

**Report on DAMOC Student Exchange Program at Stellenbosch University (SU), South Africa, November 18<sup>th</sup>, 2019-January 31<sup>st</sup>, 2020**

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Name of home institution: Nelson Mandela African Institution of Science and Technology

Name of host institution: Stellenbosch University, South Africa

Duration: Nov 18<sup>th</sup> 2019 to January 31<sup>st</sup> 2020

**1. Arrival and Registration**

I arrived in South Africa on 17<sup>th</sup> November 2019. I did not catch up with the university shuttle but it is always there to pick university guests upon request. I managed to get an accommodation near the university campus. There was a university registration which I did on 20<sup>th</sup> November 2019. I was introduced to the university by the university international office.

**2. Academic Activities at SU**

During my stay in Stellenbosch University I was attached to the Faculty of Engineering in the Department of Mechanical Engineering and Mechatronic. I was hosted by Prof Nawaz Mahomed and Dr Gareth Erfort.

I discussed with Dr Gareth Erfort issues of airfoil design and performance analysis which are part of my research. I was familiarised on how to use XFOIL software in designing an airfoil. There was an introduction of python software for analysing results of XFOIL. Different airfoils were analysed and selected for making a wind turbine blade with different airfoil sections. Using XFOIL results basing on the blade element momentum (BEM) method the power coefficient ( $C_p$ ) of the rotor was calculated.

### **3. Social Cultural activities in Stellenbosch/South Africa.**

It was real enjoyable to live in South Africa particularly at Stellenbosch. It was a time when most of students and academic staff were in holidays. I could use evening time to walk around the SU campus to experience the beauty of the university. There are high class football pitches, a botanical garden with lots of species of plants, good roads and tracks that are used for jogging and mountain hiking near the university.



#### **4. Conclusion**

Stellenbosch is a high class university where knowledge is generated, transferred and used. I benefited a lot academically for my visit and stay in SU. I learned how to use XFOIL and python for designing and performance analysis of wind turbine rotor system. I really appreciate the DAMOC and particularly my supervisor Dr. Thomas Kivevele, for the visit and stay in Stellenbosch University.