

Statement of Research Interest

"Nepal, the country with a large number of perennial rivers along with the suitable topographical structure, has huge upside potential of hydroelectricity (approximately 40,000 MW economically feasible hydropower potential)." , this is the statement I had listened several times since my school days. Eventually I developed interest in Electricity field as I grew up, and decided to contribute in the field and also make a career in the same. I got admitted to pursue Bachelor's degree in Electrical Engineering from Eastern Region Campus, I.O.E., T.U.

During my study there, I felt I had developed a keen interest in the subject 'Power System Analysis ' and thus went on to do "**Grid Impact Study of Eastern Part of Nepal along with Upper Tamakoshi Hydropower Plant and Cross Border Links**" as Final year project to complete my Undergraduate study. This project was one of the best project from our class thus me and my teammates were lauded for the effort and enthusiasm shown by us.

The objective of the project was to perform the grid impact study after addition of a new hydropower plant on the grid. For this, the following actions were performed :

- ◆ Load flow analysis of the grid in MATLAB/SIMULINK to find out the voltage, active power, reactive power and also the surplus power.
- ◆ Analyzing the effect of STATCOM to improve voltage at a substation.
- ◆ Transient stability analysis of the grid to calculate critical clearing time for protection device and analyze the effect of different types of faults.

This project has increased my knowledge and understanding of subject matter so I would like to express my gratitude to my supervisor Associate Professor Jeetendra Chaudhary and faculty members along with my teammates for their constant guidance and support.

In present scenario, Electricity has become a fundamental need for all the development activities and well as common day to day life. For India and Nepal, the developing countries, Electricity has been backbone for overall economic and social development. As an Electrical Engineering graduate we had a lot to contribute in the electricity field. There is still room for the advancements and betterment of different aspects of Power and Energy systems and its management. As a post graduate student my research interest includes the power system analysis and operation; its dynamics, control and protection, AC and DC transmission along with energy system structure, grid integration of the renewable energy, distributed generation system and many more.

So, I had opted to study M.Tech Power and Energy Systems at your prestigious institute to gain deep knowledge and understanding, and fulfill my research interest which would make me capable to contribute in the field of power and energy systems as well as facilitate my educational and career goals.