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Título:	Greenhouse microclimate real-time monitoring based on wireless sensor network and gis
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Palavras-chave:	air quality greenhouse microclimate
Data:	Set-2012
Resumo:	The usage of greenhouse with controlled microclimate represents an important way to increase the production of fruits and vegetables considering the plants needs and has recently become one of the hottest topics in precision agriculture. In order to know and to control the greenhouse microclimate smart sensing nodes with wireless communication capabilities represents the solution. As one of promissory protocol associated with wireless sensor network can be mentioned the ZigBee due to its low cost, low power consumption, extended ranges and architecture flexibility. In the present work a sensing and control sensing nodes with ZigBee communication capabilities are considered, while the microclimate is monitored using a set of solid state sensors for temperature, relative humidity, light intensity and CO2 concentration considering this parameters with important role in plants growing. Every sensor node uses energy from a solar cell through a battery charger circuit considering also the powering of the sensing and control node during the night periods. The data from ZigBee network nodes are sent to Wireless-Ethernet gateway connected to a computer that runs a LabVIEW application that perform primary processing and web geographic information system that provides information about the greenhouse microclimate. Elements related power harvesting for implemented wireless sensor network, as so as a set of experimental results are included in the present work.
Descrição:	Trabalho apresentado em XX IMEKO World Congress Metrology for Green Growth, 9-14 setembro de 2012, Busan, Coreia do Sul
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Ficheiros deste registo:

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