THE ELECTRONIC SPECTRUM OF CRYOGENIC RUTHENIUM-TRIS-BIPYRIDINE DICATIONS

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We present the electronic spectrum of Ru(II)-tris(2,2'-bipyridine), $Ru(bpy)_3^{2+}$, measured by photodissociation spectroscopy of mass selected $Ru(bpy)_3^{2+}{\cdot}N_2$ ions prepared in a cryogenic quadrupole ion trap. The spectrum is composed of several metal-to-ligand charge transfer (MLCT) transitions, as well as metal centered bands and ligand centered $\pi\pi^*$ states. We observe several partially resolved electronic transitions in the MLCT band. We discuss the results in the framework of time-dependent density functional theory.