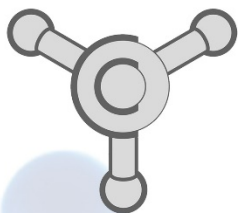


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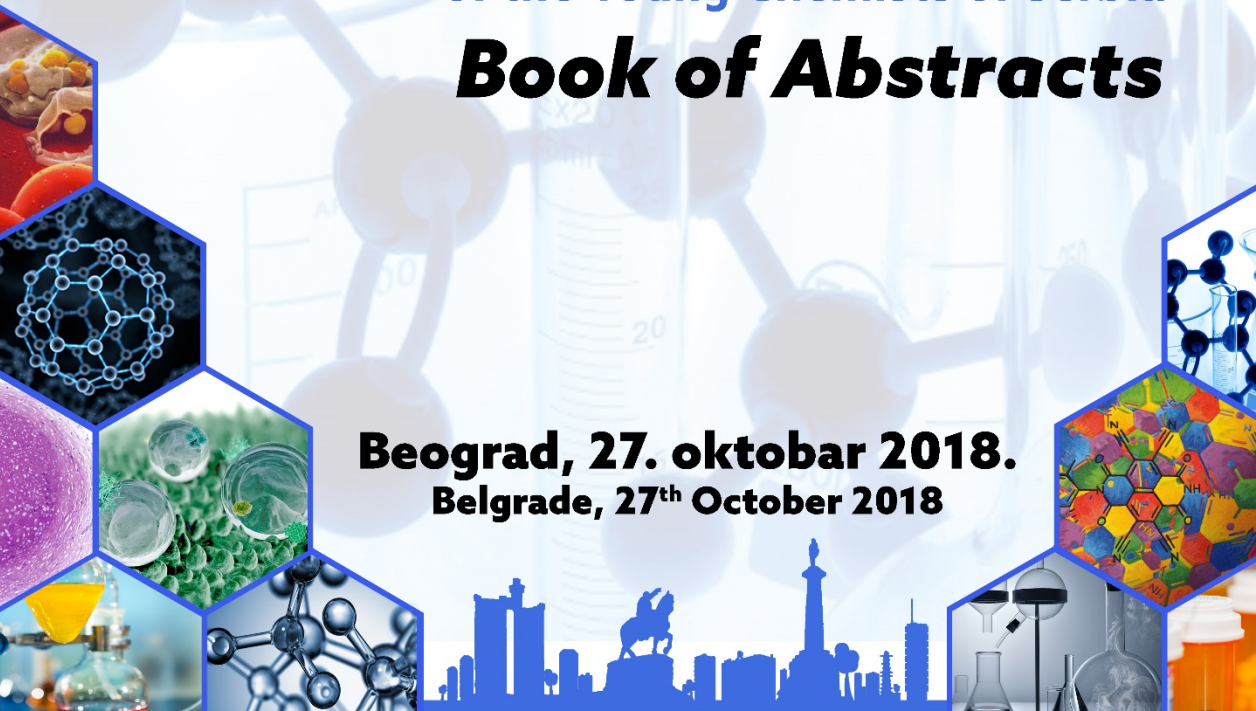


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Influence of azo dye structure on photovoltaic characteristics of dye sensitized solar cells

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Dye-sensitized solar cells (DSSC), as a main competitor to a silicon solar cells, present a new technology which has been in constant development for two decades. In this paper, six azo dyes based on benzoic and cinnamic acid moiety, which represent a generators of charge carriers, have been synthesized. Compounds were characterized by melting point, UV-Vis, FT-IR, ¹H i ¹³C NMR spectroscopy. Current density-voltage curves were recorded in order to determine basic DSSC operating parameters, *i.e.* short-circuit current density (J_{sc}) and open-circuit voltage (V_{oc}). Based on the obtained results, 4-(2-hydroxynaphthalenazo)cinnamic acid and 4-[4'-(*N,N*-dimethylamino)phenylazo]-cinnamic acid have shown the most significant energy conversion efficiency (η) [1,2].

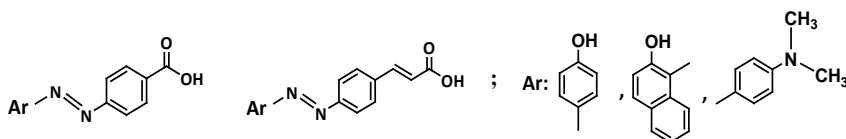


Figure 1. Molecular structures of synthesized dyes

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