Synthesis, characterization and electrical properties of quaternary selenodiphosphates: AMP2SE6 with A = Cu, Ag and M = Bi, Sb

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The new quaternary selenophosphate phases AMP2Se6 (A = Cu, Ag and M = Bi, Sb) were synthesized by ceramic methods at 1023 K. These phases were characterized by powder X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), energy dispersive X-ray analysis (EDX) and a.c. and d.c. electrical conductivity measurements. The phases all show values of electrical conductivity, ?, of about 10-4 ?-1 cm-1 at 303 K and photoconductive effect. The conductivity is nearly five orders of magnitude larger than that of related phases.