

# TRANSPARENT CONDUCTORS

## FUNDAMENTALS AND APPLICATIONS

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### Abstract

Transparent conductors (TCs) are a fascinating class of materials with a unique set of optical and electrical properties – they are essentially metals that you can see through! This talk will cover the basic physics needed to understand the origin of their opto-electronic behaviour and describe how you can build a hypothetical TC from scratch through a consideration of its dielectric permittivity.

The technological implications of these materials will be discussed, particularly with respect to photovoltaics, and we will ask the question “what would a world without transparent conductors be like?”. You might not like the answer.

**This talk is available online at:**

**<http://pvlink.org/TCO>**