

Master 2014

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Development of an Energy Autonomous Wireless Light Sensor for Automotive Applications.

ABSTRACT - Masterthesis

The rapid advancement of wireless technology and energy autonomous sensors makes it to become state of the art in the near future: The primary goal of this master thesis is to develop a new kind of light sensor for automotive applications to control the headlights of a car. In contrast to the ordinary light sensors this new development must have an energy harvesting power supply and a wireless communication interface to the Electronic Control Unit (ECU) of the vehicle. With the new features the proposed light sensor can act as a completely self-supporting device without any wired connection. If the sensor had a pre-glued mechanical interface it could be retrofitted by customers without a professional maintenance support. The investigation and analysis of energy harvesting solutions and in safe and reliable low power wireless connections is the major target of this Master thesis. Furthermore, a prototype has to be created to demonstrate the scientific results.

This research work proposes an empirical study of the energy autonomous light sensor with low power wireless technology and implements the proposed sensor model in a real environment.