

Highly robust tetrazolate based complexes for efficient and long-term stable dye sensitized s o l a r c e l l s †

Tharallah A. Shoker, Ralph Tanios, Remi Fayad and Tarek H. Ghaddar*
Department of Chemistry, American University of Beirut

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We report a new family of ruthenium(II) complexes that bear tetrazolate based ligands (bi-chelate as **T162** or trichelate as **T120** and **T147**), along with their spectroscopic, electrochemical, and theoretical characterizations. Dye sensitized solar cells (DSSCs) with these complexes show good conversion efficiencies that are highly dependent on the respective electrolyte composition especially in the case of **T120** and **T147**, due to their low lying LUMOs when compared to **N719** and **T162**. DSSCs based on these dyes showed superb stability under light soaking at 70 °C for 200 h. The based cells retained their initial efficiencies after the stability test, while **T162** and **N719** efficiencies decreased by 18% and 40%, respectively.