|  |  |
| --- | --- |
|  | **Faculty of Engineering and the Built Environment**  **EBE02 – Master’s IP Assessment Form** |

|  |  |  |
| --- | --- | --- |
| **Submit this form with your *Intention to submit form* when completing the online service request.** | | **Contact: Khaya Salman**  Tel: (021) 650 5278  E-mail: khaya.salman@uct.ac.za |
| In terms of the UCT Intellectual Property Policy and the Intellectual Property Rights from Publicly Financed R&D Act (No. 51 of 2008), it is a requirement to screen research outputs prior to public disclosure to ensure that any relevant intellectual property has been adequately protected prior to disclosure.  Additional information on the Act, the IP Policy and patentability can be obtained from the RCIPS website, see: [www.rcips.uct.ac.za](http://www.rcips.uct.ac.za).  Once completed, this form will be reviewed by Research Contracts and Intellectual Property Services (RCIPS), who fulfil the role of the technology transfer office mandated by the Act.  Take note of thesis copyright issues on the RCIPS website (see: *Intellectual Property*® *IP for postgrad students* or <http://www.rcips.uct.ac.za/rcips/ip/postgradsip>).  Where necessary, it is possible for students to apply to the Faculty for confidentiality of a thesis to be maintained temporarily – without affecting graduation. This is typically associated with a need for patent protection. More details are available from RCIPS or the [RCIPS website](http://www.rcips.uct.ac.za). As examiners need to be placed under a non-disclosure agreement this needs to be done well in advance of the submission of the dissertation. | | |
| **SURNAME**, Name | Tallack, Sarah | | |
| Student number | TLLSAR002 | | |
| E-mail address | [sarahtallack@gmail.com](mailto:sarahtallack@gmail.com) | | |
| Telephone number | 0842977777 | | |
| Department and Faculty | Department of Electrical Engineering  Sarah Tallack | | |
| Dissertation title | Photo-synthetically available radiance (PAR) measurement in Antarctic Marginal Ice Zone (MIZ) | | |
| Target hand-in date | December 2025 | | |
| Supervisor/s name/s | Robyn Verrinder | | |
| **Abstract**  (may be copied from thesis) | The distribution of sea ice in the Marginal Ice Zone (MIZ) in the Southern Ocean (SO) has a significant effect on global climate patterns, but our understanding of this unique region suffers from a lack of Antarctic seasonal in situ measurement data, especially over the winter season (Kennicutt II et al., 2019; Parkinson, 2004). Sea ice acts as a physical and reflective boundary between the atmosphere and ocean, which influences heat transfer to the ocean and energy budget available to phyto-plankton below the ice. There has been limited measurement of solar radiative transfer through sea ice in different seasons in the polar regions (Katlein et al., 2020), with virtually no in situ measurements in the Antarctic. Recent studies by Hague and Vichi (2020) show phytoplankton growth under sea ice during late winter which indicates that there is radiative transfer through the sea ice even in seasons of highest ice cover. Photo-synthetically Active Radiation (PAR) sensors are traditionally very expensive, making these measurements difficult. Robust and affordable radiative sensors would improve our ability to quantify radiative transfer through sea ice. Katlein et al. (2020) developed a radiative sensor chain based on off-the-shelf photo diode sensors for the Arctic region and the goal of this project is to extend this work for an Antarctic implementation. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Funder**  Who funded the project? Ignore any bursaries or scholarships received. |  | | |
| **Patenting opportunities**  Describe any IP that you feel may be worth protecting. |  | | |
| **Public disclosure**  Has there already been any presentation or publication of the work? | No | | |
| **Research materials**  Are there any research materials (cultures, software, etc. – for full description, see [UCT IP Policy](http://www.rcips.uct.ac.za/rcips/ip/policy)) that have been developed? If so, broadly describe them and indicate who will become the custodian of them, if not your supervisor. |  | | |
| Student Signature |  | Date | 20/01/2025 |
| Supervisor Signature |  | Date |  |

|  |  |
| --- | --- |
| **RCIPS Assessment - Office use only** | |
| Protectable IP present? |  |
| Public disclosure status |  |
| Follow-up actions |  |
| IP already protected? |  |
| Funder issues? |  |