Fifth International Conference
ENGINEERING OF SCINTILLATION MATERIALS
AND RADIATION TECHNOLOGIES
ISMART 2016
from 26 to 30 September 2016
Minsk, Belarus

PROGRAM

26.09.2016
14.00-20.00 Registration, INP BSU, room 200

27.09.2016
Chairman: **Olshewski A.G.**
Plenary Session **(rectorate)**
10.00-10.10 **Ablameiko S.V.,** Rector of BSU. Opening of the Conference
10.10-10.20 **Grinyov B.V.**, Welcome from the International Organizing Committee
10.20-10.40 **Maksimenko S.A.,** INP BSU, INP BSU. 30 years of scientific activity

10.40-11.20 ***Coffee Break and Registration***

Detectors and materials for radiation detection-I

11.20-11.50 **Vasil'ev A.N.,** SINP MSU, Microtheory of scintillation in crystalline materials
11.50-12.20 **Gektin A.V.,** ISMA, Scintillation development and production, wishes and reality
12.20-12.50 **Vasilyev M.A.,** Baker Hughes, Demand for a new instrumentation for well logging

13.00-14.30 ***Lunch and Registration***

Detectors for high energy physics
Plenary Session **(rectorate)**
Chairman: **Korjik M.V.**
14.30-15.00 **Shwartz B.A.,** Budker Institute of Nuclear Physics, Scintillation detectors in experiments on High Energy Physics
15.00-15.20 **Kulchitskiy U.A.**, JINR, ATLAS experiment and upgrade program
15.20-15.40 **Suarez Juan,** INP BSU, CMS-Experiment results and future plans for upgrade
15.40-16.00 **Dormenev V.I.,** Giessen University, Concept and performance of electromagnetic calorimeter of the PANDA detector at FAIR (GSI, Darmstadt)
16.00-16.20 **Tamulaitis G.,** Vilnius University, Fast optical phenomena in self-activated and Ce-doped materials prospective for fast timing in radiation detectors

16.20-16.50 ***Coffee Break and Registration***

Detectors and materials for radiation detection-II
Plenary Session **(rectorate)**
Chairman: **Gektin A.V.**
16.50-17.10 **Nikl M.,** Institute of Physics AS CR, COST Action TD1401: Nanocrystalline and nanocomposite scintillators for fast timing
17.10-17.30 **Zhmurin P.N.,** ISMA, Increasing the radiation resistance threshold of the plastic scintillators based on polystyrene
17.30-17.50 **Boyaruncev A.Y.,** ISMA, Scintillation element for HEP application
17.50-18.10 **Vedda A.,** University of Milano-Bicocca, Rare-earth doped silica-based optical fibers for high energy physics detectors

18.10-18.30 **Dosovitskiy G.A.,** IREA National Research Center "Kurchatov Institute", Raw materials for novel complex oxide garnet scintillators development

16.00-18.30 ***Poster session – High energy physics and materials for radiation detection*****(INP BSU, 3rd floor)**

Galunov N.Z., ISMA, Radiation-resistant composite scintillators for registration a large flux of ionizing radiation
Zosim D.I., ISMA, Some features of a homogeneous distribution of light yield along the elongated scintillator based on CsI (Tl)
Skoroteckiy M.S., ISPM RAS, Synthesis and properties of POPOP structural isomers and their trimethylsilyl derivatives
Danilenko J. A., ISMA, Application of international standards in scinitillation equipment
Le Hien Thi Zieu, INP BSU, Initial ionization distribution in active volume of ionization chamber
Podshibyakin A. V., JINR, The control system, data collection and diagnostics beam mass separator MASHA
Vasilyev I. I., JINR, The light yield of a long scintillation strip with WLS fiber embedded into the co-extruded hole
Pushak A.S., Ukrainian Academy of Printing, Luminescent and scintillation properties of $K_2BaX_4:Eu^{2+}$(X=Cl, Br)
Yemialyanchyk I. F., INP BSU, Large Hadron Collider at high luminosity: large radiation damageof scintillatorsanda possible way of solving the problem
Svertilov S.I., SINP MSU, Energy resolution of the flat, thin detector based on the use of $LaBr_3$:Ce crystal and PMT to be used for the light ions detection with the energy of up to 20 MeV/nucleon
Svertilov S.I., SINP MSU, Timing resolution of $LaBr_3$:Ce and $CeBr_3$ crystal scintillators in combination with different type photomultipliers, to be used for detection of cosmic radiation.
Shtitelman V. A., ISMA, Spectral distortion caused stray light and its correction
Rebrova N.V., ISMA, Crystal growth and scintillation properties of Eu^{2+} doped $RbCaCl_3$
Gavrylovets V.V., INP BSU, Influence of a crystal scintillator structure on the energy resolution of a homogeneous electromagnetic calorimeter
Mikhaylov V.A., INP BSU, Amplifier-discriminator for SiPM readout
Orsich P. O., INP BSU, Demand for radiation tolerant active materials for hadronic calorimetry at collider experiments with a high luminosity
Sytov A.I., INP BSU, A way to observe channeling and quasichanneling oscillations in a bent crystal
Drugakov V.V., INP BSU, A spectrometer system for luminosity measurement in ep scattering experiments
Kravtchuk N.P., JINR, Trekker prototype on a base of cathode stray
Belsky A., Institut Lumière Matière, Relaxed electronic states of Tl^+ and In^+ dopants in CsI scintillators

28.09.2016
Instruments and equipment for measurement of nuclear radiation and materials for radiation detection

Plenary Session **(rectorate)**

INTELUM
Chairman: Vasil'ev A.N.

9.00-9.30 **Auffray E.,** CERN, 25 years of R&D on inorganic scintillator and their applications in the Crystal Clear Collaboration.
9.30-9.50 **Pauwels K.,** CERN, Crystal fibers for future calorimeters
9.50-10.10 **Petrosyan A.G.,** Institute for Physical Research NAS of Armenia, Growth of garnet and perovskite scintillators with non-isovalent minor components and related effects
10.10-10.30 **Sidletskiy O.C.,** ISMA, Engineering of YAG-based scintillators for new HEP calorimeters

10.30-11.10 ***Coffee Break and Registration***

11.10-11.30 **Korjik M.V.,** INP BSU, The choice of active materials for use in the experiments at high luminosity colliders
11.30-11.50 **Lucchini M.T.,** CERN, Comparison of Single Crystalline and Composite Scintillators for Hadron Calorimetry at High Luminosity LHC

11.50-12.10 **Spassky D.A.,** SINP MSU, Self-trapping of charge carriers in Li_2MoO_4 and $ZnMoO_4$ cryogenic scintillators

12.10-12.30 **Tret'jak E.V.,** IPCP BSU, Optical and structural properties of $3CaO\text{-}2SiO_2$:Ce, $3CaF_2\text{-}2SiO_2$:Ceand $3Ca_xBa_{1-x}O\text{-}2SiO_2$:Ce (x=0, 0.5, 1) glasses

12.30-12.50 **Arhipov P.V.,** ISMA, Scintillation crystals of rare-earth aluminates grown in reducing environments

12.50-14.30 Lunch

Instruments and equipment for measurement of nuclear radiation
Chairman: Nikl M.

14.30-14.50 **Singovski A.V.**, University of Minnesota,Radiation Hard Electronics for Hadron Collider Experiments. LHC Experience and Projects for HL LHC

14.50-15.10 **Kalinnikov V.A.,** JINR, Design of homogeneous electromagnetic calorimeter with heavy crystals operating in magnetic fields

15.10-15.30 **Taranyuk V.I.,** ISMA, Scintillation crystals growth methods for laboratory research and industrial production

15.30-15.50 **Ahmadov F.I.,** Institute of Radiation Problem**,**New phoswich detector based on MAPD and LFS& p-terphenyl scintillator

15.50-16.10 **Gorbacheva T.E.,** ISMA, Light collection in composite and polycrystalline organic scintillators

16.10-16.30 **Kazuchits N.M**., BSU, Raman and photoluminescence in diamonds irradiated with swift xenon ions

16.30-17.00 Coffee Break

Chairman: Galunov N.Z.

17.00-17.20 **Baranov V.Y.,** JINR, Research of properties undoped crystals CsI

17.20-17.40 **Pereymak V.N.,** ISMA, Improving the temporal characteristics of the plastic scintillator

17.40-18.00 **Malkov A.P.,** JSC "SSC RIAR", Monitoring systems of distribution of the starting material in the reactor target for production of radionuclides by illumination of ionizing radiation sources

18.00-18.20 **Kalinov V.S.,** Pre-irradiation annealing influence on efficiency of the near-surface color centers formation in lithium fluoride nano-crystals

18.20-18.40 **Batouritski M.A.**, INP BSU, Precision measurements RF parameters of superconducting cavities

16.00-18.30 Poster session –Instruments and equipment for measurement of nuclear radiation, Materials for radiation detection, Detectors and detector systems for medical diagnostics and security systems, Radiation damage of materials and detectors **(INP BSU, 3rd floor)**

Zhukovsky A.I., ATOMTEX, Gamma spectrometer for radiation monitoring water areas and bottom sediments

Lukashevich R.V., ATOMTEX, Calibration of scintillation block-comparators for metrological provision of measuring a dose rate of 0.1 μSv/h on the calibration dosimetric installations

Komar D.I., ATOMTEX, Using the geometry of the thermal neutron calibration unit of neutron radiation UPN-AT140 as a source of capture gamma-rays with energies up to 10 MeV for the calibration of scintillation detection units

Alekseichuk I.A., ATOMTEX, Intellectual scintillation detection units for operating in hard conditions

Sytova S. N., INP BSU, Basic and applied science at the portal of nuclear knowledge BelNET

Solomaha T.A., BSU, Synthesis and spectral-luminescent properties of $BaI_2:Eu^{2+,3+}$, M^+ powders ($M = Li^+, Na^+, K^+$)

Krutyakn N.R., Physical Faculty MSU, Influence of fluorine doping on luminescent properties of cadmium and zinc tungstates

Nichiporchuk A.O., ATOMTEX, Imitation of volumetric measures of metal activity for the calibration of scintillation gamma-spectrometers

Makarevich K.O., INP BSU, Applications of Monte Carlo methods in medicine

Molchanova N.I., ISMA, On the role of metrological provision of in the production process of crystals
Vasilyev D.A., Vasilyeva N.V., Prokhorov GPI RAS, Optical and scintillation properties of Ce-doped (Pb,Gd)3(Al,Ga)5O12 epitaxial garnet films
Pedash V.Y., ISMA, Application of semi-transparent interpixel gaps for improvement of spatial resolution in pixilated scintillation detectors
Danilkin M.I., Vereshchagina N.Y., Lebedev PI RAS, Trapping centres formation in $Li_2B_4O_7$-based thermoluminescent materials
Velicheva E. P., JINR, Development of Geant4 optical model of LYSO crystal
Yamny K.O., The system for intrascopy of the huge objects
Onufriyev Yu.D., ISMA, LiI(Eu) based composite detector for thermal neutron registration
Onufriyev Yu.D., Light collection in a scintillation element for HEP applications
Nepokupnaya T., Combined detector for the registration of low-energy γ-radiation
Tarasov V.A., ISMA, On the various concepts of quality evaluation for scintillators light output measurements
Baranova M.A., JSC "SNIIP", Device of detection of inert radioactive gases volume activity
Shalamova V.Yu., JCS "SNIIP", Device of detection of vapor I-131 volume activity

29.09.2016

***Plenary Session–I* (Council conference room INP BSU)**

Detectors and detector systems for medical diagnostics and security systems; neutron detectors
Chairman: Dormenev V.I.

9.00-9.30 **Kazimirov A.S.,** RPE "AtomKomplexPrylad", Experience and perspectives of scintillation spectrometry instruments for radiation safety problems at nuclear power plants, environmental control and monitoring (On Russian)
9.30-9.50 **Drobot S.V.,** Gosatomnadzor, Regulatory infrastructure of the Republic of Belarus in the field of radiation safety during the construction of the Belarusian nuclear power plant (On Russian)
9.50-10.10 **Batyunin A.V.,** Institute "Project Center ITER", Wide-ICD to measure fast neutron flux, designed for ITER

10.10-10.40 Coffee Break (INP BSU)

10.40-11.00 **Galunov N.Z.,** ISMA, The detection of neutrons
11.00-11.15 **Kaschuk Y.A.,** Institute "Project Center ITER", The use of fiber-optic in distributed systems of registration to ionizing radiation
11.15-11.50 **Obudovsky S.Y.,** Institute "Project Center ITER", Radiometer to monitor gpse units flux density and neutron fluence for nuclear facilities
11.30-11.45 **Kvatchadze V.G.,** Andronikashvili Physical Institute, TSU, On the possibility to use magnesium oxide for selective detector of fast neutrons

Specialized scintillators and detectors based on their

Chairman: Dosovitskiy G.A.

11.50-12.10 **Borshchev O.V.,** ISPM RAS, Nanostructured organosiliconluminophores as effective and fast spectral shifters in a wide spectral region
12.10-12.30 **Pandey I.R.,** Kyungpook National University (South Korea), Growth and ScintillationProperties of $Na_6Mo_{11}O_{36}$ single crystal
12.30-12.50 **Omelkov S.I.,** Institute of Physics, University of Tartu, CsI: A low cost scintillator for TOF-PET?
12.50-13.10 **Mokina V.M.,** INFN, Improvement of the radiopurity level of $^{116}CdWO_4$ and $ZnWO_4$ crystal scintillators by recrystallization

***Plenary Session– II* (Faculty of Physics BSU, room 321)**

Detectors and detector systems for security systems and medical imaging

Chairman: Boyarincev A. Y.

9.00-9.20 **Gritsyna V.T.,** Karazin Kharkiv National University, Luminescence properties of irradiated spinel ceramics at different temperature

9.20-9.40 **Pozdnyakov D.V., Kasiuk, D.M.,** "ADANI", Ionizing radiation spectrum optimization for the personal inspection X-ray systems

9.40-10.00 **Svertilov S.I.,** SINP MSU, Energy resolution of $LaBr_3$:Ce, $CeBr_3$ and Ce:GAGG crystal scintillators in combination with different type photomultipliers, as well as with Si-photodiodes, to be used for detection of cosmic gamma-rays

10.00-10.20 **Bogomolov V.V., Svertilov S.I.,** SINP MSU, Scintillating spectrometer for long-term study of the sea level gamma-ray background variations caused by changes of concentration of radioactive isotopes and particle acceleration during thunderstorms

10.20-10.40 **Fedorov A.A.,** INP BSU, GAGG:Ce scintillation detector with SiPM readout

10.40-11.20 Coffee Break (INP BSU)

11.20-11.40 **Galenin E.P.,** ISMA, Peculiarities of the crystal SrI2by the Czochralski method

11.40-12.00 **Voronov A.P.**, "Institute for Single Crystals" NAS of Ukraine, Activated Crystals KDP group for the selective detection of neutrons

12.00-12.20 **Galunov N.Z.,** ISMA, Scintillators based on microcrystalline grains

12.20-12.40 **Nagorny S.S.,** Gran Sasso Science Institute, ZnSe scintillating bolometer with ionization readout - a new approach for particle discrimination technique

12.40-13.00 **Kozhemyakin V.A.**, ATOMTEX, New developments of radiation monitoring equipment on the basis of scintillation detectors

13.00-14.30 Lunch
14.30-18.00 Excursion. Options: Victory Museum or Belarus ethnovillage
18.00-21.00 Conference Dinner

30.09.2016

(Council conference room INP BSU, 3rd floor)

10.00-11.30 **Rond table**. Chairman: Gektin A.V.
New materials, new approaches and the interaction with the industry

11.30-12.00 **Korjik M.V.,** Closing of the conference