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Institute of Energy and Climate Research - Energy Systems Engineering

Forschungszentrum Jülich

Wilhelm-Johnen-Straße Jülich,

Subject: Application for PhD Position in High-performance Simulation and Optimization of Energy Systems

Dear Recruitment Team,

I am writing to apply for the PhD position in High-performance Simulation and Optimization of Energy Systems within the Energy Grids department at Forschungszentrum Jülich GmbH. I am highly motivated to contribute to cutting-edge research in the field of energy systems and believe that my qualifications and research interests make me a strong candidate for this position.

During my Masters in Energy Systems at Skolkovo Institute of Science and Technology and University of Nigeria, I conducted research on two key topics related to energy systems. At the University of Nigeria, my research focused on photovoltaic power forecasting using machine learning techniques. I developed models and algorithms to predict the power output of photovoltaic systems based on weather data, historical power generation, and other relevant variables. This research aimed to improve the integration of solar energy into the grid by providing accurate and reliable forecasts, facilitating better resource management and grid stability.

During my time at Skolkovo Institute of Science and Technology, I conducted research on grid voltage and frequency improvement using thermostatically controlled loads. I investigated the potential of utilizing residential loads, such as air conditioners and water heaters, as controllable assets to maintain grid voltage and frequency within acceptable limits. Through modeling and simulation, I demonstrated the effectiveness of incorporating thermostatically controlled loads in grid management strategies to enhance grid stability and resilience.

These research experiences have provided me with a strong foundation in energy systems, machine learning, and control techniques. I have gained expertise in data analysis, algorithm development, and simulation using tools such as Python, MATLAB, and SIMULINK. I am excited to apply and expand this knowledge in the context of high-performance simulation and optimization of energy systems as part of the esteemed research team at Forschungszentrum Jülich.

I am available to start work at Jülich from September 2023, and I am eager to contribute to the advancement of high-performance simulation and optimization of energy systems. Working alongside a highly motivated research group in one of the biggest research centers in Europe would provide an exceptional opportunity to further develop my skills and contribute to the field.

Thank you for considering my application. I have attached my CV for your review. I am eager to discuss how my qualifications and research interests align with the objectives of the Energy Grids department. I look forward to the possibility of an interview to further demonstrate my suitability for the position.

Yours sincerely,

Divine Okeke