, PE Walters

- 2005 • Poster presentation at the 3<sup>rd</sup> International Conference of the African Materials Research Society, 7-10 December 2005, Marrakech, Morocco

Title: **Optical second harmonic generation as a probe for semiconductor thin films**

Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann

- 2006 • Poster presentation at the NanoAfrica 2006 Conference, 27-29 November 2006, Cape Town, South Africa

Title: ***Second harmonic generation as a technique to probe buried interfaces***

Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann, T. Scheidt

- 2007 • Poster presentation at the 6<sup>th</sup> EBASI international conference on physics & technology for sustainable development in Africa, 24-26 January 2007, iThemba LABS, Cape Town, South Africa

Title: ***Probing semiconductor materials using second harmonic generation***

Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann, T. Scheidt

- Oral presentation at the Kariega Conference on photonic materials 2007, 2-6 May 2007, Kariega, Port Elizabeth, South Africa

Title: ***Second harmonic generation analysis of ZnO thin films***

Authors: P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann, H. Stafast

#### Published articles:

- 2005 • P.H. Neethling, E.G. Rohwer and P.E. Walters, "Investigation of the non-linear properties and optical limiting capabilities of C<sub>60</sub> and polyfluorene", South African Journal of Science, **101**, January/February 2005
- 2008 • P.H. Neethling, E.G. Rohwer, H.M. Von Bergmann and H. Stafast, "Analysis of ZnO thin films by second harmonic generation", phys. stat. sol. (c) **5**, No. 2, 552-554, 2008
- 2008 • A.Y. Fasasi, M. Maaza, Ch. Theron, P. Neethling, U. Buttner, A. Leitch, A.K. Chaudhary, "Non-linear absorption and second harmonic imaging of Zn–BaTiO<sub>3</sub> thin films prepared by laser ablation", Thin Solid Films **516** (2008) 6233–6239

#### Employment History:

- 1993 – 2002 • Various casual jobs
- Dec 2004 – Jan 2005 • Vacation work at the National Laser Centre, CSIR, Pretoria
- 2002 – 2007 • Lecturers assistant at University of Stellenbosch Physics Department
- 2004 – 2007 • Part of a team giving various short courses on optics and lasers to the industry and African students
- 2008 • Part time lecturer at the University of Stellenbosch (3<sup>rd</sup> year Atomic Physics)

#### Leadership Roles

- 2005 – 2006 • Chairman of the Van der Stel Hockey Club, Stellenbosch
- 2006 – 2008 • Student representative at the Physics Department
- 2006 • Member of Physics Department self-evaluation committee

- 2006                      ● Post-graduate member of Natural Science Student Council  
2008                      ● Member (webmaster) of the management committee of the  
                                 Laser Optics and Spectroscopy subgroup of the South African  
                                 Institute of Physics

### **Community work**

- 2004   ● Participated in a telethon raising funds for the Central Analytical Facility of Natural Sciences Faculty, University of Stellenbosch  
2004   ● Helped with the Natural Sciences winter week where school children are introduced to the Natural Sciences Faculty  
2007   ● Acted as a judge for Eskom Expo for young scientists, held at the University of Stellenbosch  
2008   ● Helped with various outreach programs where high school learners are exposed to the world of optics and lasers, organized by the Optical Society of America (OSA) chapter in Stellenbosch