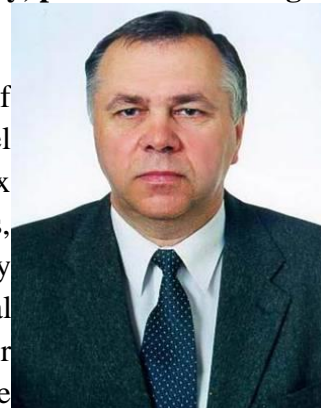


**Scientific and Pedagogic School "Physical chemistry of composite multi-layer thin-film systems on the basis of polymer and non-organic (metallic, carbon, metal and nitride carbides) materials, plasma-chemical synthesis and deposition of micro- and nanocomposite coatings from active gas phase" under the supervision of Doctor of Chemistry, professor A.V. Rogachev**

The School was founded in Belarusian State University of Transport in 1980 and was further developed in Francisk Skorina Gomel State University. Within the framework of its activities complex researches of processes of vacuum metallization of polymer materials, properties of composite materials, polymers dispersion effected by electron stream and laser radiation were conducted. Principles of metal atom adsorption, organic molecules, initiating of condensed (polymer and non-organic) phases on surface of solid body from gas phase were determined. Methods of regulation of physical and mechanical properties of nano- and micro heterogeneous systems based on the usage of plasmic activation of volatile products, gas transmission plasma chemical processes on the nanoparticles deposition stage from gas phase of complicated structure were developed. Numerous activities dedicated to structure investigation, sized effects of physical and chemical properties of polymer, diamond-like, composite coatings deposited from active gas phase were fulfilled. Basic principles of heterogeneous thin-film systems synthesis with set optical, protecting, mechanic properties were developed. Relaxation diffusion theory of cross-phase processes which contributes to the developing new scientific direction in the sphere of physical chemistry of heterogeneous systems was developed. Referring to the basic principles of this theory, analytical description of structural peculiarities of boundary layers, principles of adhesion interaction under the conditions of static and dynamic contact under different modes and conditions, as well as under chemical contact reactions behavior was presented. A range of experimentally deduced effects, including effect of condensation breakdown under the temperature of polymer surface (close to the temperature of glass-transition), effect of transition of template adsorption activity by thin films, selectivity of nucleation in the process of creation of mechanical stress in surface layer were explained within the framework of this theory. Physical and chemical principles were developed, principle directions of development of technological processes of plasma chemical materials modification, modification of rubber technical items, polymer coatings deposition on the surface of fiber-tissue materials, optimal modes and conditions of realization of main stages were defined. The research results are used on the enterprises of Belarusian railway, research and manufacturing association "Integral", etc. A whole range of applied activities customized by China, Germany, Russia was carried out.



Address and contact person for data exchange: Rogachev A.V., 246050, Gomel, Sovetskaya Str., 104. Telephone number with the city code: (8-0232) 60-73-71 Fax with the city code: (8-0232) 57-81-11 E-mail: [Rogachyev@gsu.by](mailto:Rogachyev@gsu.by)

**Scientific School: «Algebraic systems classes with the finiteness conditions» under the supervision of professor Skiba A.N. and professor Monahov V.S.**

Principle research directions:

- investigations of subsystems of algebraic systems, symmetry studies (automorphism);
- search for correlations between systems structural properties and class systems;
- study of operations by means of algebraic system classes (such as groups, multicircles, lattices, universal algebras);
- determination of system class properties with other branches of mathematics.

Founded in 1969. S.A. Chunihin, academician of Academy of Sciences of BSSR, Doctor of Physical and Mathematical Sciences, professor, honored scientist of BSSR is the founder of Gomel algebraic school.

Graduates of the School succeeded in Belarus, as well as in Russia, Ukraine, Kazakhstan, China, Jordan. School is in close cooperation with Institute of Mathematics of National Academy of Sciences of Belarus, Institute of Mathematics of SB RAS, as well as other research institutions of far-abroad countries. The presence of post-graduate and doctorate study programmes, as well as Doctoral Council on the speciality “Mathematical logics, algebra and theory of numbers” serves as a recognition of scientific contribution of the School.

Address and the contact person for data exchange: Skiba A.N., Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (0232) 573791 Fax with the city code: (0232) 578111 E-mail: [skiba@gsu.by](mailto:skiba@gsu.by)



**Scientific and Pedagogic School "Optics and acoustics of crystals, photonics, quantum electronics" under the supervision of Correspondent member of National Academy of Sciences of Belarus Serduykov A. N.**

Principle research directions:

- electrodynamics and acoustics of bianisotropic, magnetic-ordering and non-linear media;
- optics of light beams;
- molecular spectroscopy and photonics of d- and f-element compounds;
- laser techniques and technology of material treatment;
- optics material science, development and creation of optical and optoelectronic devices and systems.



Founded in 1974. Founder – B.V. Bokut, Doctor of Physical and Mathematical Sciences, professor, academician of Academy of Sciences of BSSR, honored scientist of BSSR, Prize winner of State award of USSR. At present the main direction of the School is supervised by one of his apprentice Correspondent member of National Academy of Sciences of Belarus Serduykov A.N. The School has established close cooperation with Institute of molecular and atomic physics of National Academy of Sciences of Belarus, Institute of Physics named after Stepanov, Institute of Electronics, Institute of Mechanics of Metal and Polymer Systems named after V.A.Belyj. Post-graduate study programmes are available. There is also the Council on the thesis defense on the speciality “Optics”.

Address and contact person for data exchange: Serduykov A. N., Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Tel: (8-0232) 57-479-97 Fax (8-0232) 57-65-57 E-mail [anserdyukow@gsy.by](mailto:anserdyukow@gsy.by)

**Scientific and Pedagogic School "Theoretical Physics" under the supervision of Doctor of Physics and Mathematics, professor Maksimenko N.V.**

Principle research directions:



- physics of elementary particles;
- quantum field theory;
- analytical calculations in the physics of high energies;
- modeling of processes of interaction of elementary particles.

The School has been established since 1962 by efforts of Candidate of Physical and Mathematical Sciences, associate professor Simonov V.G., then since 1974 – by academician Bokut B.V. At present the School is supervised by Doctor of Physics and Mathematics Sciences, professor Maksimenko N.V. The School has established cooperation with some Gomel universities (Gomel State Technical University named after Sukhoj), Institute of physics of National Academy of Sciences of Belarus, etc., with Joint Institute of Nuclear Researches (Dubna).

Address and contact person for data exchange: Maksimenko N.V., Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (80232) 57 82 53 E-mail: [maks@gsu.by](mailto:maks@gsu.by)

**Scientific and Pedagogic School "Economic theories and methodology of economic Science" under the supervision of Doctor of Economics, professor Sorvirov B.V.**

Principle research directions:

- development of economic theory in 20<sup>th</sup> century (evolution of methodology, principle directions and schools, its concepts and doctrines);

- conceptual approaches to the study of transformational processes in social and economic systems, formation of institutional structures.

The school started to develop in the 70s due to efforts of Doctor of Economics, professor Nauchitel M.V. At present the school is supervised by Doctor of Economics, professor Sorvirov B.V. The School of economists-theoretics is recognized in Belarus and abroad. The School has established cooperation with the universities of Germany and England, Institute of Economics of National Academy of Sciences of Belarus, Belarusian universities (such as Belarusian State University, Belarusian State Economic University, Belarusian State University of Transport, etc.), as well as with Russian and Ukraine universities and scientific organizations. Post-graduate study programmes are available.

Address and contact person for data exchange: Sorvirov B.V, 246019 Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (8-0232) 57-16-35, 57-30-19 Fax with the city code: (8-0232) 57-81-11 E-mail: [sorvirov@gsu.by](mailto:sorvirov@gsu.by)



**Scientific and Pedagogic School "Physical and chemical mechanics of adhesion polymer-metal compounds and methods of material surface treatment" under the supervision of Doctor of Techniques, professor Lin D.G.**

Principle research directions:

- study of physical and chemical transformations in boundary polymer layers (contact oxidation, creation and transmission of metal-containing compounds, destruction and macromolecular structuring, vulcanization of rubber substances, etc.) and metals (oxidation reactions, transmission of metals in the polymer space including selective transfer of allegation components, etc.) which are in adhesion contact;

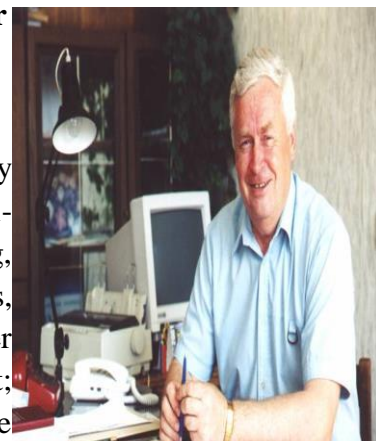
- desactivation of catalytic activity of metal and its compounds on the polymer oxidation in the zone of adhesion contact;

- study and development of methods of regulation of adhesion solidity of polymer-metal compounds in composite materials;

- physical and chemical aspects of creation of new types of composite metal and polymer materials;

- study of dislocation structure with dynamic (frictional) adhesion contact of metal and polymer contact.

The School was founded in 1981 in Scientific research laboratory under the supervision of head of the laboratory, Doctor of Chemistry Egorenkov N.I. In 1985 the school center was transferred to the Department of General Physics. Since 1985 and up to this moment Doctor of Techniques, professor Lin D.G. has been the supervisor of the School. The School has established cooperation with Institute of Mechanics of Metal and Polymer Systems named after V.A. Belyj, National Academy of Sciences of Belarus, Institute of biochemical physics named after N.M. Emanuel (Moscow), Joint Stock Company "Infrared and microwave systems" on the basis of Moscow Institute of general physics. Post-graduate study programmes are available.



**Scientific and Pedagogic School "Scholastic processes and networks" under the supervision of Doctor of Physics and Mathematics, professor Malinkovskij Y.V.**

Principle research directions:

- search of conditions (crucial, sufficient, sufficient and crucial) of ergodic of multidimensional Markov processes;

- search of invariant probability measure of multidimensional Markov processes and construction of algorithms of its search;

- study of conditions which determine invariant stationary distribution of networking Markov processes towards the distribution of application service durability in the networks of mass service;

- search of conditions (crucial, sufficient, sufficient and crucial) in the terms of isolated nodes in artificial random medium so that stationary distribution of networks conditions had multiplicative formulae;

- study of invariant measure of multidimensional Markov processes in which infinitesimal operator depends on the state of these processes in a free manner.

The School was founded in the 90s. The founder and its supervisor is Doctor of Physics and Mathematics, professor Malinkovskij Y.V. The School has established cooperation with Belarusian State University, Belarusian State University of Transport, Institute of Mathematics of National Academy of Sciences of Belarus, Uliyanovsk State University (Russia). Post-graduate study programmes are available.

Address and contact person for data exchange: Malinkovskij Y.V., 246050, Gomel, pr. Lenin Avenue, 18, department 22. Telephone number with the city code: (8-0232) 53-72-07 Fax with the city code: (8-0232) 57-81-11 E-mail: [malinkovsky@gsu.by](mailto:malinkovsky@gsu.by)





**Scientific and Pedagogic School "Belarusian linguistics" under the supervision of Doctor of Philology, professor Stankevich A. A.**

Principle research directions:

- principles of historical development of Belarusian language: study of peculiarities of Old-Belarusian ancient manuscripts and lexicographical publications; study of formation, development and functioning of scientific terminology; study of borrowed vocabulary of Belarusian language;

- peculiarities of formation and functioning of lexical system of Belarusian dialects: study of different thematic groups of appellative and onomastic dialects, study of its lexical and semantic processes – homonymy, polysemy, synonymy and variations;

- linguistic and stylistic study of literary and publicistic styles, oral folk verses: study of linguistic peculiarities of poetic genres of literature, study of linguistic pragmatic of publicistic style, description of folk language peculiarities.

The School was developed in the 70s due to the efforts of Doctor of Philology, professor Anichenko V.V. At present Doctor of Philology, professor Stankevich A.A. is the supervisor of the School (since 1991 – Head of the Department of Belarusian language, since 2001 – Chairperson of the Council K.02.12.03 on the thesis defense, since 2002 – director of the Scientific Research Institute of History and Culture of Eastern Slavic peoples on the basis of Francisk Skorina Gomel State University). The School has established cooperation with Institute of Literature studies of National Academy of Sciences of Belarus, Minsk, Vitebsk, Mogilev, Mozyr Universities, etc. Post-graduate and doctoral study programmes are available.

Address and contact person for data exchange: Stankevich A.A., 246019 Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (0232) 56-22-65; 44-92-63 Fax with the city code: (0232) 57-81-11 E-mail: [belchair@gsu.by](mailto:belchair@gsu.by)





**Scientific and Pedagogic School "Literature and cultural heritage of Belarusian people in the global context" under the supervision of Doctor of Philology, professor Shtejner I.F.**

Principle research directions:

- cultural (literary and folklore) heritage of Belarusian Polesye;
- poetry of Polesye;
- genre systems in the "Polesye stream" in Belarusian prose, drama and lyrics: regional, national, Eastern European, general European cultural contexts;
- genre as the character system of esthetic tradition in national and European cultural and literary experience;
- revealing of connection between anthology depth of 20<sup>th</sup> century art of oratory and strengthen of genre interaction in European writing;
- literary conventionality in "Polesye stream" of the 20<sup>th</sup> century Belarusian literature;
- problems of poetics in modern Belarusian historical prose.

Traditions of study of Gomel region cultural heritage appeared in Gomel pedagogic institute named after Chkalov V.P. the arrival of Doctor of Philology, professor Grinchik N.M. to Gomel initiated the actual formation of the School. At present Doctor of Philology, professor Shtejner I.F. is the supervisor of the School. The School has established cooperation with Belarusian State University, Brest State University, Mozyr State Pedagogic University, Institute of Literature named after Y. Kupala of National Academy of Sciences of Belarus, Institute of Arts studies, Ethnography and Folklore named after K. Krapiva of National Academy of Sciences of Belarus. Post-graduate study programmes are available.

Address and contact person for data exchange: Shtejner I.F., Francisk Skorina Gomel State University, Sovetskaya Str., 108, office 2-18, Gomel, 246019 Telephone number with the city code: (0232) 60-32-40 Fax with the city code: (0232) 57-81-11 E-mail: [shtejner@gsu.by](mailto:shtejner@gsu.by) ; [mail@gsu.by](mailto:mail@gsu.by)



**Scientific and Pedagogic School "Russian, Belarusian and Slavic lexicology" under the supervision of Doctor of Philology, professor Koval V.I.**

Principle research directions:

- study of lexical and phraseological vocabulary of Russian, Belarusian and other Slavic Languages in synchronic, diachronic and ethnocultural aspects;
- study of Russian, Belarusian and Slavic onomatology;
- linguistic and ethnolinguistic study of literary and publicistic texts.

Founded in the 90s due to the efforts of its supervisor, Doctor of Philology, professor Koval V.I. The School has established cooperation with Belarusian State University, Institute of Linguistic Studies of National Academy of Sciences of Belarus. Post-graduate study programmes are available.

Address and contact person for data exchange: Koval V.I., Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (8-0232) 60-32-33 Fax with the city code: (8-0232) 57-81-11 E-mail: [russchair@gsu.by](mailto:russchair@gsu.by)



**Scientific and Pedagogic School "Problems of ethic upbringing of secondary school pupils"  
under the supervision of Doctor of Pedagogics Kadol F.V.**

Principle research directions:

- intensive reveal of scientific principles of ethic upbringing in the system of pupils` personal development;
- improvement of process of pupils` ethic upbringing in the system of organization of pedagogic practice of students;
- creation of monographic writings and development of methodological textbooks on the considering issues for the training of future teachers.

Doctor of Pedagogics, professor, honored scientist of BSSR, Academician of National Academy of Sciences of Belarus, Founder of the School Основоположник научной школы - доктор педагогических наук, профессор, заслуженный деятель науки БССР, Академик НАН Беларуси, Prize winner of State award of Belarus Kharlanov I.F. is the founder of the School. Then Doctor of Pedagogics Kadol F.V. became the supervisor. The School has established cooperation with Belarusian State University (participation in the attestation of academician staff, in the council on the thesis defense), Belarusian State Pedagogic University named after M. Tank, Grodna State University, Institute of Education of Republic of Belarus, Mozyr State Pedagogic University, etc.

Address and contact person for data exchange: Kadol F.V., Francisk Skorina Gomel State University, Sovetskaya Str., 104, Gomel, 246019 Telephone number with the city code: (0232) 60-73-71 Fax with the city code: (0232) 57-81-11 E-mail: [mail@gsu.by](mailto:mail@gsu.by)