

Implementation of linear trace moisture sensor by nano porous thin film moisture sensor and NLamp

Dilip Kumar Ghara, Debdulal Saha & Kamalendu Sengupta*

Sensor and Actuator Division, Central Glass & Ceramic Research

Institute, Jadavpur, Kolkata-700 032, INDIA.

FAX: +91 33 2473 0957, Ph No.: +9133 2473 3469/76/77/96

*E-mail: kamalendusengupta@yahoo.co.in

dilipghara@gmail.com

Abstract: Almost all type of moisture sensors has a non-linear response. With out linearization it is difficult to apply such a non-linear sensor in electronics circuits, specially in analog electronics. Non linear sensor and transducers characteristic can be linearized using analog electronics or digital electronics. In this paper a method of linearization of such non-linear sensors characteristics using analog electronics is described. Theoretical explanation of the methods and its verification by experiment is stated in this paper. It may possible to linearize any non linear characteristic using this method. We use thin film nano porous trace humidity sensor as a non linear device for the circuit justification. The fabrication process of the sensor is also described in this paper.

Keywords: Differential slope, Amplifier gain control, Analog multiplexer, Trace moisture sensor, PWM.