

## **Abstract**

The study of faults is essential to assess the stability of power network and the selection of protection devices with proper power ratings - such as circuit breakers, protection relays and fuses. This research presents the study of fault currents and the design of IoT base Monitoring & Protection System (MPS) for 10 MVA Distribution Transformer (DT) integrated with an 11KV distribution network of Taxila University. A complete 40-bus distribution system with real parameters was simulated in ETAP software, and fault current analysis at the standards of ANSI / IEEE was conducted on the DT secondary bus in order to understand the fault current dynamics on the DT. With the assistance of results obtain from the simulations, it is obvious to assess the short circuit capacity of protection relays and programming logistics of IoT base MPS for DT. In the case of fault currents, installed power rating Current Transformers (CTs) on each phase of 10MVA DT instantaneously send data to Blynk server for real-time fault analysis, monitoring and operation of High Voltage (HV) protection relays.