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Microstructure and Electron Transport in ZnO:Al Thin Films
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Transparent, conducting ZnO:Al thin films deposited by sputtering may figure prominently in emerging opto-electronics and energy conversion technologies. However, there remain significant unanswered questions regarding the relationship between the microstructure of sputtered ZnO:Al films and the fundamental electronic transport properties. We will present initial results of a study which aims to address some of these questions by using microscopic probes to measure the effect of grain boundaries on electron transport in reactively sputtered films. Particular emphasis will be on how oxygen concentration affects local electron conduction.

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