SIBERIAN CIRCULAR SOURCE OF PHOTONS – MODERN "GREEN" SYNCHROTRON RADIATION SOURCE IN GREEN SIBERIA

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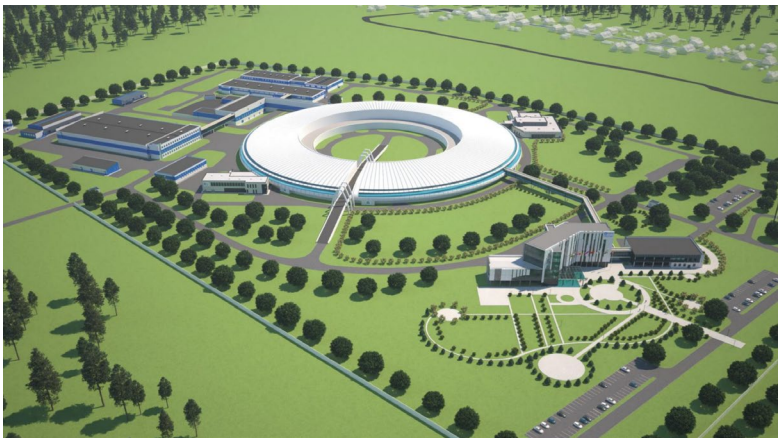
Budker Institute of Nuclear Physics of Siberian Branch of Russian Academy of Sciences, which is creating the accelerator complex, participates in the implementation of the project on the basic of Boreskov Institute of Catalysis. The accelerator complex consists of Linac (up to 200 MeV), booster synchrotron (up to 3 GeV), booster-storage transport channel (200 meters), Storage Ring (3 GeV) with wigglers and undulators.



The Siberian circular source of photons (SKIF) is creating as a synchrotron radiation source with improved parameters (energy - 3 GeV, storage perimeter - 476 meters, emittance - 75 pm.mrad, current - 400 mA) in Siberia, near Novosibirsk city.

SKIF will have six SR- stations (the first phase) with subsequent development – up to 30 stations. Some of the stations are remote due to the peculiarities of the experiments conducted at stations. Therefore, in the first phase there are such stations as "fast-flowing processes" (15-100 keV and) "diagnostics in the high energy range (25-200 keV). In addition, the first stations will include: "microfocus" (5-47 keV), "structural diagnostics" (5-40 keV), "XAFS spectroscopy and magnetic dichroism" (2.5-35 keV), "electronic structure" (0.01-2 keV).

A special place in the research will take by the virological station. Next to «SKIF» there is State Research Center of Virology and Biotechnology "VECTOR ", which will investigate viruses and other objects in order to create antiviral drugs, including anti-COVID-2019 drugs and vaccines.

The center for collective use of the «SKIF" is located on a plot of land with an area of almost 30 hectares in the "center" of Russia. As part of the "SKIF": main buildings (injector, storage, remote stations) and auxiliary buildings (power corps, engineering support, laboratory). It is planned to carry out assembly and commissioning work on the equipment of the Storage Ring and SR-stations in the building of the stands. Besides, there is the center for work with nonresident/foreign researchers in the Administrative Building.

The power supply capacity will be 12.5 MW when the Center will reach full power (30 SR- stations). The main requirements for the Center's infrastructure that ensure reliable operation in the project parameters of the Center are in the tables:

Area	Air Temperature Stability
Storage Ring tunnel	± 0,1 ^{0}C (1 hour)
Experimental Hall	± 1 ^{0}C
Booster – SR transfer line	± 1 ^{0}C
Booster tunnel	± 1 ^{0}C
Linac	± 1 ^{0}C

Equipments in Areas	Water Temperature Stability
Storage Ring tunnel	± 0,1 ^{0}C
Experimental Hall	± 1 ^{0}C
Booster – SR transfer line	± 1 ^{0}C
Booster tunnel	± 1 ^{0}C
Linac	± 1 ^{0}C

To create comfortable working and living conditions for researchers, visitors and locals, a town with its own unique infrastructure (SKIF-City) is creating.

It is supposed to provide transport accessibility for visiting researchers by creating additional roads and forming a wide network of highways and trails.

After the modernization of transport networks, the travel time to the airport will not exceed 30-40 minutes.

In addition to research groups from research centers, active work is underway to attract specialists from industry.

In cooperation of leading Siberian universities, a lot of work is being done to train personnel. Specialized seminars and conferences are being organized by schools of young scientists.