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Influence of Heterocyclic Substituents on Mesomorphic Properties of Copper Phthalocyanine Derivatives

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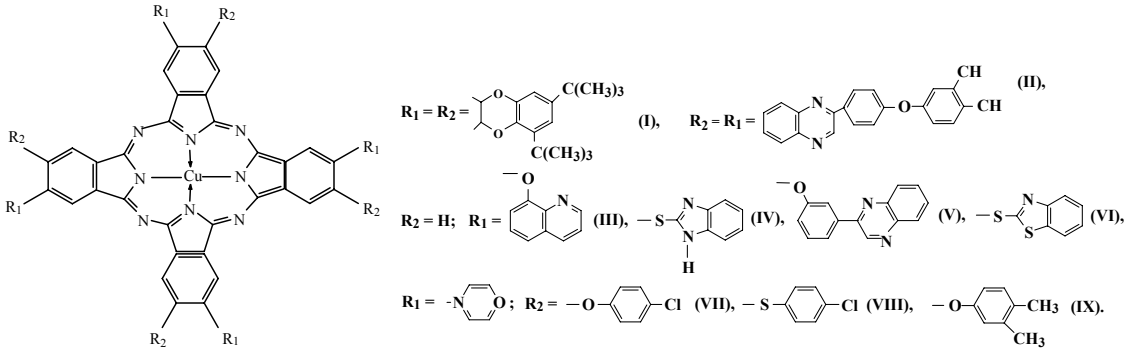
With the purpose to study the influence of moleculare structure on mesomorphic properties of copper phthalocyanine derivatives we researched phthalocyanine derivatives with heterocyclic substituents (**I–IX**). By the method of polarizing microscopy it was shown that compounds **I** and **II** possess thermotropic mesomorphism. Compound **I** forms mesophase at T = 128°C. Instead of the phase



transition into the crystal state, transition into the glass state with the preserved mesomorphic texture is observed on cooling. Compound **II** reveals the phase transition crystal – mesophase at 212°C. On cooling the mesophase glasses. Compounds **I** and **VI** reveal lyotropic mesomorphism, forming nematic phase in the binary system with chloroform at room temperature. So compound **I** possesses amphotropic properties, compound **II** – thermotropic mesomorphism, compound **VI** displays only lyotropic mesomorphism, the rest of the synthesized compound, **III–V** and **VII–IX,** are non-mesomorphic. The obtained results are discussed from the point of the influence of the lateral substituents structure peculiarities in discotic compounds on mesomorphism.

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