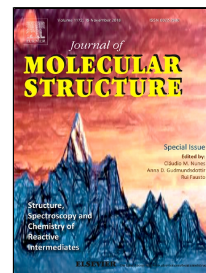


Accepted Manuscript

Molecular balance forms of indium phthalocyanines in benzene and pyridine solution



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PII: S0022-2860(18)31144-X
DOI: 10.1016/j.molstruc.2018.09.062
Reference: MOLSTR 25696
To appear in: *Journal of Molecular Structure*
Received Date: 08 May 2018
Accepted Date: 21 September 2018

Please cite this article as: Ryszard Kubiak, Gabriela Dyrda, Krzysztof Ejsmont, Molecular balance forms of indium phthalocyanines in benzene and pyridine solution, *Journal of Molecular Structure* (2018), doi: 10.1016/j.molstruc.2018.09.062

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Molecular balance forms of indium phthalocyanines in benzene and pyridine solution

Abstract

The electronic absorption spectra of In_2Pc_3 , InPc_2 and InPcI solid compounds after dissolution in one of the most commonly used solvents, i.e.: benzene and pyridine have been measured. In benzene, the molecules of the diindium tripledecker phthalocyanine, In_2Pc_3 , undergoes transformation to ionic couples $[\text{InPc}]^+[\text{InPc}_2]^-$, whereas when the InPc_2 compound is dissolved, the molecules of the indium sandwiches, InPc_2 , remain relatively stable in the solvent.

When the In_2Pc_3 compound is dissolved in py, the inner $\text{Pc}(2-)$ ring of diindium tripledecker phthalocyanine molecule undergoes disjunction and rejection. In the results of it in the solution the couple of chromophores, being in the dynamical balance $([\text{InPc}(2-)])_2 \leftrightarrow 2 \text{InPc}(3-)$, is formed. When the InPc_2 compound is dissolved in py, the $\text{Pc}(-)$ rings of the compound molecules undergo disjunction and rejection, what leads to formation three different chromophores in solution i.e.: In_2Pc_3 and $(\text{InPc}(2-))_2 \leftrightarrow 2\text{InPc}(\cdot 3-)$ couple. Spectra for InPcI compound, are taken for comparison, at benzene and at py, show no changes of the chromophore. The molecular mechanisms of the transformations of the In_2Pc_3 and InPc_2 compounds in solutions are proposed and discussed.

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