

Fabrication and investigation of Arsenic containing complex compounds and some superconductivity materials

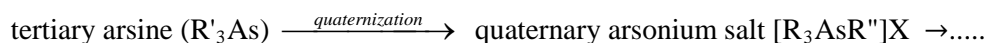
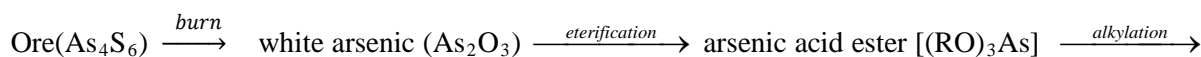
Tea lobzhanidze^a, I.R. Metskhvarishvili^b, G.N. Dgebuadze^b, B.G. Bendeliani^b

tea.lobzhanidze@tsu.ge

^aDepartment of Chemistry, Faculty of Exact and Natural Sciences, Iv. Javakishvili Tbilisi State University, Chavchavadze Ave. 3, 0179 Tbilisi, Georgia

^bDepartment of Cryogenic Technique and Technologies, I.Vekua Sukhumi Institute of Physics and Technology, Mindeli str. 7, 0186 Tbilisi, Georgia

Currently, in the territory of Georgia, particularly in Racha and Svaneti regions are rich of arsenic.



On the basis of the research new type of biologically active complexes with polyfunctional low toxic and high effective insecticidal, bactericidal, antimycotic, mycosis and dermamycois properties will be obtained. They could be used for protection of agricultural crops against microorganisms such as Aspergillus, Penicillium, Cladosporium, Candida, Fusarium and so on). In addition, synthesized materials could have wide application in medicine and veterinary. ▲

As it is known, the existence of multipurpose compounds is one of necessary conditions of using a preparation in homeopathy. Arsenic-containing multipurpose compounds are the very subject of our research.

In the most of the leading research centers and industrial producer of superconducting materials and devices in all of the world are carrying out investigations to discovery not only the new superconducting materials, also to improve parameters of existing ones, such as receiving of hightemperature phase with high impurity, promote the formation of the superconducting phase, increasing of the critical temperature, increasing of the pinning centers and critical current density.

Motivated by the above-mentioned by the solid state reaction method was synthesized nominally pure and Antimony-doped $\text{Bi}_{1.7}\text{Pb}_{0.3}\text{Ca}_2\text{Sr}_2\text{Cu}_3\text{Sb}_x\text{O}_y$ samples the deferments concentration of dopants: $x=0.00$; $x=0.04$; $x=0.08$; $x=0.10$; $x=0.12$; $x=0.16$.

Our investigations have shown that the Antimony-doping promotes the formation of T_c -2223 high temperature phase.

References:

1. Tea lobzhanidze, CHEMISTRY & CHEMICAL TECHNOLOGY, 6 (2012) 371.
2. Tea lobzhanidze, **POLYCHAR 20 - World Forum on Advanced Materials**, March 26-30, 2012, Dubrovnik, Croatia, Book of Abstracts.
3. I.R. Metskhvarishvili, G.N. Dgebuadze, T.E. Lobzhanidze, B.G. Bendeliani, M.R. Metskhvarishvili, G.N. Mumladze, **Journal of Low Temperature Physics**, DOI 10.1007/s10909-012-0686-4, Online first (2012).
4. I.R. Metskhvarishvili, G.N. Dgebuadze, T.E. Lobzhanidze, M.R. Metskhvarishvili, B.G. Bendeliani and G.N. Mumladze, **2012 Applied Superconductivity Conference (ASC 2012)**, Portland, Oregon, USA, October 7-12, 2012, Conference Program Book p. 256, 2MPA-09.