

Molecular Spectroscopy

The Center for Collective Usage (CCU) 'Molecular Spectroscopy' of the Federal State Autonomous Educational Institution 'Southern Federal University' was established by the Order of the Southern Federal University N P73-01 OD dated 22.04.2010 at the premises of the SFedU Research-Scientific Institute of Physical and Organic Chemistry (office 112, 194/2, Stachki av., Rostov-on-Don).

The CCU 'Molecular Spectroscopy' has the modern equipment for scientific research in chemistry:

- Nuclear magnetic resonance spectrometers (NMR);
- Electron spin resonance spectrometer (ESR);
- Infrared (IR) and ultraviolet (UV) absorption spectrum spectrometers;
- High-performance cluster.

The center provides the shared access to the scientific equipment and performs services for the faculties of the Southern Federal University, other institutes and organizations of the Southern Federal District, Russian Federation and foreign centers for science and education (on a contractual basis).

The Center's director: Candidate of Chemical Sciences Borodkin G. S. (nmr@ipoc.sfedu.ru).

Goals and objectives of the CCU:

- development of scientific, innovative and business activity in the field of molecular spectroscopy on the basis of combination and collective use of unique, expensive devices and equipment;
- up-to-date support of research and provision of services using the scientific equipment;
- ensuring the unity and veracity of measurements while using the CCU equipment;
- participation in training of specialists (students, postgraduates) and highly qualified personnel (doctoral students) based on the modern scientific equipment;
- CCU development.

Scientific activity

Provision of equipment for:

- Interdisciplinary educational programs 'Medical chemistry', 'Supercritical fluid technology', 'Organic chemosensors', 'Modern problems of chemistry';
- Grants for project and basic parts of the Government orders of the Ministry of Education and Science of the Russian Federation;
- RFBR initiative grants;
- Basic and applied research conducted in the research institutes and universities of the Southern Federal District (Rostov-on-Don, Krasnodar, Stavropol, North Caucasus republics).

The study of the environmental objects and newly synthesized compounds through the NMR, ESR, IR and UV spectroscopy methods.

The students of the chemistry and physics faculties work on their graduation papers using the CCU equipment.

The students and young scientists are trained how to efficiently use the computer resources and computational analysis procedure using modern licensing packages Gaussian 09 / 03, Gamess.