

## **IFMBE Proceedings**

Volume 77, 2020, Pages 253-257

4th International Conference on Nanotechnologies and Biomedical Engineering, ICNBME 2019; Chisinau; Moldova; 18 September 2019 through 21 September 2019; Code 232319

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**DOI:** 10.1007/978-3-030-31866-6\_50

## **Sensorial and local reflectivity properties of the columnar ZnO:Eu films**

### **Abstract**

In this work, we report on sensorial properties dependent on the operating temperature for Eu-doped ZnO columnar samples. The films demonstrated sensorial properties to volatile compounds, namely for 2-propanol. The results have been explained by increased basic properties of ZnO after doping with ions of Eu, that lead to catalyzing of dehydrogenation processes of molecules, and higher response. Local reflectivity maps of the sensor samples with a very high spatial resolution were recorded by using a specially modified measurement

set-up, which had been originally designed for the electrical characterization of photovoltaic solar cells. The variation of the local reflectivity of the active sensor area is caused by different film properties that are most probably the result of the deposition process and/or handling. In the future, a systematic analysis and correlation of the performance data of various sensor samples with such reflectivity maps may lead to a better understanding and improvement of the film deposition process and thus to finally better sensors.