

## **ABSTRACT**

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The use of technology has been an integral part of developing various medical instruments in healthcare systems. Moreover, it also improves as well as increases the efficiency of the system. Particularly, robotics has been widely used to make good and error-free systems in this healthcare system. In this study, a new portable smart automatic biomedical testing system, which is driven automatically from the blood sampling to the blood, is developed to establish the point-of-care technology in the ubiquitous medical care. It aims to overcome human errors. It will be available at a low cost. In this study, I mainly discuss the development of automatically operated blood collecting and sampling systems. This system consists of three parts. They are a smart lancet-based blood collection system, an Automatic blood sample collecting system, and a passive andro humanoid interface. A prototype of a blood sample collecting system has been made and examined. And it shows very good performance in case of accuracy.

