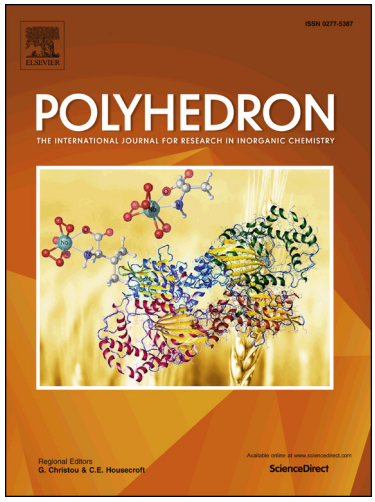

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PII: S0277-5387(17)30610-1
DOI: https://doi.org/10.1016/j.poly.2017.09.033
Reference: POLY 12843

To appear in: *Polyhedron*

Received Date: 24 June 2017
Revised Date: 1 September 2017
Accepted Date: 5 September 2017

Please cite this article as: K.E. Sekhosana, M. Shumba, T. Nyokong, Electrochemical and non-linear optical behavior of a new neodymium double-decker phthalocyanine, *Polyhedron* (2017), doi: https://doi.org/10.1016/j.poly.2017.09.033

Electrochemical and non-linear optical behavior of a new neodymium double-decker phthalocyanine

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Abstract: This manuscript presents the non-linear optical parameters obtained specifically at 532 nm using the new bis-{1(4),8(11),15(18),22(25)-(tetrapyridin-3-yloxy) phthalocyaninato} neodymium(III) complex in green (**2a**) and blue (**2b**) forms as well thin films prepared from the green form in the presence of poly(bisphenol A) carbonate. It is interesting to note a huge improvement of the reduction efficiency of transmission of the green form by 34% in poly(bisphenol A) carbonate as a thin film. The same observation is noted for the blue form at 25%. The same trend was observed for the excited state cross sections in which the blue form of the bis-{1(4),8(11),15(18),22(25)-(tetrapyridin-3-yloxy)} phthalocyaninato} neodymium(III) complex as well as the thin film exhibited values that were about three and six times greater than those of the green form, respectively. The electrochemical properties were also studied, with complex **2a** exhibiting six redox processes in DCM, by employing tetrabutylammonium tetrafluoroborate as an electrolyte.

Keywords: Non-linear optical parameters; band widths; laser irradiations; reduction efficiency; redox processes, electrolyte.