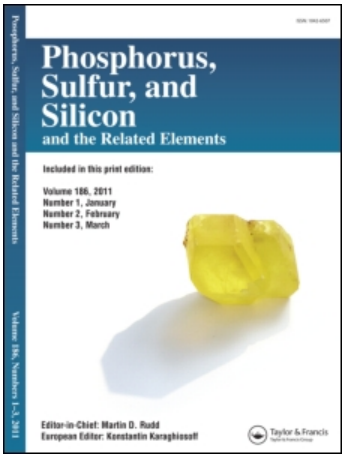

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Reversible Transition of Polyphosphate Glasses of Some Bivalent Metals to Tetrametaphosphates

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Reversible Transition of Polyphosphate Glasses of Some Bivalent Metals to Tetrametaphosphates

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Conditions and reversibility have been determined of the transition of amorphous polyphosphate glasses Fe^{II}, Cu^{II}, Ba^{II}, Sr^{II} to crystalline tetrametaphosphates. This recrystallization process was followed by the methods of thermal analysis (DTA, TG, DSC, TMA) in an inert atmosphere and in air. The temperatures of penetration and recrystallization, and values of activation energies and heat of the phase transformation have been estimated. Yield of the process has been determined by methods of instrumental analysis and by the extraction methods developed in our laboratory. The process is markedly affected by the atmosphere. Lattice parameters of the tetrametaphosphates obtained by the recrystallization have been determined and compared with those of the products synthetized by the classical thermal procedure (ref. 1). On the basis of the recrystallization of polyphosphate glasses, we have suggested procedures of effective introduction of admixtures into the tetrametaphosphate structure (ref.2). They are used, inter alia e.g. for preparation of a luminophore (ref. 3) which exhibits an intensive emission of blue and yellow radiation and can be applied in construction of fluorescent lamps.

1) Bagieu-Beucher M., Condrand M., Perroux M.: J.Solid.State Chem. 19 (1976) 353.
2) Trojan M.: Czech.Patent Application 5934-85.
3) Trojan M., Kaplanová M.: Czech.Patent Application 6336-85.