



● Directorate

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Nuclear Energy

Laboratories

● Energy Systems Analysis

Energy technologies systems aspects, energy-economy-environment interactions modeling, energy policy analysis, nuclear reactor analysis, nuclear power plants and nuclear installations PSA

D.Sc. Plamen Tzvetanov, ptzvetanov@inrne.bas.bg

● Nuclear Fuel Modelling

Nuclear fuel behaviour, fuel rod material properties, steady state and transient regimes

D.Sc. Dancho Elenkov, elenkov@inrne.bas.bg

Dr. Stefka Boneva, boneva@inrne.bas.bg

● Decommissioning of Nuclear Facilities

Decommissioning, radiological characterisation, nuclear installation

D.Sc. Alexander Lukyanov, lukyanov@inrne.bas.bg

Dr. Ivan Ruskov, ivan@inrne.bas.bg

● Nuclear Fuel Performance Analysis

Nuclear fuel, thermal-mechanical processes, modelling, computer codes, performance analysis, steady-state and transient regimes

Dr. Svetla Stefanova, svs@inrne.bas.bg

Gyuner Passage, passage@inrne.bas.bg

● NPP Safety Analysis

NPP safety, nuclear reactors, thermohydraulic analyses, emergency operating procedures

Dr. Pavlin Groudev, pavlinpg@inrne.bas.bg

Nuclear Methods

Laboratories

● Ion Implantation and Laser Spectroscopy

Ion implantation, laser spectroscopy, laser annealing

D.Sc. Lubomir Pavlov, lpavlov@inrne.bas.bg

● Meusbauer Spectroscopy and Low Activities

Mossbauer spectroscopy, magnetic nanomaterials, nuclear instruments, low activity measurements, nuclear engineering, radioactive contamination in nuclear reactors

D.Sc. Todor Ruskov, ruskov@inrne.bas.bg

Dr. Rusko Hristov, ruskovr@ee.ucr.edu

● Nuclear Electronics

Nuclear instruments, detectors, high voltage power supply, low voltage power supply, neutron moisture meters, low activity radiometers and spectrometers

D.Sc. Ivan Vankov, ivankov@inrne.bas.bg

Dr. Lubomir Dimitrov, ludim@inrne.bas.bg

● Neutron Optics and Structure Analysis

Neutron diffraction, X-ray diffraction, structure analysis, short-range order, phase transitions, shape memory alloys, martensitic transitions

Dr. Stoyko Neov, sneov@inrne.bas.bg

● Solid state neutron research

Structural and magnetic order, nanosize effects, phase transitions and charge ordering phenomena, texture determination by Monte Carlo simulation, gamma irradiation or/and ion implantation, clusters, nanoparticles and chains

Dr. Kiril Krezhov, krezhov@inrne.bas.bg

● X-ray Fluorescent Analysis

XRFA, quantitative and qualitative element analysis, heavy and toxic elements, ecology, monitors - samples, soils, herbal plants, grass, radioisotope devices for technological control

Emilia Nikolova, eminik@inrne.bas.bg

Ari Artinyan, ariart@inrne.bas.bg

Radioecology and Environment

Laboratories

● Radio-chemistry and Radio-pharmacy

Illegal traffic of nuclear materials, radiopharmaceutical products, marine ecology, radionuclides, heavy metals, geological matrix

Dr. Alexander Strezov, strezov@inrne.bas.bg

● Radio - analytical Methods

NPP, calibration standards, iodine releases, iodine monitoring, activation detectors, environment, uranium

Dr. Plamen Nikolov, planniko@inrne.bas.bg

Lidia Kinova, likinova@inrne.bas.bg

Radioactive Waste Repository -

Novi Han

Management of radioactive waste from industry, research and medicine, transport, acceptance, storage, disposal, control and identification, Novi Han Repository site radiation control and monitoring, Novi Han Repository safety assessment, radioactive waste disposal - safety, advanced methods, radioactive waste behaviour, engineered and natural barriers, radionuclides migration in environment, behaviour of radionuclides in aqueous systems

Dr. Milko Milanov,

novi.han@inrne.bas.bg

Dr. Milen Iovtchev,

miovtchev@inrne.bas.bg

Control Laboratory

for Radiation Protection

Thermoluminescence dosimetry, personal dosimetry, neutron dosimetry, radon and radon progeny dosimetry, natural radioactivity, environmental monitoring, radioecology

Metodi Gelev, mgelev@inrne.bas.bg

Basic Environmental Observatory

Moussala

Long range radionuclides, toxic elements and other pollutants transport control, aerosols measurements and spectrometry, hydro - meteorological observing, complex environmental monitoring, global change observing, GIS, cosmic ray physics and astrophysics

D.Sc. Jordan Stamenov, jstamen@inrne.bas.bg

Dr. Ivan Kirov, ikirov@inrne.bas.bg



Information Technologies Division

Installation, administration and maintenance of computer networks and computer systems, provision of network services and Internet access, user support, cluster and GRID computing, web site development.

Dr. Dechko Karadjov,

karadjov@inrne.bas



Nuclear Safety and Radiation Protection Control Department

Dr. Slavcho Ushev, ushev@inrne.bas.bg

European Projects Department

Dr. Boyko Vachev, vachev@inrne.bas.bg

Library

Dr. Alexandra Dumanova, dumanova@inrne.bas.bg

INRNE staff qualification:

1 member of BAS, 22 professors, 59 Assoc. Prof. and 80 Assist. Prof., 25 D.Sc. and 102 Ph.D.

INRNE international relations:

IAEA, UNESCO, CNRS, CNR, NASF, DFG, DAAD, JINR, CERN, RAS, ITU, IRMM, FZJ, FZR, KFZ, IRE, JPSN, CNBG, ORSEY, SACLAY, FERMILAB, INFN, NIKHEF, ETH, MIT, DESY, KEK, IHEP, MGU, NZCHVE, HMI ANRC, IHE, NPI, EPS, ESF, DOE, BNFL, SKODA, COGEMA, SGN, BELGATOM, FRAMATOM, RADON etc.

ИЯИЯЕ
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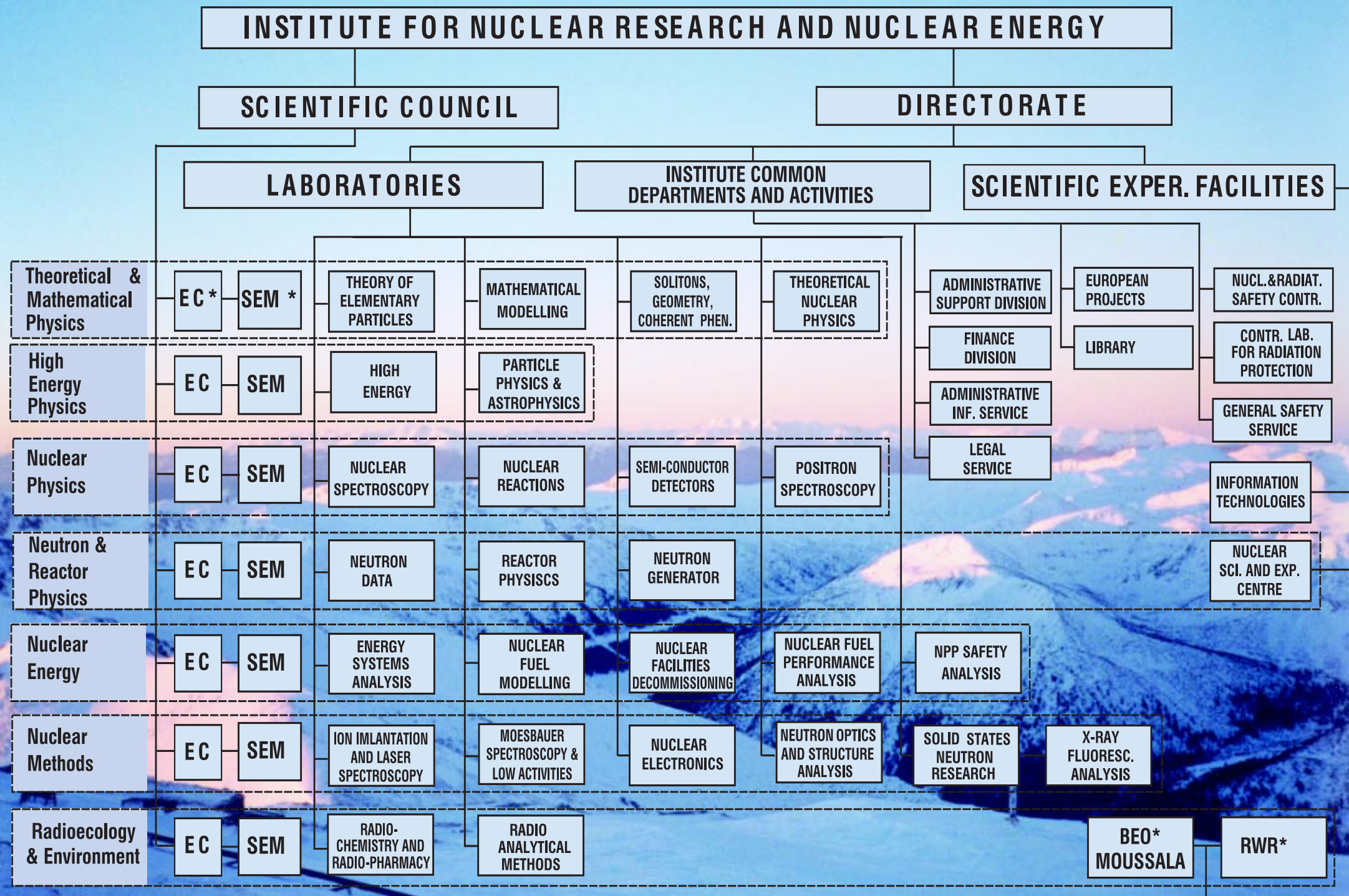
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BAS Campus 7th km



* EC - Expert Council; SEM - Seminar; BEO - Basic Environmental Observatory; RWR Radioactive Waste Repository

Theoretical and Mathematical Physics

Laboratories

- Theory of Elementary Particles**
Conformal field theory, quantum groups, strings and branes, integrable systems, gravity and cosmology, particle physics beyond the standard model, spectroscopy of exotic atoms and molecules of the light elements, squeezed states
Dr. Emil Nissimov; nissimov@inrne.bas.bg

- Mathematical Modelling**
Few-body problem, exotic atoms and molecules, computational methods, quantum field theory, quantum mechanics, approximation of experimental data
Dr. Dimitar Bakalov, dbakalov@inrne.bas.bg
Dr. Nina Bogdanova, nibogd@inrne.bas.bg

- Solitons, Coherency, and Geometry**
Solitons equations, soliton relations, optical solitons, entangled uncertainty relations, uncertainty inequalities, coherent states, squeezed states, differentiable manifolds with affine connections and metrics, theoretical gravitational physics, deviation equations, energy-momentum tensors, soliton-like solutions in extended electrodynamics
Dr.Sc. Vladimir Gerdjikov, gerjikov@inrne.bas.bg
Dr.Sc. Sawa Manoff, smanov@inrne.bas.bg

- Theoretical Nuclear Physics**
Nucleon-nucleon correlation effects on nuclear structure and reactions, nuclear physics field theory and algebraic methods, exotic nuclei and few-body systems, density functional theory for many-fermion systems
Dr.Sc. Vladimir Nikolaev, nikolai@spnet.net
Dr. Sevdalina Dimitrova, sevdin@inrne.bas.bg

High Energy Physics

Laboratories

- High Energy**
Collider, elementary particles, high energy physics
Dr. Vladimir Genchev, genchev@inrne.bas.bg
Dr. Georgi Sultanov, sultanov@inrne.bas.bg
- Particle Physics and Astrophysics**
Elementary particles, astrophysics, data analysis, neural networks
Dr. Petar Temnikov, temnikov@inrne.bas.bg

Nuclear Physics

Laboratories

- Nuclear Spectroscopy**
Experimental and theoretical study the structure of atomic nuclei, nuclear safety,radioecology, natural radioactivity
Dr.Sc. Chavdar Stoyanov, stoyanov@inrne.bas.bg
Dr. Lachezar Kostov, lkostov@inrne.bas.bg
- Nuclear Reactions**
Nuclear reactions, meson physics, hi-spin states, nuclear structure, excited state lifetimes Doppler-shift methods determination
Dr. Todorka Kutsarova, dorak@inrne.bas.bg
- Semi-Conductor Detectors**
Semiconductor detectors, nuclear electronics, noise, resolution, efficiency, nuclear spectroscopy
Dr. Mikhail Mikhailov, mikhailov@inrne.bas.bg
- Positron Spectroscopy**
Positron, positronium, electron-positron interaction, annihilation, radiation defects, vacancies, clusters
Dr.Sc. Troyo Troev, troev@inrne.bas.bg

Neutron and Reactor Physics

Laboratories

- Neutron Data**
Neutron data, data measurement and evaluation, resonance neutron cross sections, resonance parameters
Dr.Sc. Natalia Janeva, priresho@inrne.bas.bg
Dr Nina Koyumdjieva, anina@inrne.bas.bg
- Reactor Physics**
VVER reactors, steady state and transient neutron physics analyses, spent fuel characteristics and criticality safety analyses, spent fuel transportation and storage facilities, burnup credit, reactivity meter, neutron transport calculation; reactor dosimetry; benchmarks, nuclear safety, decommissioning of nuclear installations
Dr.Tihomir Apostolov, apos@inrne.bas.bg
Dr. Krassimira Ilieva, krilieva@inrne.bas.bg
- Neutron Generator**
Gamma-spectra, burnup, fresh fuel, gammabackground, neutron spectra, thermonuclear fusion
Dr. Ilija Penev, ilpen@inrne.bas.bg

Nuclear Scientific and Experimental Centre



IRT 2000 nuclear reactor partial decommissioning and reconstruction into a 200 kW low power facility, nuclear science and technology transfer, nuclear medicine application, NAA, education and qualification centre
Dr.Tihomir Apostolov, apos@inrne.bas.bg
Engineer Dimitar Drenski, drenski@inrne.bas.bg