Sr$_x$Bi$_2$Se$_3$-nematicity, superconductivity, crystals and thin films

Aleksander Yu. Kuntsevich
P. N. Lebedev Physical Institute, Moscow, Russia

3D topological insulator Bi$_2$Se$_3$ attracts much attention as a platform for future low consumption spintronics and quantum computations. Recently, nematic (and possibly topological) superconductivity was discovered in $A_x$Bi$_2$Se$_3$, where $A$ = Cu, Sr, Nb. In my talk I will discuss phenomenology of the nematicity, observed in Sr$_x$Bi$_2$Se$_3$ single crystals in both superconducting and normal states. I will also review our efforts on molecular beam epitaxy growth of both parent compound Bi$_2$Se$_3$ and Sr-doped Bi$_2$Se$_3$ thin films. The latter appear to be non-superconducting because Sr atoms in the films get different positions than in the crystals. Our results call for novel growth approaches for design of superconducting Sr$_x$Bi$_2$Se$_3$ thin films.

The lecture will be held in English.
Cordially invited to attend.