



University of Fort Hare  
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## **POST DOCTORAL RESEARCH FELLOWSHIP [PDRF] 2022**

### **Faculty of Science & Agriculture**

Three fulltime postdoctoral positions are available in the Department of Physics, Faculty of Science and Agriculture, at the University of Fort Hare (UFH), Alice Campus, South Africa. The fellowships will enable outstanding doctoral graduates to obtain experience of research and innovation at a higher education institution under the mentorship of established researchers. The fellowships are awarded on a competitive basis, considering the applicants' academic achievements, publication outputs and research potential, as well as the relevance of prior experience and expertise in physics. The fellowships are available for a period of one year but renewable depending on the performance of the post-doctoral fellow.

### **A: Postdoctoral fellowship (wind energy: WE2)**

#### **ELIGIBILITY CRITERIA**

- Applicant must have completed doctoral degree within the last five years.
- Must have graduated with a PhD degree in Physics/Renewable energy
- Should be an expert in wind energy, and the candidate must have knowledge of wind energy Mini-Grid design and performance optimisation. The knowledge of computational Fluid Dynamics (CFD) is essential.
- Preference is given to Women, South African Citizens, and SA Permanent Residents.
- Successful applicants must be able to relocate to the UFH for the duration of the fellowship.

#### **THE SUCCESSFUL CANDIDATE WILL BE REQUIRED TO:**

- Conduct innovative research on wind turbine designs, developing strategies of harnessing energy from low wind speeds.
- Modelling and simulating wind turbine performance.
- Assessing the wind energy potential using WASP.
- Construction and installation of ducted systems, that is, concentrator-diffuser system.
- Contribute to the research productivity of the research group, postgraduate students as well as the Department of Physics.
- Publish a minimum of four (4) journal articles in DHET accredited journals per annum.

#### **VALUE OF THE FELLOWSHIP**



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- R300, 000 annual fellowship

**APPLICATION:**

- Please email the following documents to Prof G Makaka ([gmakaka@ufh.ac.za](mailto:gmakaka@ufh.ac.za)) and copy Dr Patrick Mukumba ([pmukumba@ufh.ac.za](mailto:pmukumba@ufh.ac.za)).
- Motivation letter, including a 1 – 2-page outline of relevant expertise and experience.
- Full CV including a list of research publications.
- Full transcript of recent academic records and copy of doctoral degree certificate and any other relevant certificate.
- Copy of ID document (or copy of passport in the case of foreign applicants).
- Contact details of two academic referees who have taught/supervised/mentored the candidate

**FOR ENQUIRES:**

Please contact GMRDC: Email: [postdocs@ufh.ac.za](mailto:postdocs@ufh.ac.za) and [gmakaka@ufh.ac.za](mailto:gmakaka@ufh.ac.za) or [pmukumba@ufh.ac.za](mailto:pmukumba@ufh.ac.za)

**Closing date:** 1 May 2022

**B: Postdoctoral fellowship (Biomass energy: BE2)**

**ELIGIBILITY CRITERIA**

- Applicant must have completed doctoral degree within the last five years.
- Must have graduated with a PhD degree in Physics/Renewable energy
- Should be an expert in Renewable energy systems encompassing, Biomass (Biogas technology, Pyrolysis, Biomass Gasification and Energy Storage Components). The candidate must have knowledge of hybrid system optimization and Mini-Grid designs. The knowledge in internal combustion engines will be an added advantage.
- Preference is given to Women, South African Citizens, and SA Permanent Residents.
- Successful applicants must be able to relocate to the UFH for the duration of the fellowship.

**THE SUCCESSFUL CANDIDATE WILL BE REQUIRED TO:**

- Conduct innovative research on biogas yield optimization, purification, compression, and bottling.



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- Modelling and simulating biodigester performance using python and math-lab. (Demonstrate relevant experience, understanding, of biogas digester and pyrolysis reactor designs).
- Contribute to the research productivity of the research group, postgraduate students as well as the Department of Physics.
- Publish a minimum of four (4) journal articles in DHET accredited journals per annum.

#### **VALUE OF THE FELLOWSHIP**

- R300, 000 annual fellowship

#### **APPLICATION:**

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- Motivation letter, including a 1 – 2-page outline of relevant expertise and experience.
- Full CV including a list of research publications.
- Full transcript of recent academic records and copy of doctoral degree certificate and any other relevant certificate.
- Copy of ID document (or copy of passport in the case of foreign applicants).
- Contact details of two academic referees who have taught/supervised/mentored the candidate

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**Closing Date:** 1 May 2022

#### **C: Postdoctoral fellowship (Social and environmental assessment: SEA1)**

##### **ELIGIBILITY CRITERIA**

- Applicant must have completed doctoral degree within the last five years.
- Must have graduated with a PhD degree in Economics/Agricultural economics and experience in economics of energy.
- Should be an expert in econometrics and modelling of energy use.
- Applicant must understand renewable energy systems encompassing, Biomass energy and wind energy.



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- Applicant must be able to use any two of the following software: SPSS, eViews, and STATA
- Preference is given to Women, South African Citizens, and SA Permanent Residents.
- Successful applicants must be able to relocate to the UFH for the duration of the fellowship.

**THE SUCCESSFUL CANDIDATE WILL BE REQUIRED TO:**

- Conduct innovative research on the impact of renewable energy on livelihoods.
- Build energy business models for renewable energy projects.
- Conducting awareness campaigns for adaptation of renewable energy in communities.
- Use econometrics methods to model energy usage, energy management and sustainability.
- Contribute to the research productivity of the research group, postgraduate students as well as the Department of Physics.
- Publish a minimum of four (4) journal articles in DHET accredited journals per annum.

**VALUE OF THE FELLOWSHIP**

- R300, 000 annual fellowship

**APPLICATION:**

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- Please email the following documents to Prof G Makaka ([gmakaka@ufh.ac.za](mailto:gmakaka@ufh.ac.za)) and copy Dr Patrick Mukumba ([pmukumba@ufh.ac.za](mailto:pmukumba@ufh.ac.za)).
- Motivation letter, including a 1 – 2-page outline of relevant expertise and experience.
- Full CV including a list of research publications.
- Full transcript of recent academic records and copy of doctoral degree certificate and any other relevant certificate.
- Copy of ID document (or copy of passport in the case of foreign applicants).
- Contact details of two academic referees who have taught/supervised/mentored the candidate

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