

## BEHAVIOR OF BIPYRIDINE DERIVATIVE Cu(I) COMPLEXES IN DONOR SOLVENTS

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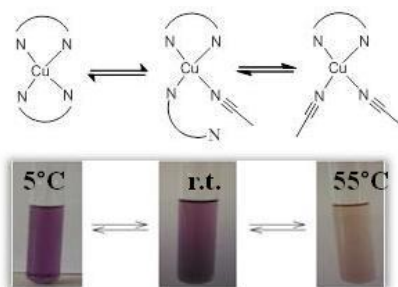
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### Abstract

Cu(I) complexes are known as highly emissive compounds having interesting fluorescence applications[1]. The luminescence is generated by more intense metal to ligand charge transfer (MLCT) electronic transitions for Cu(I), affording longer excited-state lifetimes compared to transient d-d excited state of Cu(II)[2]. Herein we report the behavior of two bipyridine derivative Cu(I) complexes containing phenanthroline and biquinoline ligands, respectively, in donor solvents as dimethylsulfoxide and acetonitrile. The Cu(I) phenanthroline complex (**1**) is unstable in solution, due to oxidation of Cu(I) to Cu(II) in time, accompanied by change in coordination geometry from tetrahedral to trigonal bipyramidal. The Cu(I) biquinoline complex (**2**) is more stable in donor solvents, the stability increasing at low temperatures with the stabilization of tetragonal geometry of Cu(I). In case of biquinoline ligand, this kind of geometry is stabilized by the bulky aryl substituents at a position with respect to the pyridine nitrogen.



The proposed mechanism of dissociation of **2** in AcCN with increasing temperature

### Acknowledgment

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### References:

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