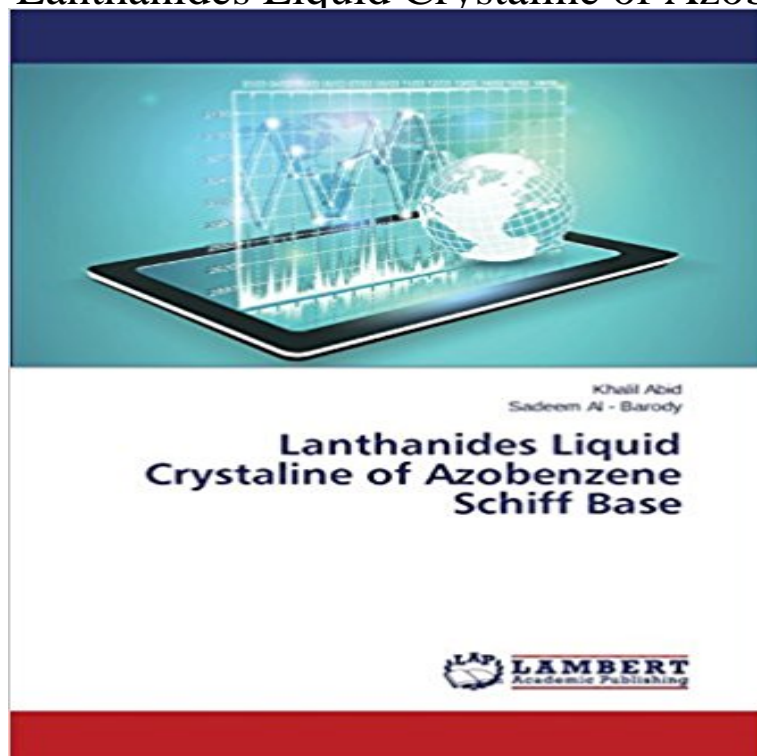


## Lanthanides Liquid Crystalline of Azobenzene Schiff Base



This research presented in this project is aimed to create new structures based on azobenzene mesogenic unit, which can support a mesophase. In particular, two types of mesogenic and non mesogenic materials have been designed and developed, following the general criteria required by molecular structure to exhibit liquid crystalline behavior. Double arms azobenzene Schiff base ligands and four lanthanide complexes ( $\text{Ln} = \text{La}^{+3}$ ,  $\text{Ce}^{+3}$ ,  $\text{Sm}^{+3}$  and  $\text{Gd}^{+3}$ ) were synthesized and characterized. Two forms of ligands exist in the complexes; one as tetradentate and bidentate for the other as it present in zwitter ionic form. The ligand and lanthanides complexes exhibit smectic-A (SmA) broken focal-conic fan texture during heating and cooling process to crystalline solid (Cr) phase.

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