



Софийски университет „Св. Климент Охридски“  
Физически факултет

## ФАКУЛТЕТЕН СЕМИНАР

сряда, 15 октомври 2014 г., 16:15 часа, зала А315

**Prof. Andrey A. Varlamov**

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### *Superconductivity:*

### *The Century of Discoveries, Dreams, and Delusions*

The historical and epistemological analysis of the phenomenon of superconductivity, one of the most brilliant discoveries of XX-s century in Physics, is presented in the lecture. Starting from the historical prerequisites of this discovery the author discusses the difficulties in its studies, related to the necessity of recognition of the quantum and collective nature of this phenomenon, which delayed its microscopic understanding for long 46 years. Considerable part of the talk is devoted to the events of the last 25 years, pasted since the discovery of high temperature superconductors (HTS). This breakthrough seemed to conclude the 75 years long quest for superconductors with high critical parameters. Nevertheless, the enormous experimental progress in discoveries of new HTS materials, the accumulation of the extensive information concerning their nontrivial physical properties, still has not been supported by the development of the unique reliable theory of this phenomenon.