



Contribution ID: 493

Type: **Poster Presentation**

## Microstructural and electrical evaluation of ZnO solgel films

*Tuesday, 10 July 2012 17:30 (2 hours)*

### Abstract content <br> &nbsp; (Max 300 words)

ZnO thin films have been produced using a solgel method. The zinc acetate, methoxyethanol and ethanolamine (also known as MEA) were mixed together for a maximum of 2 hours at temperatures between 60°C and 80°C using a magnetic stirrer/hot plate with a temperature controller which controls the temperature to within 1°C. After stirring at temperature, the solution is left for 48 hours, and after which the thin films were spin-coated onto the glass substrates. Multiple layers were deposited on the substrates, and these layers were dried at 200°C for 3 minutes between each spin-coated layer. After deposition the samples were heat treated in the temperature range 300°C to 500°C.

The microstructures of the various layers before and after heat treatment were studied using AFM and SEM. X-ray diffraction and Raman spectroscopy was used to determine the phases present and the crystallinity of the film. The electrical properties (current-voltage) of the films were measured as a function of the heat treatment temperature.

The effect of the heat treatment on the microstructural properties and electrical properties will be discussed.

### Apply to be<br> consider for a student <br> &nbsp; award (Yes / No)?

Y

### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD)?

3rdYr

### Main supervisor (name and email)<br>and his / her institution

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### Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

No

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**Session Classification:** Poster Session

**Track Classification:** Track A - Division for Condensed Matter Physics and Materials