

BIOMEDICAL INSTRUMENTATION – RESEARCH AND APPLICATIONS

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Medical instrumentation has been one of the thrust areas of R & D at CSIR-CSIO since its inception. Medical instruments of a wide variety involving multi-disciplines were realised in the laboratory in the past, which were not only useful in preventive and curative health-care measures but were also necessary for carrying out physiological investigations. The focus of biomedical engineering group here has been on diagnostic, therapeutic and prosthetic devices for rehabilitation purpose.

With the advancement in measurement sciences and analytical techniques, the field of medical instrumentation has witnessed a phenomenal transformation through the convergence of engineering and life science. CSIR-CSIO has also been making constant efforts to incorporate "Intelligence" in all its medical instruments in the broad areas of diagnosis, patient monitoring, therapy and rehabilitation. These efforts have resulted in state-of-art equipment involving efficient man-machine interface and capability for detection, automatic diagnosis, auto-calibration and failure diagnosis. Clinical Chemistry Analyser to evaluate important biochemical parameters of blood such as glucose, urea, protein, bilirubin, etc, Sodium Potassium Analyser to determine sodium and potassium levels in urine, blood, serum, etc, Pulse Oximeter designed optimally for output power, size, weight and features, Myoelectric Arm, Programmable Electronic Knee, Hand Held Scanning Device for reading by the blind, Anaesthesia Workstation, etc are some of the devices & gadgets successfully developed in the laboratory in the recent past. Future programme includes developing capabilities in Robotic surgery and intelligent assistive devices required in hospitals and soldier movement in hills.

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