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Role of Contacts in Capacitance Measurements of Solar Cells

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Linfield College — The electronic properties of low cost, thin-film solar cells are complicated by the non-ideal nature of the semiconductor layers. Typically, the fundamental electronic properties of such materials are evaluated using current-voltage and capacitance-voltage measurements. However, in these devices, it is common for the back contact to be non-ohmic. We are exploring the impact of such a back contact on the outcome of standard capacitance-based characterization techniques. We compare computer models of capacitance response with measurements of simple model electronic circuits, and of solar cell devices.

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