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Band Alignment in Transparent Conducting Oxide Schottky Junctions RAFAEL JARAMILLO, SHRIRAM RAMANATHAN, Harvard University — Better understanding and control of band alignment in oxide-semiconductor heterostructures is essential for improving the performance of devices such as sensitized solar cells and quantum dot based light emitting devices. We will present studies of Schottky junctions formed between Al-doped ZnO (AZO) conducting oxide thin films and lightly doped silicon. AZO films with varying oxygen content have been synthesized by control of oxygen pressure during growth. Transport measurements (I-V and C-V) on devices are used to illustrate the degree to which the oxide stoichiometry can be used to engineer the junction characteristics.

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