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Abstract

## Portable Measurement System of Athletic Performance in Aerobic Phase with Acquisition of LabVIEW Platform and ATmega Controllers.

E. Sanchez-Velarde<sup>\*1</sup>, O. Rico-Asención<sup>\*1</sup>, M.G. Ramírez-Sotelo<sup>\*2</sup>, A.I. Cabrera-Llanos<sup>\*1</sup>

<sup>\*1</sup> Department of Bioprocess, Interdisciplinary Professional Unit of Biotechnology, National Polytechnic Institute, Mexico City

<sup>\*2</sup> Department of Bioengineering, Interdisciplinary Professional Unit of Biotechnology, National Polytechnic Institute, Mexico City

**Abstract:** In this work, a remote monitoring system for measuring heart rate and deployment of an ECG signal is presented. This system uses a pulse sensor plug-and-play type placed on the lobe of the patient to obtain a signal, which is represented by squares; each symmetric pulse width is the width of the plethysmographic signal obtained by the sensor. And, an electrocardiograph developed for obtaining a derivative (positive, negative, and reference electrode), a filtering step to obtain the complete signal through the basic vector comprising Eithoven triangle. Both signals were transmitted via a ZigBee protocol radio frequency, using two Xbee modules series S1, data were received through a ATMEGA328P, later, by the LabVIEW platform, and anthropometric data of the individual, to monitor the heart rate, continued deployment of the 2 signals obtained presented along a routine of aerobic exercise and a history of heart and indicator signal obtained this in order to observe their status. A series of measurements of heart rate and ECG signal for individuals undergoing physical activity of different intensity is presented.

**Keywords:** Heart Rate, Athletic Performance, Physical Activity, Monitoring Online

Corresponding author: A.I. Cabrera-Llanos

[aicllbuda@yahoo.com](mailto:aicllbuda@yahoo.com)