

PROGRAM

International conference

**“Physics of Cancer:
Interdisciplinary Problems
and Clinical Applications”**

22-25 March 2016, Tomsk, Russia



INTERNATIONAL CONFERENCE

Physics of cancer: interdisciplinary problems and clinical applications

March 22-25, 2016

Tomsk, Russia

Conference Program

ORGANIZERS

Federal Agency for Scientific Organizations
Institute of Continuous Media Mechanics UB RAS,
Perm, Russia
Institute of Strength Physics and Materials Science SB RAS,
Tomsk, Russia
Tomsk State University, Tomsk, Russia
National Research Polytechnic University, Perm, Russia
Siberian State Medical University, Tomsk, Russia
Siberian Branch of the Russian Academy of Sciences
Ural Branch of the Russian Academy of Sciences
Ecole Normale Supérieure de Lyon, Lyon, France
University of Leipzig, Institute of Experimental Physics,
Leipzig, Germany

Tomsk Polytechnic University, Tomsk, Russia
Acad. Herten Research Oncology Institute, Moscow, Russia
Perm State Academy of Medicine named after Acad. E.A. Wagner,
Perm, Russia
Technion-Israel Institute of Technology, Haifa, Israel
Jožef Stefan Institute, Ljubljana, Slovenia
Institut Curie, Paris, France
Pierre and Marie Curie University, Paris, France
Institute of Molecular Genetics, Montpellier, France
Institute for Biophysics, Bremen, Germany
Technology Platform "Medicine of the Future", Russia
Tomsk Cancer Research Institute, Russia
Skolkovo Institute of Science and Technology, Russia
Innovative territorial center "INO Tomsk"

Tomsk – 2016

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OBJECTIVES

A transdisciplinary Conference “Physics of Cancer: Interdisciplinary Problems and Clinical Applications” is organized in succession of the Trilateral Russia-Germany-France Workshop “Oncology: on the Frontiers of Molecular Genetics, Biophysics and Medicine, June 5-8, 2012, Perm, Russia”. It aims at gathering researchers working in the fields of physics of cancer, of biophysics and medicine to discuss challenging approaches for cancer risk determination.

Cancer has been shown to be related to genetic mutations that could facilitate cellular escape from homeostatic tissue control. The subsequent growth and progression of a tumor is an inherently multi-scale process. At the sub-cellular level, despite the fact that the nucleus is one of the most important components of the cell, little is known about the contribution of the nuclear shape and size to the mechanical regulation of the genome function. The physical coupling between chromatin architecture and various nuclear and cytoplasmic scaffolds remains poorly understood. Concepts and methods of mechanobiology will be used to study physical factors involved in the process of mechanotransduction, as the ability to sense the forces and physical environment at the cell and tissue. Mechanobiology, based on a multi-disciplinary expertise from molecular, cellular and tissue biology, from mathematics, computational modeling, physics, physical chemistry, biophysics and engineering will help in understanding mechanical functions across molecular, cellular and tissular levels. Among the key issues that will be addressed in this workshop, special focus will be on modern methods of spatio-temporal analysis of various biological and medical signals including those issued from molecular-genetic studies, mammography and infrared data, as well as images from different high resolution microscopies (e.g. confocal microscopy, atomic force microscopy, scanning electron microscopy, scanning surface potential microscopy). Concepts, methodologies, numerical and experimental techniques coming from statistical mechanics and nonlinear physics combined with multi-scale signal processing will be discussed with the specific goal to establish some correlation between clinic stages of tumor progression and biomechanical markers.

MAIN TOPICS

- Current transdisciplinary issues in cancer diagnosis and treatment
- Cell biology and cell mechanics and their impact on cancer progression
- New technologies and theoretical models for cancer research
- Mechano-genetics of the cell: application to embryonic and tumor development
- Multi-scale analysis and modeling of genomic, epigenetic and microscopy data, methodology and application to cancer
- Application of molecular genetics technology and biophysics methods in target therapy and cancer risk estimation
- Modern materials and diagnosis methods for cancer treatment
- Cancer nanotechnology
- Materials / implants for reconstructive oncology

REGISTRATION

Registration of the conference participants and guests will take place on March 22 (Tuesday) from 08.00 a.m. to 10.00 a.m. and March 23 (Wednesday) from 08.00 a.m. to 9.00 a.m. at the hall of TPU International Culture Center (13 Usova Street).

PRESENTATION OF REPORTS

The conference will consist of oral and poster sessions. Simultaneous interpretation will be provided at the conference sessions. Oral presentations will be limited to 20 min (including discussion); computer projectors will be available. The size of poster presentations should be 60×80 cm. Computer and poster presentations must be prepared in English.

OFFICIAL LANGUAGES will be Russian and English.

SCHEDULE

March 22, 2016 (Tuesday)

(TPU International Culture Center, 13 Usova Street)

08:00 – 10:00 Registration

10:00 – 10:15 Conference opening ceremony

10:15 – 14:00 Plenary session

Co-Chairmen: O.B. Naimark, N.V. Cherdyntseva

10:15 – 10:45 **Mikhail Popov** (Tomsk Polytechnic University, Tomsk, Russia) (plenary report)

Ant Civilization

10:45 – 11:15 **Annick Lesne** (CNRS, LPTMC, Paris, IGMM, Montpellier, France) (plenary report)

Physics of cancer: multiscale insights on cancer progression

11:15 – 11:45 **Oleg Borisovich Naimark** (Institute of Continuous Media Mechanics UB RAS, Perm, Russia) (plenary report)

Multiscale Simulation of Biological Systems and Some Applications in Oncology

11:45 – 12:15 **Alain Arneodo** (Université de Bordeaux, France) (plenary report)

Genome-wide alterations of the DNA replication program during tumor progression

12:15 – 12:30 Coffee break

12:30 – 13:00 **Vladimir Ivanovich Chernov^{1,2}, A.A. Medvedeva^{1,2}, R.V. Zelchan^{1,2}, I.G. Sinilkin^{1,2}, E.S. Stasyuk², L.A. Larionova², E.M. Slonimskaya¹, E.L. Choynzonov¹** (¹Tomsk Cancer Research Institute, ²Tomsk Polytechnic University, Tomsk, Russia) (plenary report)

Use of Radiopharmaceuticals in Scintigraphic Visualization of Cancer

13:00 – 13:30 **Dmitry Olegovich Zharkov^{1,2}, A.V. Endutkin^{1,2}, A.P. Dovgerd^{1,2}, A.V. Popov¹, I.R. Grin^{1,2} and G.V. Mechetin¹** (¹SB RAS Institute of Chemical Biology and Fundamental Medicine, ²Novosibirsk State University, Novosibirsk, Russia) (plenary report)

DNA Repair and Active Demethylation: A New Cancer Epigenetic Connection

13:30 – 14:00 **Nadezhda Victorovna Cherdyntseva^{1,2}, N. Litviakov^{1,2}, E. Denisov^{1,2}, M. Zavyalova^{1,3}, M. Stakheyeva¹, J. Kzhyshkowska², V. Perelmutter^{1,3}** (¹Tomsk Cancer Research Institute, ²Tomsk State University, ³Siberian State Medical University, Tomsk, Russia) (plenary report)

The Molecular Aspects of Personalized Anticancer Treatment

14:00 – 15:00 Lunch

15:00 – 18:00 Tomsk sightseeing guided tour

March 23, 2016 (Wednesday)

(TPU International Culture Center, 13 Usova Street)

08:00 – 09:00 Registration

Co-Chairmen: A. Lesne, V.I. Chernov

09:00 – 09:30 **Carmela Rianna and Manfred Radmacher** (Institut für Biophysik, Universität Bremen, Germany) (plenary report)
The mechanical phenotype of cancer cells

09:30 – 10:00 **Alexis Gautreau** (Ecole Polytechnique, Palaiseau, France) (plenary report)
Loss of a Novel Branched Actin Checkpoint in Cancer Cells

10:00 – 10:30 **Francoise Argoul** (Ecole Normale Supérieure de Lyon, Lyon, Université de Bordeaux, France) (plenary report)
Revealing the Increased Internal Complexity of Cancer Cells with Quantitative Phase Microscopy

10:30 – 10:50 Coffee break

10:50 – 11:20 **Sergey Nikolaevich Kulkov** (ISPMS.SB RAS) (plenary report)
Zirconia-Based Sintered Ceramics for Biomedical Applications

11:20 – 11:50 **Elazar Gutmanas** (Department of Materials Science & Engineering, Technion - Israel Institute of Technology Haifa, Israel) (plenary report)
Iron oxide and gold nanoparticles in cancer therapy

11:50 – 13:00 Poster session

13:00 – 14:00 Lunch

Co-Chairmen: M. Radmacher, Yu.P. Sharkeev

14:00 – 14:20 **Ludmila Victorovna Spirina^{1,2}, Y.A. Usynin¹, I.V. Kondakova¹, Z.A. Yurmazov¹, E.M. Slonimskaya^{1,2}** (¹Tomsk Cancer Research Institute, ²Siberian State Medical University, Tomsk, Russia)
Small renal masses: the molecular markers associated with outcome of patients with kidney tumors 7 cm or less

14:20 – 14:40 **Anastasiya Igorevna Ryabova¹, V.A. Novikov¹, E.L. Choinzonov^{1,3}, O.V. Gribova^{1,2}, Zh.A. Startseva¹** (¹Tomsk Cancer Research Institute, ²National Research Tomsk Polytechnic University, ³Siberian State Medical University, Tomsk, Russia)
Local Hyperthermia in Malignant Glioma Treatment

14:40 – 15:00 **Marina Nikolaevna Stakheeva¹, D. Eidenzon², N. Cherdyntseva¹, E. Slonimskaya¹, E. Cherdyntsev³** (¹Tomsk Cancer Research Institute, Tomsk, Russia, ²NovoSpark Corporation, Waterloo, Ontario, Canada, ³National Research Tomsk Polytechnic University, Tomsk, Russia)
Multidimensional Visualization for the Immune System State Presentation in Breast Cancer Patients

15:00 – 15:20 **Ivan Gennad'evich Sinilkin, V.I. Chernov, E.M. Slonimskaya, L.A. Kolomiets, R.V. Zelchan, A.A. Medvedeva, A.Yu. Lyapunov, O.D. Bragina, N.V. Varlamova, V.S. Skuridin** (Tomsk Cancer Research Institute, Tomsk, Russia)
Development and first clinical experience with a new domestic radiopharmaceutical ^{99m}Tc-aluminum oxide, gamma for imaging sentinel lymph nodes in malignant tumors

- 15:20 – 15:40 **Gelena Valerievna Kakurina¹, E.S. Kolegova¹, I.V. Kondakova¹, O.V. Cheremisin¹, A.A. Zavyalov^{1,2}, D.A. Shishkin^{1,2}, E.L. Choinzonov^{1,2}** (¹Tomsk Cancer Research Institute, ²Siberian State Medical University, Tomsk, Russia)
Adenylyl Cyclase-Associated Protein 1 in Metastasis of Squamous Cell Carcinoma of Head and Neck Cancer and Non-Small Cell Lung Cancer
- 15:40 – 16:00 **Coffee break**
- 16:00 – 16:20 **Elena Arkadieevna Lyapunova^{1,2}, A. Nikituk¹, Yu. Bayandin¹, O. Naimark¹, C. Rianna³, M. Radmacher³** (¹Institute of Continuous Media Mechanics, Perm, ²Ural Federal University, Ekaterinburg, Russia, ³University of Bremen, Institute of biophysics, Bremen, Germany)
Multifractal Detrended Fluctuation Analysis of Atomic Force Microscopy Data Obtained on Living Cells
- 16:20 – 16:40 **Irina Victorovna Kondakova¹, N.V. Yunusova^{1,2}, L.V. Spirina^{1,2}, E.E. Shashova¹, E.S. Kolegova¹, L.A. Kolomiets¹, E.M. Slonimskaya^{1,2}, A.B. Villert¹** (¹Tomsk Cancer Research Institute, ²Siberian State Medical University, Tomsk, Russia)
Locomotor Proteins in Tissues of Primary Tumors and Metastases of Ovarian and Breast Cancer
- 16:40 – 17:00 **Dmitry Anatolievich Bratsun¹, A.P. Zakharov², L. Pismen²** (¹Perm National Research Polytechnic University, Perm, Russia, ²Technion - Israel Institute of Technology, Haifa, Israel)
Chemo-Mechanical Modeling of Tumor Growth in Elastic Epithelial Tissue
- 17:00 – 17:20 **Evgeny Vladimirovich Denisov^{1,2}, T.S. Gerashchenko^{1,2}, L.A. Tashireva¹, D.N. Pautova², M.V. Zavyalova^{1,2,3}, N.V. Cherdyntseva^{1,2}, V.M. Perelmutter^{1,3}** (¹Tomsk Cancer Research Institute, ²Tomsk State University, ³Siberian State Medical University, Tomsk, Russia)
The epithelial-mesenchymal transition (EMT) spectrum in breast cancer: a correlation with intratumor morphological diversity
- 17:20 – 17:40 **Natalia Valerievna Yunusova^{1,2}, S.N. Tamkovich^{3,4}, M.N. Stakheeva¹, S.G. Afanas'ev¹, A.Y. Frolova², I.V. Kondakova¹** (¹Tomsk Cancer Research Institute, ²Siberian State Medical University, Tomsk, ³Institute of Chemical Biology and Fundamental Medicine SB RAS, ⁴Novosibirsk State University, Novosibirsk, Russia)
The Characterization of Exosome from Blood Plasma of Patients with Colorectal Cancer
- 18:00 – 22:00 **Banquet**

March 24, 2016 (Thursday)

(TPU International Culture Center, 13 Usova Street)

Co-Chairmen: I.A. Kirilova, O.S.Gileva

- 09:00 – 09:20 **Yu.E. Geints, A.A. Zemlyanov, Ekaterina Konstantinovna Panina** (Zuev Institute of Atmospheric Optics SB RAS, Tomsk, Russia)
The investigation of the optimal conditions thermal destruction of the microcapsules containing water by laser pulses
- 09:20 – 09:40 **Sergey Valerievich Mishinov** (Novosibirsk Research Institute of Traumatology and Orthopaedics, Novosibirsk, Russia)
Cytotoxic activity of interferon Alpha Induced Dendritic Cells as a biomarker of Glioblastoma
- 09:40 – 10:00 **Yury Vladimirovich Kistenev^{1,2}, A.V. Borisov¹, D.A. Kuzmin², A.A. Bulanov¹** (¹National Research Tomsk State University, ²Siberian State Medical University, Tomsk, Russia)
The Classification of the Patients with Pulmonary Diseases Using Breath Air Samples Spectral Analysis
- 10:00 – 10:20 **Evgeniya Igorevna Chechkina¹, B. Toner², K. Batchelder², A. Khalil², A. Arneodo^{3,4}, F. Argoul^{3,4}, B. Audit⁴, S.G. Roux⁴, O. Gileva⁵ and O. Naimark¹** (¹Institute of Continuous Media Mechanics UB RAS, Perm, Russia, ²University of Maine, Maine, USA, ³Université de Bordeaux, France, ⁴ENS de Lyon, Université de Lyon, France, ⁵Perm State Medical University named after ac. E.A. Wagner, Perm, Russia)
Adaptation of Multifractal Analysis for Breast Cancer Identification in Digital Mammograms and Infrared Thermograms
- 10:20 – 10:40 **S.N. Kulkov¹, S.P. Buykova¹, Denis Evgenievich Kulbakin^{1,2}** (¹Tomsk State University, ²Tomsk Cancer Research Institute, Tomsk, Russia)
Development of the Method Individual Reconstruction of Maxillofacial Defects Using Bioactive Ceramics Implants
- 10:40 – 11:00 Coffee break**
- 11:00 – 11:20 **D.V. Ryzhikov, Elena Vladimirovna Gubina, V.T. Podorozhnaya, M.A. Sadovoy** (Research Institute of Traumatology and Orthopedics n.a. Ya.L. Tsivyan, Novosibirsk, Russia)
Replacement of the Defect and Osteosynthesis of Diaphyseal Defects Osteoblastoklastome Long Bones in Children
- 11:20 – 11:40 **Marina Vasilievna Chaikina¹, E.G. Komarova², Yu.P. Sharkeev², N.V. Bulina¹, I.Yu. Prosanov¹** (¹Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, ²Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia)
Lanthanum-Silicon-substituted Hydroxyapatite: Mechanochemical Synthesis and Prospects for Medical Applications
- 11:40 – 12:00 **Ekaterina Gennadievna Komarova¹, M.V. Chaikina², M.B. Sedelnikova¹, Y.P. Sharkeev¹** (¹Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia, ²Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia)
Structure and Properties of La- and Si-incorporated Calcium Phosphate Coatings

- 12:00 – 12:20 **Victor Victorovich Rerikh, A.R. Avetisyan, A.M. Zaidman, K.A. Anikin, V.A. Bataev, A.A. Nikulina, M.A.Sadovoy, A.M. Aronov, E.S. Semantsova** (Research Institute of Traumatology and Orthopedics n.a. Ya.L. Tsivyan, Novosibirsk, Russia)
Osseointegration of Alumina Bioceramic Granules: Comparative Experimental Study
- 12:20 – 12:40 **Viacheslav Alexandrovich Bazloy** (Research Institute of Traumatology and Orthopedics n.a. Ya.L. Tsivyan, Novosibirsk, Russia)
The use of modern materials in the manufacture scaffolds in order to replace bone defects
- 12:40 – 13:00 **Ludmila Leonidovna Meisner^{1,2}, V.M. Matveeva³, S.N. Meisner^{1,2}, A.L. Matveev⁴, E.Yu. Gudimova^{1,2}, O.I. Shabalina¹** (¹Institute of Strength Physics and Materials Science SB RAS, ²National Research Tomsk State University, Tomsk, ³Institute of Chemical Biology and Fundamental Medicine SB RAS, Novosibirsk, Russia)
Effects Of Surface Chemistry, Topography, And Structure Of Ion Modified TiNi Biomaterial On Stem Cell Behavior
- 13:00 – 14:00 Lunch**
- Co-Chairmen: A. Gautreau, D.O. Zharkov**
- 14:00 – 14:20 **Aleksander Gennadjevich Popov¹, V.A. Kovalev¹, I.I. Anisenya², D.V. Mitrichenko¹, A.B. Prosolov¹, I.A. Khlusov¹** (¹OOO «NPK «SINTEL», ²Tomsk Cancer Research Institute, Tomsk, Russia)
3D-modeling in the production of custom-made implants
- 14:20 – 14:40 **Alla Mikhailovna Zavdman** (Novosibirsk Research Institute of Traumatology and Ortopaedics n.a. Ya. L. Tsivyan, Novosibirsk, Russia)
Osteograft – Plastic Material for Regenerative Medicine
- 14:40 – 15:00 **Irina Anatolievna Kirilova¹, Yu.P. Sharkeev^{2,3}, S.V. Nikolaev^{4,5}, V.T. Podorozhnaya¹, P.V. Uvarkin², A.S. Ratushnyak⁵, V.V. Chebodaeva³** (¹Novosibirsk Research Institute of Traumatology and Ortopaedics n.a. Ya. L. Tsivyan, Novosibirsk, ²Institute of Strength Physics and Materials Science SB RAS, Tomsk, ³National Research Tomsk Polytechnic University, Tomsk, ⁴Institute of Cytology and Genetics SB RAS, Novosibirsk, ⁵Design Technological Institute of Digital Techniques SB RAS, Novosibirsk, Russia)
Physical and Mechanical Properties of Extracellular Matrix Produced from Demineralized Allogeneic Bone
- 15:00 – 15:20 **Petr Mikhailovich Larionov** (Novosibirsk Research Institute of Traumatology and Ortopaedics n.a. Ya. L. Tsivyan, Novosibirsk, Russia)
Tissue-engineering design for the replacement of bone defects with optical control based on laser-induced fluorescence (LIF) spectroscopy
- 15:20 – 15:40 **Sergei Ivanovich Tverdokhlebov¹, E.N. Bolbasov¹, N.V. Cherdyntseva² and E.L. Choinzonov²** (¹Tomsk Polytechnic University, ²Tomsk Cancer Research Institute, Tomsk, Russia)
Composite Implants for Craniofacial Reconstruction in Cancer Patients
- 15:40 – 16:00 Coffee break**
- 16:00 – 18:00 The Botanical Garden excursion**

March 25, 2016 (Friday)

(Main building of ISPMS SB RAS, 2/4 pr. Akademicheskii)

Co-Chairmen: S.N. Kulkov, E.A. Lyapunova

- 09:00 – 09:20 **Denis Evgenievich Kulbakin^{1,2}, E.L. Choinzonov¹, M.R. Mukhamedov¹, E.U. Garbukov¹, V.I. Shtin¹** (¹Tomsk Cancer Research Institute, ²Tomsk State University, Tomsk, Russia)
Modern Principles of Reconstructive Surgery for Advanced Head and Neck Tumors
- 09:20 – 09:40 **Tatyana Yuryevna Sablina¹, A.D. Pshenichnyj², N.L. Savchenko^{1,2,3}, S.P. Buyakova^{1,2,3} and S.N. Kulkov^{1,2,3}** (¹Institute of Strength Physics and Materials Science SB RAS, ²National Research Tomsk State University, ³National Research Tomsk State Polytechnic University, Tomsk, Russia)
Mechanical Behavior of a Ceramic/Polyethylene Sandwich-Structured Composite for Reconstructive Oncology
- 09:40 – 10:00 **Nikolaj Leonidovich Savchenko^{1,2,3}, T.Yu. Sablina¹, I.N. Sevostyanova¹, A.D. Pshenichnyj², S.P. Buyakova^{1,2,3} and S.N. Kulkov^{1,2,3}** (¹Institute of Strength Physics and Materials Science SB RAS, ²National Research Tomsk State University, ³National Research Tomsk State Polytechnic University, Tomsk, Russia)
The Porous Zirconia-Alumina Based Ceramics for Implants
- 10:00 – 10:20 **Alexander Anatolevich Kozulin¹, A.S. Narikovich², S.N. Kulkov^{1,3}, V.N. Leitsin²** (¹National Research Tomsk State University, Tomsk, Russia, ²Immanuel Kant Baltic Federal University, Kaliningrad, Russia, ³Institute of Strength Physics and Materials Science of Siberian Branch Russian Academy of Sciences, Tomsk, Russia)
Experimental Investigations of Strength Properties, Fatigue Behavior and Damage Formation of ZrO₂-based Ceramics
- 10:20 – 10:40 **Oleg Victorovich Kokorev, V.N. Hodorenko, V.E. Gunther** (Tomsk State University, Tomsk, Russia)
Antitumor Immunomodulatory Activity Allogenic Bone Marrow Cells on Scaffold of TiNi
- 10:40 – 11:00 **S.I. Tverdokhlebov¹, Olga Vasilievna Kolokolova^{2,3}, N.V. Cherdyntseva⁴, and E.L. Choinzonov⁴** (¹National Research Tomsk Polytechnic University, ²Institute of Strength Physics and Materials Science SB RAS, ³Technology Platform “Medicine of the Future”, Science Board “Promising medical materials”, ⁴Tomsk Cancer Research Institute SB RAS, Tomsk, Russia)
Marketing Advantages of Composite Implants for Reconstructive Surgery of Craniofacial Area in Oncology
- 11:00 – 11:20 **Nikolai Vasilievich Litviakov¹, V.M. Perelmuter¹, S.I. Tverdokhlebov², D.E. Kulbakin¹, E.N. Bolbasov², N.V. Cherdyntseva¹** (¹Tomsk Cancer Research Institute, ²National Research Tomsk Polytechnic University, Tomsk, Russia)
Composite Implants Coated with Biodegradable Polymers does not Stimulate Tumor Progression
- 11:20 – 11:40 **Coffee break**
- 11:40 – 12:00 **Conference closing session**

Poster session

March 23, 2016 (Wednesday)

(TPU International Culture Center, 13 Usova Street)

1. **L.V. Antonova¹, E.O. Krivkina¹, E.A. Sergeeva¹, V.V. Sevostyanova¹, A.Yu. Burago¹, N.N. Burkov^{1,2}, R.F. Sharifulin², E.A. Velikanova¹, Yu.A. Kudryavtseva¹, O.L. Barbarash¹, L.S. Barbarash¹** (¹Research Institute for Complex Issues of Cardiovascular Diseases, ²Kemerovo Cardiology Dispensary, Kemerovo, Russia)
Biofunctionalization of nonwoven complex oriented scaffolds with distinct differentiation molecules for the directed tissue regeneration
2. **O.V. Bakina^{1,2}, A.N. Fomenko^{1,2}, M.S. Korovin^{1,2}, E.A. Glazkova^{1,2}, N.V. Svarovskaya^{1,2}** (¹Institute of Strength Physics and Materials Sciences SB RAS, ²National Research Tomsk Polytechnic University, Tomsk, Russia)
Novel of core-shell AlOOH/Cu nanostructures: Synthesis, characterization and in vitro toxicity in Neuro-2a cells
3. **A.S. Buyakov^{1,2}, S.N. Kulkov^{1,2}, M. Chatzinikolaidou³ and D.E. Kulbakin^{1,4}** (¹Institute of Strength Physics and Material Science SB RAS, ²National Research Tomsk State University, Tomsk, Russia, ³University of Crete Dept. of Materials Science and Technology, Crete. Greece, ⁴Tomsk Cancer Research Institute, Tomsk, Russia)
Porous Composite Materials ZrO₂(Mg)-MgO for Osteoimplantology
4. **S.P. Buyakova^{1,2,3} and S.N. Kulkov^{2,3}** (¹Institute of Strength Physics and Material Science SB RAS, ²National Research Tomsk State University, ³ National Research Tomsk Polytechnic University, Tomsk, Russia)
Material Science Aspects of Cancer Patients Osteoprosthesis
5. **V.A. Bychkov, L.A. Tashireva, A.V. Isaeva and L.N. Bondar** (Tomsk Cancer Research Institute, Tomsk, Russia)
Effect of Neoadjuvant Therapy on Inflammatory Response and Progression of Head and Neck Tumors
6. **M.V. Grigoriev^{1,2}, S.N. Kulkov^{1,2,3}** (¹Institute of Strength Physics and Materials Science SB RAS, ²Tomsk Polytechnic University, ³Tomsk State University, Tomsk, Russia)
Structures and Properties of Alumina-Based Ceramic for Reconstructive Oncology
7. **O.Yu. Dvoryaninova¹, E.G. Nikitina^{1,2}, V.A. Bychkov¹, D.E. Kulbakin¹, M.R. Muchamedov¹, N.V. Litviakov^{1,2}, E.L. Choinzonov^{1,3}** (¹Tomsk Cancer Research Institute, ²National Research Tomsk State University, ³Siberian State Medical University, Tomsk, Russia)
Oral and HPV-positive oral cancer in Far Eastern Federal region of Russia and Siberian
8. **A.N. Fomenko^{1,2}, M.S. Korovin^{1,2}, O.V. Bakina^{1,2}, S.O. Kazantsev^{1,2}** (¹National Research Tomsk Polytechnic University, ²Institute of Strength Physics and Material Sciences SB RAS, Tomsk, Russia)
Comparison study of the cytotoxic effect of low-dimensional structures of aluminum oxide on the L 929 and Neuro-2a cells
9. **P. Gervas, A. Ivanova, N. Vasiliev, N. Cherdyntseva** (Tomsk Cancer Research Institute, Tomsk, Russia)
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10. **O. Gileva¹, T. Libik¹, K. Danilov²** (¹Perm State Medical University named after Academician E.A. Wagner of Minzdrav of Russia, ²Perm Regional Oncological Dispensary,

Perm, Russia)

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11. **M.K. Ibragimova^{1,2}, M.M. Tsyganov^{1,2}, N.V. Cherdyntseva^{1,2}, E.M. Slonimskaya¹, N.V. Litvyakov^{1,2}** (¹Tomsk Cancer Research Institute, ²National Research Tomsk State University, Tomsk, Russia)
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Effect of Plasma Immersion Ion Implantation in NiTi on its Interaction with Animal Subcutaneous Tissues

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