OVERVIEW

• Masters and Doctoral students calls currently open
  – NRF Freestanding, Innovation and Scares Skills
  – Extension Support
• Application Process
• Scorecard used to review applications
• Proposal Development
• Question and Answer session
# Ministerial Directive for Transformation Targets

## Targets for Designated Groups

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>Women</th>
<th>Persons with disability</th>
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<tbody>
<tr>
<td><strong>% target</strong></td>
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## Citizen Distribution of Students

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>SA Citizen &amp; Permanent residents</td>
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<tr>
<td>SADC (Excluding SA)</td>
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<tr>
<td>Rest of Africa</td>
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<tr>
<td>Outside of Africa</td>
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Application Process for NRF Scholarships
How to apply

• Applications are submitted through an online process on [https://nrfsubmission.nrf.ac.za](https://nrfsubmission.nrf.ac.za).

• Only completed online applications will be considered.

• Once applications are validated by the institution, they will display application statuses “Submitted to NRF for Review”.

• These applications are the only one that will be considered and assessed by the NRF.
Instructions

- If you have already registered on the previous systems (NRF Online and Interim), please use your existing login details to access this system. If you have forgotten your password, please click on the Reset Password link on the left-hand menu.
- For technical online enquiries, please contact the Support Desk (Mondays to Fridays from 08h00 to 16h30) on:
  
  Tel: +27 12 461 4202
  E-mail: supportdesk@nrf.ac.za
- To access call related documents, please refer to the Open Calls block below. Click on the icon next to the relevant call to show a list of document(s). To open the document, click on the relevant link.

Log In

ID/Passport/Unique Number: 
Password: Show Password

Open Calls

- BRICS Multilateral Joint Call for Proposals 2017
- DST – NRF Fellowships for Early Career Researchers from the UK 2017
- DST-NRF Conference Fund 2017
- [Extension Scholarships for Masters and Doctoral Studies 2017 highlighted]
- Foundational Biodiversity Information Programme – Concept Notes for Large Integrated Team Projects 2016
- Foundational Biodiversity Information Programme (FBIP) – Small Grants 2016
- Infrastructure Funding Instruments in support of the National Equipment Programme (NEP) 2017
- Knowledge, Interchange and Collaboration (KIC) 2016 – Round 2
- NRF – TWAS Doctoral/Renaissance Doctoral Scholarships Call for 2017
- [NRF Freestanding, Innovation and Scarce Skills Development Masters and Doctoral Scholarships 2017 highlighted]
- NRF Free-standing/Innovation/Scarce-Skills Postdoctoral Fellowships Call for 2017
- NRF/ERC 2016 Call
- NRF-TWAS Postdoctoral Fellowships Call for 2017
- SARChI Research Chair in Astronomy (Southern African Large Telescope – SALT)
Information

PLEASE NOTE: The summary below only lists output records that were migrated from the old NRF Online system. New records that are added on this system will not form part of this summary.

Applicants must ensure that their CV is updated/completed before creating an application.

In order for your migrated research outputs to show on the CV or be accessible for selection on applications that require your publication record, you must verify (review) the outputs listed in the Research Outputs Summary table below. In order to do this, click on the output type that still has outputs to be verified (see the To be Reviewed column). Scroll to the bottom of the screen and a heading saying cleaned-up research output records from NRF Online will be displayed. Click on the little black arrow. This will display the output(s) that needs to be verified. Then click on the View icon, it will open a screen with the data for the output. Please fill in the missing information and save the page. If you have more than one output per output type, click on View for the next output. Do this for all the outputs, the output type on the landing page should now say 0. Move on to the next output type and repeat the process. Should you wish to delete an output, then click on the Feedback to the NRF box (e.g. output duplicated, please delete) and in the Status field, please select Delete.

In some cases, researchers’ outputs don’t show at all. The reason for this is
1. The ID/passport number which the cleaned data was linked to which clean-up exercise was undertaken differs from the ID/passport number you have just used to login to the NRF Online Submission System.
2. No outputs were added on the old NRF Online system so there was nothing to migrate. If there were outputs on the old NRF Online system but they do not show in the summary below, you need to ensure that the ID/passport numbers used on both the old NRF Online and this system (NRF Online Submission System) are the same. Please contact the NRF should your outputs not show so that this can be rectified.
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<td>Articles in Refereed/Peer-reviewed Journals</td>
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<td>Patents</td>
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<td>Keynote/Plenary Addresses</td>
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<td>Articles in Non-refereed/Non-peer Reviewed Journals</td>
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<tr>
<td>Technical/Policy Reports</td>
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<td>03 Jun 2016</td>
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<tr>
<td>Products</td>
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<td>03 Jun 2016</td>
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<tr>
<td>Artefacts</td>
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<tr>
<td>Prototypes</td>
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<td>Other Recognised Research Outputs</td>
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<tr>
<td>Degree to be Funded *</td>
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<td>Additional Information *</td>
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<td>Research Project Information *</td>
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<td>Preferred Panel *</td>
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<tr>
<td>Academic Achievements *</td>
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<td>Details of Research *</td>
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<td>Attachments *</td>
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<td>Checklist *</td>
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NRF Freestanding, Innovation and Scarce Skills
## Masters scorecard used in reviews

<table>
<thead>
<tr>
<th>Criteria</th>
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<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Academic Merit</td>
<td>Average percentage mark for previous degree.</td>
<td>15%</td>
</tr>
<tr>
<td>Scientific merit of the proposal</td>
<td>Literature review, Aims, Objectives and Methodology.</td>
<td>45%</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Work plan, project organisation, project scheduling and timelines.</td>
<td>35%</td>
</tr>
<tr>
<td>Alignment with National Research Priorities</td>
<td>Alignment with one or more national research strategies and the potential for socio and/or economic impact</td>
<td>5%</td>
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</table>

100%
# Doctoral* scorecard used in reviews

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Academic Merit</td>
<td>Average percentage mark for previous degree.</td>
<td>15%</td>
</tr>
<tr>
<td>Applicant’s track Record</td>
<td>Past Research Outputs (e.g. Journal articles, conference presentations/proceedings, Book Chapters, Patents).</td>
<td>5%</td>
</tr>
<tr>
<td>Scientific merit of the proposal</td>
<td>Novelty and Scientific contribution to new knowledge; multidisciplinary aspects; alignment of the research question with the methodology.</td>
<td>45%</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Work plan, project organisation, project scheduling and timelines.</td>
<td>30%</td>
</tr>
<tr>
<td>Potential Impact of the Research</td>
<td>Potential to contribute national research strategies and the strategic goals of the knowledge economy.</td>
<td>5%</td>
</tr>
</tbody>
</table>

100%
Useful tips on Research Proposal

• The research proposal leads to thesis production.
• The initial step of the process starts with an idea of what you would like to investigate (**Aims and Objective**).
• This idea is then formulated into a research problem question.
• The procedure you propose to follow in order to answer the problem question is your research design (**Methodology and Feasibility**).
• You then write this up in your research proposal (**Scientific Merit of the proposal**).
• Time and effort into developing a sound proposal.
• Clear map through the terrain of the research area will prevent you from losing your way in the entangled field.
**Details of Research**

**Instructions**

- An * at the end of a sub-section as listed below denotes that this is a compulsory sub-section; it is not possible to click on the 'Final Submit' button unless all compulsory sub-sections have been completed.

<table>
<thead>
<tr>
<th>Section</th>
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<tr>
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<tr>
<td>Feasibility *</td>
<td>✔️</td>
<td>03 Jun 2016</td>
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<tr>
<td>Alignment with National Research Priorities, Potential Impact and Track record *</td>
<td>✔️</td>
<td>03 Jun 2016</td>
<td></td>
</tr>
</tbody>
</table>

[Return to Menu]
Details of Research: Scientific Merit of the Proposal

Instructions
- Masters applicants only: Literature review, Aims, objectives, methodology.
- Doctoral and Doctoral Abroad applicants only: Novelty and Scientific contribution to new knowledge; multidisciplinary aspects; alignment of the research question with the methodology.

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Save  Return to Menu
Scientific Merit of the proposal

• Literature review
  – Text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic,
  – Secondary sources, and do not report new or original experimental work,
  – Crucial to formulating the framework of the research,
  – What is the context within which your research project is located?
  – What does the literature reflect about the development of the issue?
  – In what context (historical, geographical, social) is most of the literature located?
  – What are the most recent findings in your area of study?
  – What gaps and contradictions exist among these findings?
  – What new research questions do these findings suggest?
  – Consult a few introductory texts, some standard articles, and chapters in standard works or in topical encyclopedias in order to sketch an orientation of the kinds of academic debates in the field,
  – The reference list at the end of your work demonstrates the depth of your research.
  – It acknowledges your sources of information, protecting you against the serious charge of plagiarism.
Introduction

In 1992, Botha and co-workers reported that the life cycles of species of the non-fermenting yeast (Wickerham, 1951) *Dipodascopsis* (*D. tothii* and *D. uninucleata*) are characterized by similar consecutive asexual and sexual reproductive stages. In the presence of different concentrations of the non-steroidal anti-Inflammatory drugs (NSAIDs), acetylsalicylic acid (ASA, aspirin) and indomethacin, a dose dependent inhibition of the asexual stage was observed in both yeasts (Bareetseng et al., 2005; Ncango et al., 2006). Interestingly, the sexual stages of these yeasts were found to be more sensitive to NSAIDs (Botha et al., 1992) with ascospore liberation in *D. uninucleata* the most sensitive stage towards aspirin (Kock et al., 1999).

References


Introduction
In 1992, Botha and co-workers reported that the life cycles of species of the non-fermenting yeast (5) Dipodascopsis (D. tothii and D. uninucleata) are characterized by similar consecutive asexual and sexual reproductive stages. In the presence of different concentrations of the non-steroidal anti-inflammatory drugs (NSAIDs), acetylsalicylic acid (ASA, aspirin) and indomethacin, a dose dependent inhibition of the asexual stage was observed in both yeasts (1, 4). Interestingly, the sexual stages of these yeasts were found to be more sensitive to NSAIDs (2) with ascospore liberation in D. uninucleata the most sensitive stage towards aspirin (3).

References


Scientific Merit of the proposal

• Aims
  – An academic aim, which is the issue / problem your research proposal hopes to address on the basis of developments in the academic literature and aimed at an academic audience,
  – Consider starting your aim/s with words like: explore, investigate, analyze, determine, interpret, understand, demarcate, critique, ascertain, compare, contrast, evaluate, assess.

• Objectives
  – A goal or a step on the way to meeting the aim; how you will achieve it,
  – Objectives use specific statements which define measurable outcomes.
  – SMART

• Methodology
  – Clear indication of the means by which you hope to achieve your research aims,
  – The methods and techniques you will use for obtaining information and data.
  – How you will obtain the information and data?
  – Will you use qualitative and/or quantitative methods?
Details of Research: Feasibility

Instructions

- Work plan, project organisation, project scheduling and timelines. (This section must be completed by Masters, Doctoral and Doctoral abroad applicants).
- In addition, Doctoral abroad applicants must provide Motivation explaining the benefits of undertaking the doctoral studies abroad and reasons why the doctoral studies cannot be undertaken in South Africa.
Feasibility

• Here you need to outline a work schedule which couples the various research activities you will be involved in with a time-frame. It is important that you present a realistic time-frame which allocates sufficient time for the various activities (Workplan, Project organisation, Project Scheduling) and also for revising, editing and producing the final text.

• Project scheduling and workplan:
  – Litt review: January 2016 to June 2016
  – Scanning Electron Microscopy (SEM) of infected cells: August 2016 to December 2016
  – Sequencing of the different strains of *E coli*: January 2017 to June 2017
  – Writing of Chapter 1, 2 and 3: January 2017 to August 2017

• Project organization:
  – Professor Zulu, supervisor.
  – Dr Notes, co-supervisor.
  – Professor Xu, collaborator
  – Mr Zau, Microscopy technician
Details of Research: Alignment with National Research Priorities, Potential Impact and Track record

Instructions

- Masters applicants must only respond to Alignment with National Research Priorities: Alignment with one or more national research strategies and the potential for socio and/or economic impact.
- Doctoral and Doctoral Abroad applicants must only respond to Potential Impact and Track record: Potential to contribute national research strategies and the strategic goals of the knowledge economy and Past Research Outputs (e.g., Journal articles, conference presentations/proceedings, Book Chapters, Patents)

5000 characters left.
Extension Support for Master and Doctoral Studies
## M and D scorecard used in reviews

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Weight</th>
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<tr>
<td>Causes of delays in project completion</td>
<td>This is an important section which details the initial proposed project objectives and challenges encountered that led to the delays in project completion.</td>
<td>10%</td>
</tr>
<tr>
<td>Progress to date</td>
<td>This section refers to a detailed and comprehensive account of progress achieved to date.</td>
<td>10%</td>
</tr>
<tr>
<td>Work plan to complete the degree</td>
<td>Students to provide a thorough work plan towards completion of study. They should also give feasible timelines and methodical project activities.</td>
<td>40%</td>
</tr>
<tr>
<td>Supervisor’s support</td>
<td>Supervisor’s recommendation for an extension bursary is important to provide an academic account of the student’s progress in relation to the project as well as the proposed project plan. The supervisor is required to endorse the proposed plan for completion as well as submission of the dissertation and manuscripts for publication.</td>
<td>30%</td>
</tr>
<tr>
<td>Research outputs and publication plan</td>
<td>Particular attention is paid to proposals with the potential to contribute to the strategic goals of the knowledge economy.</td>
<td>10%</td>
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</table>

**Total:** 100%
An * at the end of a sub-section as listed below denotes that this is a compulsory sub-section; it is not possible to click on the 'Final Submit' button unless all compulsory sub-sections have been completed.

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<td>Proposed Research Plan for Requested Funding Period *</td>
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<tr>
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Instructions

- Provide a BRIEF background which includes the aim and objectives of the research, the background to the research, citing relevant literature, and the methodology and techniques.
Better example

Details of Research : Research Description

The aim of my research is to incorporate an antimicrobial agent, 2,5-Dihydroxybenzoic Acid, into various polymer matrices and study the release behavior. The polymers I am using are, Poly (vinyl alcohol), Chitosan, Poly (ethylene-co-vinyl alcohol) and Poly (styrene-co-maleic anhydride). These polymers differ in hydrophilic/hydrophobic nature and the effect it has on the release behavior will be investigated.

My research goals include:

Incorporate DHBA into each polymer by means of solvent casting and electrospinning.

Study the interaction and effect of DHBA on the various polymers.

Develop a way to control the release of the agent from the films and fibers, finding the best combination of polymers which controls the release of the agent from these systems.

Finally, coaxial electrospin the various polymer solutions and study the effect the different parameters has on the release behavior from the core-shell nanofibers.

Background:

The need for polymer systems with slow dissolution in which drug molecules are exposed at a slower rate to water from the aqueous environment are highly in demand. This can be achieved by a polymer coating or matrix that dissolves at a slower rate than the drug. The insoluble polymer matrix inhibits the fast release of the drug molecules where molecules must travel through tortuous pathways to exit the device.(1)

Electrospinning has gained much attention as drug delivery systems for its potential to minimize bursting. This is due to the continuously long and high-order aligning structure of molecules as well as to the high porosity of the electrospun fibers. The bursting depends on the surrounding medium, polymers used as well as encapsulant. A common way of controlling drug delivery is by incorporating the drug into the polymer matrix. Drug dissolution and drug diffusion through the polymers are important phenomena in controlling the release characteristics of the formulation.(2) The electrospun fibrous mats have gained rapid interest as potential controlled release candidate in food, pharmaceutical, and medical applications.(3)

Core-shell nanofibers have been studied intensely and are ideal for when thin, delicate structures are needed for better release profile control where biologically active molecules are incorporated within the fibers.(4,5)

Films of the various polymer solutions were made by solvent casting technique. The absorbance of DHBA was measured using UV-VIS and the percentage DHBA released from the film was calculated against a calibration curve. The results concluded that the release was dissolution-controlled, the release of the agent was based on the hydrophilic/hydrophobic character of the various polymers.

In order to be able to control the release of the agent from these films, another film was put on top where the bottom film contained the antimicrobial agent. The agent has a longer diffusion path to be release from the films into the aqueous medium.

The various polymer solutions were electrospun to obtain smooth nanofibers. The average fiber diameter were measured at 400-500nm, where smooth nanofibers were obtained. The release was studied from these nanofibers. The fibers were also crosslinked for different times, to study the morphology changes before and after crosslinking and the release behaviour were investigated.

A different approach was also investigated, by dip-coating the fibers with different polymer solutions to see if the release will be influenced. For each polymer, the fibers obtained (weight at first) were immersed in 1% solutions of the other polymers, meaning that PVA fibers were immersed in Chitosan, EVOH and SMA solutions respectively. The coated fibers were dried and weighed and SEM was done to show the morphology of the coated fibers. For the different polymer fibers, different release rates were observed, the release was dependent on the amount of coating on the fibers.

The DHBA-loaded nanofibers were characterized using various techniques. The interaction of DHBA with the polymer matrix was studied using FTIR. The effect of DHBA on the crystallinity and the stability of DHBA in these fibers were studied using DSC and TGA respectively.

The last objective of my research is to coaxial electrospin my various polymers and studies the effect of the parameters on the release behaviour of the agent. Different polymer systems will be investigated that will control the release of the agent. This part of my study has not been done yet.

(3) Sakulda, S.; Yoovithaya, T.; Wongsasulak, S. Coaxial electrospinning and sustained release properties of gelatin-cellulose acetate core-shell ultrafine fibres. 2011, 97, 335-343.
Details of Research: Research Description

Biochar (BC) is a term given to a solid by-product of pyrolysis rich in carbon concentration (Koide et al., 2011). Possible reactions which are likely to occur after BC application in the soil includes, but not limited to: dissolution-precipitation, adsorption-desorption, acid-base and oxidation/reduction (redox) reactions (Joseph et al., 2010). Although other reactions mentioned do occur in the soil after BC application, redox reactions need more attention. Redox reactions strongly control the speciation, toxicity, bioavailability, nutrients solubility and both organic and inorganic pollutants in the soil, hence, redox reactions can affect the fate of nitrogen (N), sulphur (S), manganese (Mn) and iron (Fe) (Mansfeldt, 2004).

Oxidation occurs when there is a loss of electrons while reduction occurs when there is a gaining of electron in the soil chemical reaction (Sparks, 2003). Therefore, the electron acceptor is the oxidized component or oxidant and the reduced component or reductant is the electron donor (Sparks, 2003). It is envisaged that the application of reducing agents (e.g. BC and organic matter: OM) can cause the reductive dissolution of oxides/ hydroxides and their associated metals (Fe and Mn), thereby, increasing their solubility and mobility in the soil (Sparks, 2003). Biochar is more recalcitrant to decomposition and degradation than organic matter (Joseph et al., 2010). This suggests that BC can sustain soil fertility and release more nutrients from oxides for a longer-term.

Details of Research: Research Description

the research is to investigate the influence of IT adoption on supply chain integration and supply chain collaboration on small and medium scale enterprises of Gauteng and Free State provinces in South Africa.
Instructions

- Please provide an indication of the progress achieved thus far against the set objectives of the Master’s/Doctoral study.
Details of Research: Progress to Date

My results thus far include:

Firstly, films of the various polymer solutions, PVA, Chitosan, EVOH and SMA, were made by solvent casting technique. This involves dissolving the polymer in a solvent, thereafter the polymer solution is cast into a petri dish for the solvent to evaporate and then in an oven to remove any residual solvent. The concentration of the different polymer solutions was kept the same in order to compare the release of the agent from these matrices. The absorbance of DHBA was measured using UV-VIS and the percentage DHBA released from the film was calculated against a calibration curve. SMA showed a slower release of the agent as PVA and Chitosan did. These results were supported with the swelling behaviour of the films. It was concluded that the hydrophilic polymer releases the agent quicker and the release was dissolution-controlled.

In order to be able to control the release of the agent from these films, another film was put on top where the bottom film contained the antimicrobial agent. The release was retarded from the hydrophilic PVA and Chitosan films; this is because the diffusion path for the agent to be released in the aqueous medium is longer. Again it was seen, the SMA film retarded the release even more due to its hydrophobic character.

The various polymer solutions were electrospun to obtain smooth nanofibers. SEM was done on the fibers to confirm that smooth nanofibers were obtained and these images were also used to calculated the average fiber diameter using custom image analysis software (SEM Image Studio). About 25 measurement were taken for the calculation. The effect of concentration on the average fiber diameter was investigated because the different polymer nanofibers had to have similar average fiber diameters for comparison purposes in the release study. The average fiber diameter were measured at 400-500nm, where smooth nanofibers were obtained. The release was studied from those nanofibers and similar trends were observed as seen for the films. The hydrophilic polymer, PVA and Chitosan released the agent the fastest, resulting in a burst release. It was noticed that the fibers lost their morphology after immersion in water, especially PVA and Chitosan which is the reason for the burst release of DHBA. The fibers were crosslinked for different times, to study the morphology changes before and after crosslinking and the release behaviour were investigated. The release from these fibers was significantly retarded; PVA released 51% after 24h crosslinking, Chitosan 56% and EVOH only 49%. Whereas for the uncrosslinked fibers; PVA released 89%, Chitosan 94% and EVOH 77%.

A different approach was also investigated; by dip-coating the fibers with different polymer solutions to see if the release will be influenced. For each polymer, the fibers obtained (weigh at first) were immersed in 1% solutions of the other polymers, meaning that PVA fibers were immersed in Chitosan, EVOH and SMA solutions respectively. The coated fibers were dried and weighed and SEM was done to show the morphology of the coated fibers. For the different polymer fibers, different release rates were observed, the release was dependent on the amount of coating on the fibers. For the dip-coated fibers, the hydrophilic/hydrophobic character of the different polymers was not the determining factor in the release study but rather the amount of coating onto the fibers. In this case the release was diffusion-controlled. When a thicker coating was coated on the fibers; the agent had a longer diffusion path to be release in the aqueous medium.

The DHBA-loaded nanofibers were characterized using various techniques. The interaction of DHBA with the polymer matrix was studied using FTIR. The incorporation of DHBA into the polymeric matrices was confirmed using FTIR. The effect of DHBA on the crystallization and the stability of DHBA in these fibers were studied using DSC and TGA respectively. The stability of the polymeric matrices was improved with the incorporation of DHBA.

The last goal of my research is to coaxial electrospin my various polymers and studies the effect of the parameters on the release behaviour of the agent. Different polymer systems will be investigated that will control the release of the agent. This part of my study has not been done yet.
**Details of Research: Progress to Date**

1. Progress achieved

The progress is quiet great even though the drawback had imposed the possibility of not completing this year (2015). Courses were all passed and research was done twice (during 2013-2014 and 2014-2015 summer seasons). Due to unavailability of research materials, some of the variables were not measured. Soil analysis is the major technique required for the completion of this study but there was no funds to do soil analysis. By next year I hope all variables would be done and research project will be written.

**Details of Research: Progress to Date**

I am busy with chapter five which is Data Analysis.
Details of Research: Proposed Research Plan for Requested Funding Period

Instructions

- Please indicate all proposed research activities for the requested funding period. All research activities must include start and end dates:
  - Writing of dissertation
  - Submission of Manuscript
  - Submission of Thesis
  - Corrections to dissertation
  - Envisaged graduation date
- Indicate whether extension will be completed in 6 or 12 months

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Better example

Details of Research: Proposed Research Plan for Requested Funding Period

Work plan and timline:
August – September 2015
Completion of normal mode analysis
Comparison of original structure ligands crystallized within the structures to the results achieved with docked ligands
Analysis and completion of the phylogenetic results conducted on both the full set of A-domain sequences (341) as well as the sequences within their physicochemical property grouping

October – November 2015
Homology modeling for representative sequences from each substrate group that have not yet been crystalized. This includes constructing and validating the models for further experiments.
Once the models are constructed and validated the previous work carried out to date can be mapped to the structures and evaluated/validated. This should give a better indication of the relation of the structure and sequence to the functioning of the synthetases.

December 2015 - January 2016
Large scale docking of the testing set of small ligands/ amino acids to the newly constructed homology models. These results will then be analyzed in relation to the crystal structure docking experiments, which have already been completed. This will then be used to assess whether or not the synthetases are able to take up further/ altered substrate. If in fact they can be manipulated to take up differing substrates this would then be used in future work to create novel natural compounds. These natural compounds would be useful in the agricultural industry as plant defense against pathogens such as fungi.
February - March 2016
Molecular dynamic studies will then be carried out on the structures to assess stability of the docked compounds and essentially viability of the proposed compound manipulation.

April - June 2016
Writing up and submission of article on findings including homology modeling, docking and physicochemical analysis.
Final writing up and submission of doctoral thesis.

Expected outputs:
- Doctoral Thesis
- At least one publication on the new discoveries including the physicochemical study which has never been published for NRPS before and which work has already been completed in this study.
Better example

Details of Research: Proposed Research Plan for Requested Funding Period

Potato planting (6 weeks), inoculation and Total RNA extraction for 1, 2 and 3 biological experiment 19 Jan 2015 to 20 March 2015

Total RNA Extraction 23 Mar 2015 to 30 Mar 2015

cDNA synthesis 01 Apr 2015 to 10 Apr 2015

Gene Expressions using RT PCR 13 Apr 2015 to 30 Apr 2015

Data Analysis 01 May 2015 to 03 Jul 2015

Report and Dissertation writing 06 Jul 2015 to 30 Oct 2015

Running parallel to the above mentioned will be the potato screening of 12 cultivars against SRE pathogens.
Details of Research: Proposed Research Plan for Requested Funding Period

Work plan:
From the 10th of January 2016 after registration I will be preparing myself to present my results in all possible presentations to improve my presentation skill as well as exposing my work to the world. I hope by the second session of graduations I will be part of the graduates.

Expected output:
I'm expecting to graduate and finish my project next year (2016).

Details of Research: Proposed Research Plan for Requested Funding Period

My proposed research plan from here on is to finalise my results within the next two weeks, and then spend the next month or so after that finishing the writing of my thesis.
After that I will submit a first draft to my supervisor to check for any omissions or mistakes, after which I will fix any issues he might bring to light. After that my thesis will be sent to an editor and then submitted.
Also, during this time I plan on attending the during which I will present my research as a conference proceeding.
All this should take no more than two months, after which I will have to wait for feedback from my referees, which should take at a maximum 6 weeks.

Details of Research: Proposed Research Plan for Requested Funding Period

10 May submission of chapter 5
15 June Chapter 6
9 July first draft
15 August final draft
Instructions

° Please provide details for not completing the study in the minimum prescribed time.
Better example

Details of Research: Reason for not completing this study in the minimum prescribed time

The first few months of Masters involves reading journals and trying to understand what is expected and also what the project involves.

The part of my research study that is still not completed is the co-axial electrospinning of my polymers and then testing it against microbes. This is because the other objectives of my study was time-consuming and resulted in falling behind in my progress. Investigating the release of my 2,5-Dihydroxybenzoic acid from the various polymers took a long time; having to measure the release for up to 2 weeks per sample and this was repeated a few times to be reproducible.

The electrospinning of my polymers was done until smooth fibers were obtained. For each polymer, different concentrations were investigated and also the average fiber diameter were calculated. The average fiber diameter for the various polymers had to be similar, this is to be able to compare the release of the agent from these nanofibers. The electrospinning was also time-consuming because it took about 2 days to electrospin only one polymer solution, this is due to the very slow flow rate that was used to obtain nanofibers. In our department, there are only three electrospinning setups being used by a few students and it is necessary to be polite and not book the setup for an entire week which also delayed my progress.

Also other obstacles was in my way, such as instruments that broke which retarded my progress and then being able to find the co-axial spinneret to be able to electrospin my polymers was a problem.

Details of Research: Reason for not completing this study in the minimum prescribed time

I registered for my MSc in April 2013 and due to this, I started my lab work late September after submitting my research proposal. Some of the factors that contributed for not finishing on time include the following;

Availability of Phytotron
The department has got limited Phytofotrons accommodating few experiments for students at a given time. Therefore this affected the planning and execution of the experiment as we wait long period to be allocated. Our lab has been allocated one of the Phytofotron between January to April 2015, during is the time i will be doing my plant trials, inoculations, Total RNA extraction from stems and subsequently finalizing with gene expression.

Scheduling times at the microscopy unit
The microscopy unit in the university gives service to many external and university departments therefor it is very difficult to get scheduled for more hours plus in my work i used more than one microscopic technique in addressing my objectives.

Thus all the above mentioned challenges contributed to me not completing my study on time as i lost about 5-6 months of working time, affecting my planning and execution of research objectives.
Poor example

Details of Research: Reason for not completing this study in the minimum prescribed time
I don't have enough funds for research and also, I don't have access to do anything for my research since I'm funded under my supervisor's project.

Details of Research: Reason for not completing this study in the minimum prescribed time
Extension of data collection due to obstacles in finding SMEs.
All applicants **must** consult with his/her proposed supervisor in the process of submitting an application to ensure that the **supervisor is in agreement** with the **scientific aspects** contained in the application and, the **proposed work plan** for completion of the degree.
Awarding stage for scholarships

• Recommendation by expert or peer-review panel.
  – Recommended and fundable
  – Recommended and not fundable
  – Not recommended and not fundable

• Equity and Redress: Ministerial Guidelines.

• Availability of budget.