

Superconductivity Research in Bulgaria

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***Abstract* - History and present status of Bulgarian research in superconductivity are outlined. Present problems and societal issues affecting Bulgarian science in general are briefly discussed, and an approach to improving the situation proposed. This short review intends to emphasize the importance of fruitful participation of Bulgarian research teams in joint European scientific programs within the 7th Framework Program of the European Commission.**

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I. History

The beginning of superconductivity research in Bulgaria goes back to 1950s and 1960s when the Bulgarian physics was closely cooperating with others within the “Soviet block” of “socialist” countries (Soviet Union, Poland, Czechoslovakia, Eastern Germany, *etc.*). A number of students graduated in physics at distinguished foreign universities, mostly in Russia and Ukraine, but also in Poland, Eastern Germany, and Czechoslovakia, where physics was (and still is) much more developed. Other young physicists made post-graduate stints in the same countries, while many of the elder scientists passed through specialization courses or some work visits there (one, two and more years). Some of these physicists, theorist and experimentalists, took part in the development of Bulgarian research in fundamental and applied superconductivity and related topics. They maintained close contact and received ideas, and also technical aid, from their scientific advisers abroad through the relatively well established paths of scientific communications (annual short- and long-term visits, correspondence, conferences, common research projects, *etc.*). Here I must mention the exceptionally intensive cooperation with the Joint Institute of Nuclear Research in Dubna, Russia, the International Laboratory for High Magnetic Fields and Low Temperatures and the Institute for Structural Research and Low Temperature in Wroclaw, Poland, the quite intensive cooperation with Moscow State University, The Physical Institute of RAS (FIAN, Moscow), P. Kapitza Institute (Moscow), L. D. Landau Institute (Moscow), Ioffe Institute (St. Petersburg), and other. Very often, the international cooperation in superconductivity was connected with other topics of condensed matter physics such as, for example, superfluidity problems, low-temperature techniques, magnetism.

Nearly to the end of 1980s, the modest success of our superconductivity science was ensured mainly by the supply of research ideas and experimental facilities from abroad. The equipment for research in low temperatures and high magnetic fields in Bulgaria was rather poor; also by now it is

