

## Abstract

### **Novel Nanocomposite Coating with Dispersed Organic Nanoparticles for Solar Absorbers**

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Titanium oxide thin films were prepared by reactive DC magnetron sputtering and reactive pulsing DC magnetron sputtering from a Titanium target in a O<sub>2</sub> + Ar atmosphere onto glass slides. A natural pigment (Anthocyanin extracted from sambucus nigra fruit) was incorporated by dipping the films into a pigment solution. The pigment solution has red colour and an absorption peak located between to 540 nm.

Pigment incorporation in thin films was found dependent of microstructure, which depends on deposition parameters, like pulsing frequency. The incorporation of this pigment in TiO<sub>x</sub> thin films increases the final solar absorption and decreases the final average roughness of these films. The effect in solar absorption is higher in films prepared by DC and pulsed DC at pulsing frequency of 200 kHz.

For the full text/poster contact the author(s):

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