FUTURE RESEARCH PROSPECTS

1. The biomechanics of the microcantilever based diagnostic kit is a major hurdle in the path of commercialization of BioMEMS based devices. An in-depth analysis is required to understand the mechanisms of biomechanics operating at such a small scale.

2. The deflection of the microcantilever in response to the biomolecular interactions between antigen and antibody is not fully understood. The deflection of microcantilever takes place due to change in stress at the surface of the microcantilever. When the biomolecular interactions take place on the surface of the microcantilever, there is change in tensile and compressive stress on the microcantilever, which leads to the upward and downward deflection of microcantilever. The deflection is not gravity dependent i.e. based on the mass of the analyte, as was predicted initially. Therefore, research is required to understand the mechanism of change in stress on the microcantilever surface in response to the biomolecular interactions.

3. The biomolecular electronics of solid-substrate immobilized biomolecules i.e. antibody and antigen is a recent field and much remains to be studied to explore and understand the pattern of conductance in these immobilized biomolecules. Although much of work had been done in the last decade to understand the charge conductivity in DNA but the charge conductivity in proteins has not yet been fully explored.