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Comparative study of the synthesis of KReO4 using acrylamide

sol–gel and solid-state reaction methods

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Abstract KReO4 was synthesized by solid-state reaction

and for the first time by sol–gel method via acrylamide

polymerization. X-ray diffraction analysis showed that a

single phase of KReO4 was obtained by both methods at

500–505 \_C having a tetragonal unit cell. The solid-state

reaction samples had a grain size of 5 lm and the sol–gel

samples had fibrous aspect, agglomerated between 10 and

100 lm. By TEM it was observed nanocrystals of 100 nm,

it is suggested that the xerogel fibers are formed by

nanocrystals. From the results obtained, we concluded that

the morphology is strongly influenced by the method of

synthesis used.