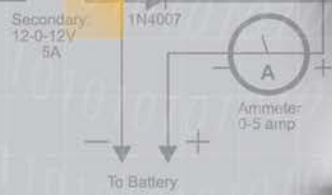
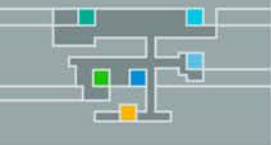




FAKULTEIT INGENIEURSWESE
FACULTY OF ENGINEERING



Postgraduate Studies in the Department of Process Engineering



UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

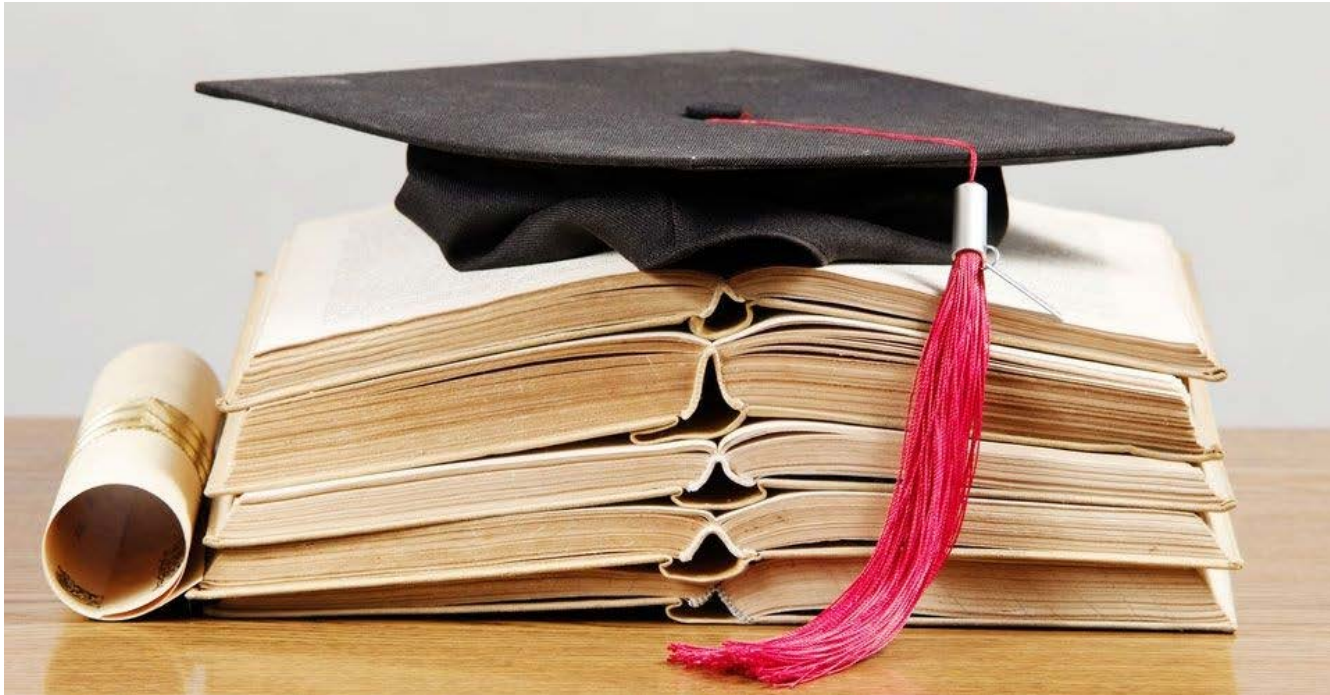




The clock is ticking ...



- Have you thought about what you are going to do next year?
- Have you considered postgraduate studies?





What is postgraduate research?



- Final year project but much, much better (and bigger)
- Master in Engineering – MEng (Research)
 - 18 months to 2 years full time (180 credits)
 - Research based – limited coursework
 - Mark based on final thesis mark



The advantages of postgraduate study



- Advance your career
 - Develop a higher level of thinking
 - Shows you can master a large, complex, ill-defined project
- ‘Requirement’ for a career in research
 - Learn to do research
- For your own personal development



Post-graduate studies at Process Engineering

<http://process.sun.ac.za/>

Research

Within the Department, our research foci can be grouped in to five main research areas:

Bioresource Engineering



Extractive Metallurgy



Separations Technology



Waste Valorisation



Water Technology





Post-graduate studies at Process Engineering

<http://process.sun.ac.za/>

Research

Within the Department, our research foci can be grouped in to five main research areas:

Bioresource Engineering



Prospective postgraduates

Overview

PGDip

MEng

PhD

Application Procedure

Tuition Fees

Funding and Bursaries

Contact us

The Department offers three postgraduate enrolment options for local and international students who come from various undergraduate backgrounds, including a Postgraduate Diploma (PGDip) in Engineering, a research-based Master's programme (MEng) in either Chemical or Extractive Metallurgical Engineering, and a Doctor of Philosophy (PhD) in Engineering in either Chemical or Extractive Metallurgical Engineering.

Further, our department offers access to cutting-edge laboratories and facilities, and research is performed in close collaboration with industry as well as international partners.

Postgraduate prospectus 2018

Download our departmental postgraduate prospectus for 2018 [here](#). For more information regarding our research groups, please click on the Research tab above. Upon application, please notify the postgraduate manager, Mrs Mieke de Jager, of your research interest(s), and your application documents will be sent to the applicable researcher(s).

RESEARCH GROUP: WATER

| | | | |
|---|---------|--|------------|
| Supervisor: Prof VL Pillay | Email: | pillayvl@sun.ac.za | |
| | Tel: | 021 808 4728 | |
| | Office: | C212 | |
| Faculty: Engineering | | Department: Process Engineering | |
| Research Group: Water | | | |
| Research Field: Water and wastewater treatment and reuse with a strong focus on membrane technology | | | |
| <p>General description of research field: The lack of water of adequate quality is rapidly emerging as a major constraint to both community development and the development of the industry. This is exacerbated by climate change, which seemingly has thrown previous rainfall patterns out the window. Hence, innovative approaches are urgently required for providing potable water from existing sources and remediating wastewaters to possible reuse standards. Remediating industrial wastewaters also offers the advantage of recovering very valuable organic and inorganic chemicals that can be used as feedstock for other chemical processes.</p> | | | |
| List of Research Topics: | | MEng | PhD |
| 1. Development of a woven fabric microfiltration membrane module for potable water provision and wastewater treatment. | | X | |
| 2. Optimisation of gravity driven membrane processes | | X | |
| 3. Development of a Donnan Dialysis process for the recovery of Al and Fe flocculants | | X | |
| 4. Evaluation of ultrafiltration and microfiltration as a replacement technology for potable water production in the Western Cape | | X | |
| 5. Development of a membrane-based process for treatment and valorisation of fishing industry effluent. | | X | |
| 6. Development of a membrane-based process for the treatment and valorisation of canning industry effluents | | X | |
| <p>Additional information/requirements: The above projects are all focussed on achieving a real practical outcome, rather than investigations into basic science. Hence, the candidate needs to have strong practical engineering skills, in addition to being able to understand and apply current theory.</p> | | | |

RESEARCH GROUP: WATER

| | | |
|--|---------------------------------|--|
| Supervisor: Prof VL Pillay | Email: | pillayvl@sun.ac.za |
| | Tel: | 021 808 4728 |
| | Office: | C212 |
| Faculty: Engineering | Department: Process Engineering | |
| Research Group: Water | | |
| Research Field: Water and wastewater treatment and reuse with a strong focus on membrane technology | | |
| General description of research field: The lack of water of adequate quality is rapidly emerging as a major constraint to both community development and the development of the industry. This is exacerbated by climate change, which seemingly has thrown previous rainfall patterns out the window. Hence, innovative approaches are urgently required for providing potable water from | | |

Additional information/requirements: The above projects are all focussed on achieving a real practical outcome, rather than investigations into basic science. Hence, the candidate needs to have strong practical engineering skills, in addition to being able to understand and apply current theory.

| | | |
|---|---|--|
| 1. Development of a woven fabric microfiltration membrane module for potable water provision and wastewater treatment. | X | |
| 2. Optimisation of gravity driven membrane processes | X | |
| 3. Development of a Donnan Dialysis process for the recovery of Al and Fe flocculants | X | |
| 4. Evaluation of ultrafiltration and microfiltration as a replacement technology for potable water production in the Western Cape | X | |
| 5. Development of a membrane-based process for treatment and valorisation of fishing industry effluent. | X | |
| 6. Development of a membrane-based process for the treatment and valorisation of canning industry effluents | X | |

Additional information/requirements: The above projects are all focussed on achieving a real practical outcome, rather than investigations into basic science. Hence, the candidate needs to have strong practical engineering skills, in addition to being able to understand and apply current theory.



Post-graduate studies at Process Engineering



- (Almost) all full time post-graduate students at Process Engineering have bursaries
 - Amounts depend on the student and project
 - Masters: R80k – R100k (a few more, a few less)
 - PhD: R100k – R120k (or more)
 - Confirm with adviser!!!
 - Deduct R26k for registration + tuition fees
 - Additional incentives / top-ups / demiships may be available
 - Tax free



Research in the department



Research groups

Extractive metallurgy

Waste valorisation

Bioresource engineering

Separations science and technology

Water

Energy

Sustainable & secondary resources

Water

Food security

High value products

Research themes



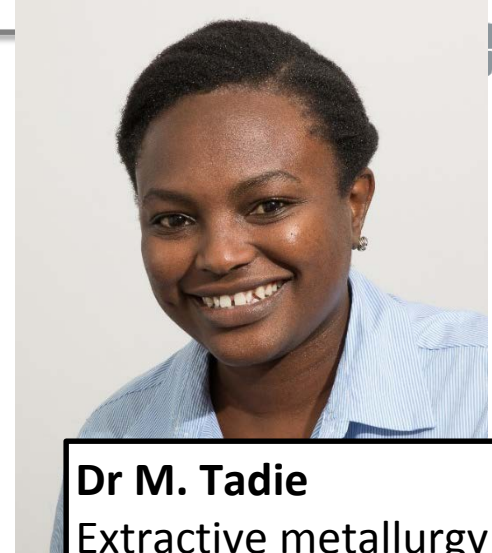
Extractive metallurgy



Prof. S.M. Bradshaw
Process development
and modelling



Prof. C. Dorfling
Hydrometallurgical process
development and modelling



Dr M. Tadie
Extractive metallurgy
and mineral separation



Prof. G. Akdogan
Mineral processing and
extractive metallurgy



Dr. L Auret
Process modelling,
control and monitoring
(incl. machine learning)



Separations technology & Water



Prof. A.J. Burger
Separation processes
and thermodynamics



Prof. V.L. Pillay
Novel Water and
Wastewater Treatment
and Reuse Technologies



Prof. C.E. Schwarz
High and low pressure
thermodynamics and
separation processes



Bioprocess & Waste Valorisation



Prof. J.F. Gorgens
Sustainable production of fuels, chemicals and materials, by replacing fossil-fuels with plant biomass and recycled polymers



Dr. A.F.A. Chimpango
Biomass processing & application: fractionation and agroresidues value addition



Dr. E.R. Els
Development of an optimal photobioreactor for production of algae



Bioprocess & Waste Valorisation



Dr. N.J. Goosen

By-product valorisation and aquaculture technology development



Dr. T.M. Louw

Predicting and understanding biological systems using mathematical models



Dr. R. Pott

Investigating bioproducts using engineering, biotechnology and molecular biology.



If you are interested



- Talk to possible supervisors as soon as possible
- Apply for bursaries (even if you are unsure)
- Get permission from undergraduate sponsors
- Final application and approval only after all final year marks are available



FAKULTEIT INGENIEURSWESE
FACULTY OF ENGINEERING



Questions?



UNIVERSITEIT
STELLENBOSCH
UNIVERSITY

