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## A Study of Photo-Generated Charge Carrier Density in Dye Sensitized solar cells by Microwave Reflectance

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

The Microwave technique is now a well established tool for contactless measurements of charge carriers in semiconductors. In Dye sensitized solar cells the transport mechanism is not yet fully understood, as there is a need to quantify the relationship between the photomodulated reflectivity and conductivity of the porous TiO<sub>2</sub> semiconductor layer. Interpretation of the experimental results requires a relationship between the reflectivity and conductivity to be established. In addition to calculating this proportional factor, we also want to quantify the electron transport in DSSCs, as a better understanding of the transport mechanism could lead to improve device efficiency. A 3D simulations model was developed for the study of photogenerated charge carriers by microwave reflectance techniques in DSSCs. This model is able to reproduce several features of the experimental results. Comparison of the calculated microwave reflectance changes with the experimentally measured data revealed that the experimental response was much larger than expected.

### Bibliography

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NO

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