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
A new dinuclear lead(II) complex of 2,3-diphenyl-tetrazole-5-thione: synthesis and characterization

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Abstract: The present work reports on the synthesis, crystal structure, fluorescence, electrochemical behavior, and thermogravimetric analysis of a new dinuclear lead(II) complex of 2,3-diphenyl-tetrazole-5-thione. Its structure was characterized by X-ray crystallography, IR spectroscopy, and elemental analysis. Each lead atom adopts a distorted octahedral geometry by coordinating to 2 sulfur atoms from 2 2,3-diphenyl-tetrazole-5-thione ligands and 4 oxygen atoms from 3 nitrates. The fluorescence spectrum shows that the title complex has 2 fluorescence emission peaks, at 412 nm and 433 nm. Cyclic voltammetry studies show that the title complex has only one reduction peak, at 0.309 V. The thermogravimetric analysis indicates that the title complex shows a thermal stability below 211 °C; it may decompose instantly above that temperature.

Key Words: Lead complex, tetrazole-5-thione. crystal structure, fluorescence, electrochemistry

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