RUDN university

FACULTY OF SCIENCE

FRAGRANCES, FINE AND APPLIED ORGANIC CHEMISTRY

(jointly with the University of the Cote d'Azur, Nice)

MASTER'S DEGREE PROGRAMME

PROGRAM ADVANTAGES

- The program is designed to provide the required skills for successful work in the current scientific environment, to form the general cultural and professional competencies necessary for chemists professional activity in the research areas, including pharmaceutical products, in the field of chemical toxicological studies, as well as in the field of optimization and development of technologies, methods and techniques for obtaining and analyzing new materials and substances.
- The training is carried out by the leading representatives of the Faculty of the Organic chemistry departments at RUDN University and the University of Cote d'Azur (Nice, France).
- The Master's program provides students with an opportunity to get two diplomas (RUDN and Cote d'Azure University) simultaneously! The language of study are Russian (at RUDN) and English(in France).
- The leading research centers of Russia and the University of Cote d'Azur (Nice, France) are the bases for conducting research practices and performing some parts of students scientific research as part of their graduate qualification works.
- Lectures and master classes given by famous world-class scientists are held regularly. There is also an opportunity to be engaged in joint creative projects and participate in conferences.

STUDYING PROCCESS

120 credits
Lectures, laboratory classes and self-study, several types of practice, research work.

DOMINO REACTIONS IN THE SYNTHESIS OF HETEROCYCLES

- Classification of domino reactions.
- Anionic domino reactions.
- Cationic dominoes – reactions.
- Radical domino reactions.
- Multicomponent domino reactions.
- Domino Reactions based on Kneuvenagel condensation.
- Knoeungel condensation – cycloaddition.
- Kneveengel condensation – Michael Joining.

NMR OF ORGANIC COMPOUNDS

- Introduction and theoretical foundations of the NMR method.
- The structure of the NMR spectrometer.
- Parameters of 1H and 13C NMR spectra.
- NMR features of various classes of organic compounds.
- Trial program.
- Decoding 1H spectra of unknown compounds.
- Deciphering 13C spectra of unknown compounds.
- Deciphering the spectra of unknown compounds from the totality of NMR data.

MOLECULAR SPECTRAL ANALYSIS

- Principles of molecular spectral analysis.
- Principles of IR spectroscopy.
- Principles of quantitative IR spectroscopy.
- Practical aspects of measuring IR spectra.
- IR spectroscopy of organic compounds.
- Principles of UV spectroscopy.

EXPERIMENTAL RESEARCH METHODS IN ORGANIC CHEMISTRY

- The basics of work safety in a chemical laboratory.
- The current state of research in this field of science, the comparison of the expected results with the ones of the world level.
- Chemical experimenst.
- Methods for the synthesis of organic substances.
- Analysis and generalization of the results.

THE SECOND YEAR OF STUDY AT THE PARTNER UNIVERSITY OF COTE D'AZUR (FRANCE)

Bibliography : from strategy to applications // Research Communication
Bibliography : from strategy to applications // Bibliography
Bibliography : from strategy to applications // Industrial aspects & applications
Organic Chemistry I // Synthetic methodologies I
Organic Chemistry I // Synthetic methodologies II
Organic Chemistry I // Synthetic methodologies III
Organic Chemistry II // Total syntheses I
Organic Chemistry II // Green Chemistry
Fragrance Chemistry // Olfaction Sciences & Chemical communication
Fragrance Chemistry // Encapsulation techniques
Fragrance Chemistry // Natural and synthetic fragrant raw materials
Analytical Chemistry // Applied Structural analysis
Analytical Chemistry // Analytical methods I
Analytical Chemistry // Analytical methods II
Organic Chemistry II // Total syntheses II

HEAD OF THE PROGRAMME

LEONID G. VOSKRESSENSKY

Doctor of Chemical Sciences, Professor,
Professor of RAS, Faculty of Sciences Dean,
Organic Chemistry Department Head.

Areas of scientific interest:
new methods for the synthesis of heterocyclic compounds, medical chemistry, nuclear magnetic resonance spectroscopy, green chemistry, multi-component reactions, new domino reactions, organic synthesis and methodology.

- Author of more than 110 scientific articles in peer-reviewed Russian and foreign scientific journals (VAK, SCOPUS, Web of Science) and regularly gives reports at international conferences on the chemistry of heterocyclic compounds.

- Professor L.G. Voskressensky is a repited recipient of grants of Russian and foreign scientific funds for research and organization of scientific events.

- Professor L.G. Voskressensky is Deputy editor-in-chief of the journal “Chemistry of heterocyclic compounds”; a member of the editorial board of foreign journals: JOC, EuJOC, Organic Letters, Tetrahedron, Tetrahedron letter; a member of two specialized councils for the defense of candidate and doctoral theses.

- Professor L.G. Voskressensky was awarded the Gold Badge “Laureate” for his art in organic synthesis of heterocycles, established by the International Charitable Foundation “Scientific Partnership” and the International Foundation “Cultural Heritage”