

QUANTITATIVE CHARACTERIZATION OF CO₂ IN A TROPICAL FOREST IN COSTA RICA USING WIRELESS SENSOR NETWORKS

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ABSTRACT

The effects of climate change have created a global awareness of the need to quantitatively measure the presence of gases that enhance the greenhouse effect. According to most authors the greatest contribution to the greenhouse effect is provided by carbon dioxide (CO₂), a number of methods for determining the stocks of carbon in the field according to biomass quantity have arisen. This article describes a method of quantitative measurement of the presence of carbon dioxide (CO₂) in an open environment by implementing a wireless sensor network that centralizes the collected information to facilitate the decision making process. The methodology applied to implement a wireless sensor network of CO₂ began with the characterization of a CO₂ sensor to validate the appropriate measurement range for the environment in which it been applied. Required driver software was developed to connect the measurement node to the wireless network with the CO₂ sensor.

PALAVRA-CHAVE: climate change, wireless sensor networks, measurement of CO₂