

## **Cyclopalladates of naphthylazobenzenes: Synthesis, isomerism, metaloxylation and photochemical behaviour**

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A group of 2-substituted phenylazo-1-naphthalenes react with palladium(II) to give cyclopalladated species, in which palladium-carbon bond formation occurs at the naphthyl ring. In ethanolic medium, 2-alkylthio-phenylazo-1-naphthalene reacts with palladium(II) and yields an isomeric mixture of compounds (1) and (2). The structures of both (1) and (2) have been determined by X-ray crystallography. Both the compounds are cyclopalladated species having Pd-C(naphthyl) bond. Cyclometallation occurs at C(8) of the naphthyl ring in compound (1) whereas compound (2) contains Pd-C bond at C(2) of the naphthyl ring. Spectral and microanalytical characterization of (1) and (2) are also reported. At room temperature compound (2) undergoes selective metaloxylation reaction (oxygen atom insertion into metal-carbon bond) with *m*-chloroperbenzoic acid but compound (1) fails to react. In solution, the photochemical conversion of (1) to (2) has been observed.