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THE APPLIED SCIENTIFIC RESEARCHES DIRECTION
"COGNITIVE MODELING IN THE NATURAL SCIENCES" ("NEN")
OF "SIO "ACADEMY OF COGNITIVE NATURAL SCIENCES"" (PART 3)

The developed "The applied scientific researches direction "Cognitive modeling in the natural sciences"" ("NEN") treats to the applied scientific researches divisions of "SIO "Academy of cognitive natural sciences"" ("SIO "ACNS"") as the main component of the system of science and education of the modern country for the creation, distribution and use of the main and derivative scientific results of the cognitive modeling technology (CMT) (www.vetrovan.(spb.)ru) [see the applied scientific researches directions and departments of "SIO "ACNS""]: 1) it is executed by the principle of "administrative-economy submission"; 2) works in the several main directions, which allow to provide the development of the applied main and derivative scientific results (my second report on SRW from 2006-2008(9) y. was submitted to "SPbSETU "LETI"" and "The Government of RF" for the translation, carrying out of int. action and receiving of "The Nobel prize"); 3) includes the several various main divisions: V. "The applied scientific researches department "Applications of the models, methods and technologies of geology of oil and gas and the oil and gas industry"" ("SNG") [the applied scientific researches in the area "Applications of geology of oil and gas" – usage of theory of lithology, usage of theory of tectonics, usage of theory of geological-geo-physical researches of the deep structure of The Earth, usage of theory of regional geology of deposits, usage of theory of planetology, usage of theory of stratigraphy, usage of theory of paleontology, usage of theory of geo-chemistry, usage of theory of mineralogy, usage of theory of petrography, usage of theory of experimental and technical mineralogy and petrography of oil, natural and passing gas, usage of theory of the methods of laboratory of mineral-petrographical and geo-chemical researches, usage of theory of anthropogenic period, usage theory of neo-technics, usage of theory of geo-morphology, usage of theory of geology of the fields of oil, gas and its condensates, usage of theory of the methods of search and investigation of the fields of oil and gas, usage of theory of technics and technology of geological-prospecting works, usage of theory of hydro-geology, usage of theory of engineering geology of oil and gas, usage of theory of frozen condition of ground of deposits, usage of theory of the cognitive modeling technology in the applications of geology of oil and gas;

the applied scientific researches in the area "Applications of oil and gas industry" – usage of theory of processes and devices of oil and gas technology, usage of theory of oil and gas raw materials, usage of theory of technology of nonorganic substances and products of oil, natural and passing gas, usage of theory of technology of fertilizers production from oil and gas, usage of theory of technology of production of silicate and refractory nonmetallic materials from oil and gas, usage of theory of industrial organic synthesis, usage of theory of industrial synthesis of organic dyes and pigments from oil and gas, usage of theory of technology of production of photographic materials from oil and gas, usage of theory of technology of protection against explosions and the means of chemical protection of oil and gas technology, usage of theory of technology of production of the chemical-pharmaceutical means from oil, natural and passing gas, usage of theory of technology of production of fragrant substances from oil and gas, usage of theory of technology of production of pesticides and disinfectant substances from oil, natural and passing gas, usage of theory of technology of refining of oil, natural and passing gases and its condensates, its products and analogues, motor fuel and lubricants from oil and gas, usage of theory of technology of production of natural high-molecular compounds from oil, natural and passing gas, usage of theory of technology of production of synthetic high-molecular compounds from oil and gas, usage of theory of technology of production of plastics, rubbers and products from oil, natural and passing gas, usage of theory of technology of production of paint-varnish materials and organic coverings from oil and gas, usage of theory of technology of production of chemical fibers and strings from oil and gas, usage of theory of technology of production of chemical reactants and especially clean substances from oil and gas, usage of theory of technology of production of household chemical goods and auxiliary materials from oil, natural and passing gas, usage of theory of the cognitive modeling technology in the applications of oil and gas industry].

VI. "The applied scientific researches department "Applications of the system analysis based on the cognitive modeling technology, prediction, standardization, unification and complex problems of exact technical sciences"" ("SSAP") (*) [*the applied scientific researches in the area "Applications of the system analysis" (*)* – usage of theory of tendencies, dependences and laws of the system analysis of the objects, processes and phenomena, usage of theory of the cognitive modeling technology with dynamic cloning, verification and subverification, usage of theory of the iterative cycle and the technique of use of the cognitive modeling technology, usage of theory of the parametrical cognitive models block for the system analysis of the information-educational environments and the increase of efficiency of functioning of the automated training system with the properties of adaptation based on the cognitive models (the cognitive models of the subject of training and the means of training), usage of theory of the ways of representation of the structure of the cognitive models and difficult problem environments: the formal classical of the 0th generation (the logical and production models), the nonformal classical of the 0th generation (the semantic network, the frame network and ontology), the formal new of the 0th generation (the calculus of theory of sets and corteges on domains and the innovative calculus of theory of sets and graphs), the nonformal new of the 0th generation (the multi-level structural scheme and the multi-level encapsulated pyramids combining theory of graphs and theory of sets), the flat of the 1st generation (the cognitive circle and the cognitive disc), the volumetric of the 1st generation (the cognitive cylinder, the cognitive cone and the cognitive sphere), the flat and volumetric of the 2nd generation (the one-, two-, three-, four-, five- and more cognitive circle, cognitive disc, cognitive cylinder, cognitive cone and cognitive sphere), the hybrid of the 3rd generation (the combinations of the existing cognitive models), usage of theory of the algorithm of formation of the cognitive model structure, usage of theory of the technique of research of the cognitive model parameters, usage of theory of the algorithm of analysis of a posteriori results of research, usage of theory of the adaptive automation means of the information-educational environment (the basic and applied diagnostic module, the electronic textbook, the laboratory practical work, the electronic dean, the electronic library and others), usage of theory of the technical means of support of the adaptive information interaction (the adaptive representation of sequence of information fragments processor, the question-answers structures sequence processing processor, the linguistic processor and other processors), usage of theory of the statistical substantiation of practical use of the received results, usage of theory of the factors influencing to the efficiency of knowledge formation in the information-educational environment and the increase of resultativity of functioning of the difficult objects, processes and phenomena, usage of theory of organization and plan of carrying out of the experiment for the research of parameters of the parametrical cognitive models block, usage of theory of preliminary processing of a posteriori results of diagnostics, usage of theory of choice of the statistical analysis methods of the generated data sets, usage of theory of the analysis of dynamics of the resultativity of training, usage of theory of the dispersion, regression, discriminant, cluster analysis, multivariate scaling, factor analysis and bibliographic lists; *the applied scientific researches in the area "Applications of standardization"* – usage of theory of systems and services of standardization, usage of theory of scientific-methodological support of systems and services of standardization, usage of theory of the cognitive modeling technology in the applications of standardization].

The applied scientific researches directions and departments of "SIO "ACNS"" allow to develop the main and derivative scientific results of CMT.