

**UNIVERSITY OF PRETORIA**  
**CURRICULUM VITAE - FULL**  
**Mr Bradley Bock**

**1. BIOGRAPHICAL SKETCH**

**1.1 GENERAL INFORMATION**

<b>Surname</b>	Bock									
<b>First names</b>	Bradley Denis			<b>ID Number</b>	-----					
<b>Citizenship</b>	South African			<b>Title</b>	Mr	<b>Female</b>	<input type="checkbox"/>	<b>Male</b>	<input checked="" type="checkbox"/>	
<b>Place of birth</b>	East London, South Africa			<b>Date of birth</b>						
<b>Population group</b>	<b>African</b>	<input type="checkbox"/>	<b>Coloured</b>	<input type="checkbox"/>	<b>Indian</b>	<input type="checkbox"/>	<b>White</b>	<input checked="" type="checkbox"/>	<b>Other (Please specify)</b>	
<b>Department</b>	Mechanical Engineering			<b>Position</b>		Lecturer				
<b>Direct Telephone</b>	012 420 2195			<b>Direct Telefax</b>						
<b>E-mail</b>	<a href="mailto:bradley.bock@up.ac.za">bradley.bock@up.ac.za</a>									
<b>Date of appointment</b>	1 July 2014			<b>Permanent full-time</b>	<input checked="" type="checkbox"/>	<b>Temporary full-time</b>	<input type="checkbox"/>			

**1.1 ACADEMIC QUALIFICATIONS OBTAINED**

<b>Degree/ Diploma</b>	<b>Field of study</b>	<b>Higher education institution</b>	<b>Year</b>	<b>Distinctions</b>
Matric	English 1 <sup>st</sup> Lang, Afrikaans 1 <sup>st</sup> Lang, Mathematics, Physical Science, Biology, Accounting	Fairbairn College	2004	5 Distinctions, 14 <sup>th</sup> in Western Cape 2004 Matric Exams
B.Sc.(Eng)	Mechanical Engineering	University of Cape Town	2009	First Class Honours
M.Sc.(Eng)	Mechanical Engineering	University of Cape Town	2013	Not applicable

<b>1.2 WORK EXPERIENCE TO DATE</b>		
<b>Name of employer</b>	<b>Capacity and/or type of work</b>	<b>Period</b>
Spur Steak Ranches	Full-time Waiter	01/2005 to 12/2005
Sasol Synfuels	Candidate Engineer	01/2012 – 04/2013
Sasol Synfuels	Mechanical Engineer, Power Station Plant Support	05/2013 – 06/2014
University of Pretoria	Lecturer	07/2014 - Current
<b>1.3 PROFESSIONAL REGISTRATION</b>		
Candidate Engineer	ECSA (Engineering Council of South Africa)	2013 - Current

## 2. TEACHING ACTIVITIES

<b>2.1 Courses presented</b>			
<b>Course</b>	<b>Level (e.g. second year, Masters)</b>	<b>Self developed (Yes or No)</b>	<b>Class Size</b>
MJJ 210 - Professional and Technical Communication	2 <sup>nd</sup> Year (2015 to Present)	Yes (Course coordinator)	350
MIA 320 – Engineering Impact and Groupwork	3 <sup>rd</sup> Year (2016 to Current)	Yes (Course coordinator)	850-750
MOX 410 – Design Project	4th Year (2014 to Current)	No	10
MRN 412/422 - Research Project	4th Year (2014 to Current)	No	15
MPY 315 and 415 – Practical Training	2nd year (2015)	No	360
MGC 110 – Graphical Communication	1st Year (2016)	No	1400
MUU 781 – Fossil Fuel Power Stations	4th Year/PostGrad (2016)	No	8

### 3. TEACHING OUTPUTS

#### 3.1 Educational publications and products

MJJ 210 – Professional and Technical Communication – Course Notes

MIA 320 – Impact of Engineering and Groupwork – Course Notes

All Courses presented – Study Guides

### 4 RESEARCH ACTIVITIES

#### 4.1 Co-supervision of Interns

Name of student	Duration of studies	Topic	Position
Mahlatse Mothoa	12 months , 2015 - 2016	Calibration of transducers; Design of Heat Exchanger Equipment using enhanced tubes	NRF Intern
Jan Segmuller	3 months, 2019	Contact Angle of water droplets on various modified tube surfaces	Exchange Student

### 5 RESEARCH OUTPUTS

#### 5.1 Publications in peer-reviewed or refereed journals

Bock B.D., Meyer J.P., Thome J.R., “**Falling film boiling and pool boiling on plain circular tubes: Influence of surface roughness, surface material and saturation temperature on heat transfer and dryout**”, *Experimental Thermal and Fluid Science*, vol 109, 2019

Bock B.D., Bell A., Floweday G., “**Investigation into the influence of charge cooling and autoignition chemistry on the greater knock resistance of ethanol over iso-octane,**” *SAE Technical Paper 2013-01-2615*, 2013

#### 5.2 Published conference papers

Bock, B.D., Meyer, J.P. and Thome, J.R. “**Surface roughness effect of plain tubes during falling film boiling**”, Proceedings of the 10<sup>th</sup> International Conference of Boiling and Condensation Heat Transfer, Mar 2018, Nagasaki Japan

#### 5.3 Technical reports

2012 – 2014:

Sasol:

Numerous technical reports delivered, focused on maintenance of boilers and project renewals

## **2014 – Present**

### **University of Pretoria:**

1. Falling Film Evaporation – Review of Literature including State-of-the-Art advances, June 2015
2. Wilson Plots in heat transfer research – Review of Literature including State-of-the-Art advances, June 2015
3. Uncertainty Analysis of Falling Film Rig Instrumentation System, Dec 2015
4. Falling Film Evaporation/Condensation Facility – Overview of Facility, Dec 2015

## **6 OTHER SCHOLARLY RESEARCH-BASED CONTRIBUTIONS**

### **6.1 Membership in national and international bodies**

Engineering Council of South Africa (ECSA), Candidate Engineer

South African Institute of Mechanical Engineers (SAIMechE), Member

### **6.2 Visits to local and overseas universities or research institutes as guest professor or researcher**

Visiting Scholar to MIT, June – July 2019

- Topic: Investigation into nanocoating of tubes and influence on falling film boiling heat transfer

## **7 MANAGEMENT AND ADMINISTRATIVE DUTIES**

### **7.1 Website –**

- Management and Updating of [up.ac.za/mechanical-and-aeronautical-engineering](http://up.ac.za/mechanical-and-aeronautical-engineering) Website

### **7.2 Falling Film Rig – Management of Falling Film Rig in the Heat Transfer laboratories**

- Installation and Commissioning of Falling Film Rig and related equipment
- Calibration of Falling Film Rig and related equipment

### **7.3 Project Coordinator: Harnessing unsteady phase-change heat exchange in high-performance concentrated solar power systems**

- Project sponsored by Royal Society-DFID
- Coordinate between universities involved in the project, namely University of Lagos, Imperial College in London and University of Mauritius.

## 8 COMMUNITY SERVICE OR PROFESSIONAL SKILLS

### 8.1 Referee duties

Acted as peer reviewer of journal papers for “Applied Thermal Engineering”.

Acted as external examiner for UCT course “MEC2045S – Applied Engineering Mechanics”