Excitonic Bands in the Optical Absorption Spectra of (Bu$_4$N)CuBr$_2$, 
(Et$_4$N)$_2$Cu$_2$Br$_4$, (Pr$_4$N)$_2$Cu$_4$Br$_6$, (Bu$_4$N)$_2$Cu$_2$I$_4$, (Me$_4$N)Cu$_2$I$_3$, (Pr$_4$N)$_4$Ag$_4$I$_8$, 
(Me$_4$N)Ag$_2$I$_3$, (Et$_4$N)Ag$_2$Br$_3$, and Similar Compounds

G. C. Papavassiliou$^a$, G. A. Mousdis$^a$, A. Terzis$^b$, C. P. Raptopoulou$^b$

$^a$ Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48, Vassileos Constantinou Ave., Athens 116/35, Greece  
$^b$ Institute of Material Sciences “Demokritos” NCSR, Ag. Paraskevi Attikis, Athens 153/10, Greece

Z. Naturforsch. 54 b, 109–112 (1999); received July 3, 1998

Main Group Metal-Halide Complexes, Electronic Spectra, Excitons

The title compounds (natural low-dimensional semiconductor systems) exhibit strong excitonic optical absorption bands in the UV spectral region, because of the quantum confinement of excitons, as in the cases of bivalent-metal and trivalent-metal halide complexes. The excitonic bands are shifted to longer wavelengths, approaching those of the corresponding bulk materials, as the anion-size or the anion-dimensionality increases.

* Reprint requests to Prof. G. C. Papavassiliou.