



4<sup>th</sup> International Conference “Current Trends of Cancer Theranostics”  
 3<sup>rd</sup> General Meeting of COST Action CM1403  
 July 1 - 5, 2018  
 Tony Resort, Trakai, Lithuania



## Conference Program

### SUNDAY (1<sup>st</sup> JULY)

**Venue:** Tony Resort, Trakai

Time	Event
16:00-17:00	Ground transportation from Vilnius Airport to Tony Resort and Slenis Hotels
17:00-19:30	Registration, Tony Resort Main Building
19:30-20:00	Meeting Point and CTCT-2018 Camp Opening
20:00-22:00	Get Together at Tony Resort Restaurant

### MONDAY (2<sup>nd</sup> JULY)

**Venue:** Miškas Hall, Tony Resort, Trakai.

Time	Presenter	Institution	Title of the Lecture
<b>8.00-16.00 Registration, Tony Resort Main Building</b>			
<b>Opening Ceremony</b>			
8:45 – 8:55	<b>Vladimir Sivakov</b>	CTCT Conferences President, Leibniz Institute of Photonic Technology, Germany	Welcome Address
8:55 – 9:00	<b>Edita Rudeliene</b>	Trakai Major, Lithuania	Welcome Address
9:00 – 9:05	<b>Hans-Heiner Gorris</b>	Chair of "The European Upconversion Network" CM1403, University Regensburg, Germany	Welcome Address
9:05 – 9:10	<b>Vladimir Lysenko</b>	MCSA-RISE “CARTHER” Coordinator, INSA Lyon, France	Welcome Address
<b>COST Action CM1403 SESSION I</b>			
<b>Chairman: Chia-Liang Cheng</b>			





9:10 – 9:45	<b>José García Solé,</b> <i>Keynote</i>	Fluorescence Imaging Group, Universidad Autónoma de Madrid, Spain	Advanced Tumor Detection and Diagnosis by <i>in vivo</i> Thermal Transient Nanothermometry
9:45 – 10:20	<b>Hong Zhang,</b> <i>Keynote</i>	University of Amsterdam, Amsterdam, The Netherlands	Upconversion Nanoplatfoms in Cancer Theranostics
10:20 – 10:45	<b>María J. Marín Altaba,</b> <i>Invited</i>	University of East Anglia, UK	Rose Bengal Functionalised Upconverting Nanoparticles for Photodynamic Therapy of Breast Cancer Cells
10:45-11:15	<b>Coffee Break</b>		
<b>COST Action CM1403 SESSION II</b>			
<b>Chairman: Olivier Tillement</b>			
11:15 – 11:40	<b>Emma Martín Rodríguez,</b> <i>Invited</i>	Autonomous University of Madrid, Spain	Overcoming Autofluorescence: Applications of Long Fluorescence Lifetime Nanoparticles for Deep Tissue Imaging
11:40 – 12:05	<b>Ting Cheng,</b> <i>Invited</i>	University of Quebec, Canada	Enhanced NIR-to-UV Upconversion Emission By Sub-20 nm LiYbF <sub>4</sub> :TM <sup>3+</sup> @LiYF <sub>4</sub> Core-Shell Structures: Tiny but Bright Future for Tumor Treatment
12:05 – 12:20	<b>Dirk H. Ortgies,</b> <i>Oral</i>	Instituto Ramón y Cajal de Investigación Sanitaria IRYCIS, University of Alcala, Spain	Multifunctional Hybrid Nanostructures as for Nanothermometry, Photothermal and Magnetic Hyperthermia Studies
12:20 – 12:35	<b>Christina Graf,</b> <i>Oral</i>	Hochschule Darmstadt, University of Applied Sciences, Darmstadt, Germany	Silica coating strategies and toxicity of silica coated upconversion nanoparticles
12:35 – 12:50	<b>Daniel Horak,</b> <i>Oral</i>	Institute of Macromolecular Chemistry, Czech Republic	Phthalocyanine-Conjugated Upconversion NaY(Gd)F <sub>4</sub> :Yb <sup>3+</sup> /Er <sup>3+</sup> @SiO <sub>2</sub> Nanospheres For NIR-Triggered Photodynamic Therapy And Imaging
12:50 – 13:05	<b>Andries Meijerink,</b> <i>Oral</i>	Debye Institute, Utrecht University, Utrecht, The	0.5



		Netherlands	
13:05 – 14:15	<b>Lunch</b>		
<b>COST Action CM1403 SESSION III</b>			
<b>Chairman: Sofia Dembski</b>			
14:15 – 14:50	<b>Srecko Gajovic,</b> <i>Keynote</i>	University of Zagreb School of Medicine, Croatian Institute for Brain Research, Croatia	Multimodal <i>in vivo</i> Imaging of the Mouse Brain, Theranostic Approaches and Stem Cell Applications
14:50 – 15:15	<b>Ricardas Rotomskis,</b> <i>Invited</i>	Biomedical Physics laboratory, National Cancer Institute, Vilnius, Lithuania	Multi-Photon Processes in Biomedicine: Towards Cancer Diagnostics and Therapy
15:15 – 15:40	<b>Sylvestre A. Bonnet,</b> <i>Invited</i>	Leiden University, Leiden Institute of Chemistry, The Netherlands	Triplet-Triplet Annihilation Upconverting Liposomes vs. Lanthanoid-Doped Upconverting Nanoparticles for the Activation of Ruthenium Anticancer Compounds: a Comparison
15:40 – 15:55	<b>Jorge Rubio Retama,</b> <i>Oral</i>	Department of Chemistry in Pharmaceutical Sciences, Spain	Oligonucleotide Sensor Based on DNA Target Catalyzed functionalization of Upconversion Nanoparticles
<b>COST Action CM1403 SESSION IV</b>			
<b>Chairman: Vladimir Sivakov and Hans-Heiner Gorris</b>			
15:55 – 18:30	<b>Poster Talks and Exhibition</b>		
19:00 – 21:00	<b>Networking Dinner, Tony Resort Main Building Restaurant</b>		
21:00 – 22:00	<b>“Lithuanian Summer” Concert, Amphitheatre</b>		



**TUESDAY (3<sup>rd</sup> JULY)**

8:30 – 14:00	<b>COST Management Committee (MC) Meeting</b>	<b>Venue:</b> Ežeras Hall, Tony Resort Main building
8:30 – 14:00	<b>COST Working Groups Meeting</b>	<b>Venue:</b> Meeting room, Tony Resort Main building

**Venue:** Miškas Hall, Tony Resort, Trakai.

Time	Presenter	Institution	Title of the Lecture
<b>8.30-12.00 Registration, Tony Resort Main Building</b>			
<b>SESSION V BIOIMAGING I</b>			
<b>Chairman: Alfred Vogel</b>			
9:00 – 9:35	<b>Daniel Razansky,</b> <i>Keynote</i>	Institute for Biological and Medical Imaging, Technical University of Munich and Helmholtz Center Munich, Germany	Novel Theranostic Applications of Multi-Spectral Optoacoustic Tomography
9:35 – 10:00	<b>Ilya V. Turchin,</b> <i>Invited</i>	Institute of Applied Physics of the Russian Academy of Science, Russia	Fluorescence and Optoacoustic Techniques for Photodynamic Therapy Monitoring
10:00 – 10:15	<b>Milan Kopecek,</b> <i>Oral</i>	FUJIFILM Visualsonics, The Netherlands	Multimodal Molecular Imaging in (pre) Clinical Research
10:15 – 10:30	<b>Mykola Isaiev,</b> <i>Oral</i>	Taras Shevchenko National University of Kyiv, Ukraine	Photoacoustic Technique for Cell Imaging
10:30 – 10:45	<b>Tim Devling,</b> <i>Oral</i>	iThera Medical GmbH, Germany	Multispectral Optoacoustic Tomography (MSOT): an in-vivo Imaging Tool for Visualisation of Delivery and Therapeutic Impact
10:45 – 11:00	<b>Alexander Shuster,</b> <i>Oral</i>	SOL instruments Ltd., Republic of Belarus	Coherent Anti-Stokes Raman Scattering Microscopy and its Life Science Applications
11:00-11:30	<b>Coffee Break</b>		



## SESSION VI BIOIMAGING II

**Chairman: Daniel Razansky**

11:30 – 12:05	<b>Alfred Vogel,</b> <i>Keynote</i>	Institute of Biomedical Optics, University of Lübeck, Germany	Cavitation and Multiphoton Microscopy
12:05 – 12:30	<b>Luigi Bonacina,</b> <i>Invited</i>	Applied Physics Department, University of Geneva, Switzerland	Dielectric Harmonic Nanoparticles for Cell Tracking in the NIR II Spectral Window
12:30 – 12:55	<b>Igor Meglinski,</b> <i>Invited</i>	Opto-Electronics and Measurement Techniques, University of Oulu, Finland	Perspectives of Hyperspectral Stokes Polarization Imaging For Cancer Detection And Screening Biological Tissue Abnormalities
12:55 – 13:20	<b>Christian Matthäus,</b> <i>Invited</i>	Leibniz Institute of Photonic Technology, Germany	Tracking Nanoparticles Within Cells and Tissue Using Raman Microscopic Imaging
13:20 – 13:35	<b>Tsanislava Genova- Hristova,</b> <i>Oral</i>	Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria	Fluorescence Methods for Detection of Gastrointestinal Tumours on Different Stage of Growth
13:35 – 13:50	<b>Valeriy Skryshevsky,</b> <i>Oral</i>	Taras Shevchenko National University of Kyiv, Ukraine	Silicon – Based Photoelectric Screen for Biological Cell Imaging
13:50 – 15:00	<b>Lunch</b>		
15:00 – 21:00	<b>Excursion to Trakai City, Joint Photo and Networking</b>		



**WEDNESDAY (4<sup>th</sup> JULY)**

**Venue:** Miškas Hall, Tony Resort, Trakai.

Time	Presenter	Institution	Title of the Lecture
<b>8.30-17.00 Registration, Tony Resort Main Building</b>			
<b>SESSION VII MATERIALS I,</b> <b>Chairman: Hong Zhang</b>			
9:00 – 9:35	<b>Olivier Tillement,</b> <i>Keynote</i>	Institute of Light and Mater, University Lyon 1, France	Gadolinium-Based Theranostic Particles: from Laboratories to First in Man Injection
9:35 – 10:10	<b>Chia-Liang Cheng,</b> <i>Keynote</i>	Department of Physics, National Dong Hwa University, Taiwan	Towards More Efficient Cancer Cell Identification and Nanoparticle Mediated Drug Delivery
10:10 – 10:35	<b>Jörn Probst,</b> <i>Invited</i>	Translational Center Regenerative Therapies TLZ-RT, Fraunhofer Institute for Silicate Research ISC, Germany	Bioresorbable Fibrous Drug Delivery Systems And 3D in-vitro Testing Models
10:35 – 11:00	<b>Ciro Chiappini,</b> <i>Invited</i>	Centre for Craniofacial and Regenerative Biology, King’s College London, United Kingdom	Engineering High-Aspect Ratio Nanomaterials to Direct Cell Fate
<b>11:00 – 11:30</b>	<b>Coffee Break</b>		
<b>SESSION VIII MATERIALS II,</b> <b>Chairman: Luigi Bonacina</b>			
11:30 – 12:05	<b>Maria Luisa García-Martín,</b> <i>Keynote</i>	BIONAND, Andalusian Centre for Nanomedicine and Biotechnology, Spain	Magnetic Nanoparticles for Molecular Magnetic Resonance Imaging (mMRI) of Tumors
12:05 – 12:20	<b>Virginijus Barzda,</b> <i>Oral</i>	Department of Physics, and Department of	Porphysome Nanoparticles: Superradiant Switchable Harmonophore Labels for Cell



		Chemical and Physical Sciences, University of Toronto, Canada	Imaging
12:20 – 12:35	<b>Sofia Dembski,</b> <i>Oral</i>	Translational Center Regenerative Therapies TLZ-RT, Fraunhofer Institute for Silicate Research Germany	Synthesis and Characterization of NIR Dye-Doped Nanoparticles for in vivo Medical Imaging
12:35 – 13:00	<b>Elena Perevedentseva,</b> <i>Invited</i>	National Dong Hwa University, Taiwan	Multifunctional Diamond Nanoparticles – the Ways to Integrate Multiple Functionalities and Bio-Medical Applications
13:00 – 13:15	<b>Wujun Xu,</b> <i>Oral</i>	Department of Applied Physics, University of Eastern Finland, Finland	Multifunctional Porous Silicon for a Safe and Effective Delivery of Doxorubicin
<b>13:15 – 14:30</b>	<b>Lunch</b>		
<b>SESSION IX APPLICATION,</b>			
<b>Chairman: Barbara Klajnert-Maculewicz and Una Riekstina</b>			
14:30 – 15:05	<b>Barbara Klajnert-Maculewicz,</b> <i>Keynote</i>	Department of General Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Poland	Dendrimers as Carriers of Anticancer Therapeutics
15:05 – 15:20	<b>Ilya Yakavets,</b> <i>Oral</i>	Centre de Recherche en Automatique de Nancy, CNRS, Université de Lorraine, France	Optimization of the Composition of Liposomal-based Hybrid Nanoparticles for mTHPC Delivery
15:20 – 15:45	<b>Una Riekstina,</b> <i>Invited</i>	Faculty of Medicine, University of Latvia, Latvia	Nanoengineered Mesenchymal Stem Cells: Vehicles for Targeted Drug Delivery and Tumor Visualization
15:45 – 16:00	<b>Karolis Leonavicius,</b> <i>Oral</i>	Biotechnology Institute, Life Science Centre,	Multi-Omic Complex Tissue Analysis at Single Cell Resolution





		Vilnius University, Lithuania	
16:00 – 16:15	<b>Alain Géloën,</b> <i>Oral</i>	University of Lyon, CarMeN Laboratory, France	Does Refractive Index Keep Its Promises for the Measure of Nanoparticle Concentrations Inside Cells?
16:15 – 16:30	<b>Lubov Shimolina,</b> <i>Oral</i>	Institute of Biomedical Technologies, Privolzhsky Research Medical University, Russia	Luminescence Lifetime Imaging of Tumor Spheroid Heterogeneity
16:30 – 17:00	<b>Coffee Break and Discussion</b>		
19:00 – 20:00	<b>“Forest Vision” Concert, Amphitheatre</b>		
19:00 – 21:00	<b>Conference Banquet, Amphitheatre</b>		

### THURSDAY (5<sup>th</sup> JULY)

**Venue:** Tony Resort, Trakai

Time	Event	
9:00 – 15:00	<b>MCSA_RICE “CARTHER” Meeting</b>	<b>Venue:</b> Meeting room, Tony Resort Main building
10:00-11:00	Departure to Vilnius Airport or to National Cancer Institute/Biomedical Physics Laboratory (Head Prof. Ricardas Rotomskis)  <i><u>If you have interest to visit National Cancer Institute, Biomedical Physics Laboratory please insert your name to the visitor list at CTCT-2018 registration desk</u></i>	





## POSTER SESSION

Tuesday (2<sup>nd</sup> July)  
16:05 – 18:30

P 01	<u>D. Baziulyte-Paulaviciene</u> , G. Jarockyte, R. Rotomskis, V. Karabanovas, S. Sakirzanovas	MULTIFUNCTIONAL INORGANIC FLUORIDE CORE-SHELL UPCONVERTING NANOPARTICLES AS THERANOSTIC AGENT
P 02	<u>L. J. U. Castano</u> , H. Zhao, R. Cisek, V. Barzda	WIDE-FIELD SECOND HARMONIC GENERATION MICROSCOPY OF BIOLOGICAL TISSUES
P 03	<u>C. Cressoni</u> , G. Lucchini, J. Franchini, P. Cortelletti, A. Speghini	LIGHT-ACTIVATED ORGANIC- INORGANIC NANOPARTICLE FOR NANOMEDICINE
P 04	<u>D. Dapkute</u> , S. Steponkiene, V. Karabanovas, R. Rotomskis	MESENCHYMAL STEM CELL- MEDIATED THERANOSTIC DELIVERY SYSTEM
P 05	<u>P. Dimitrijevs</u> , A. Vezane, M. Rucins, I. Timofejeva, B. Vigante, Kl. Pajuste, M. Plotniece, A. Sobolev, K. Pajuste, T. Kozlovska, A. Plotniece	1,4-DIHYDROPYRIDINE BASED GENE DELIVERY AGENTS - RELATIONSHIPS OF SELF- ASSEMBLING AND PHYSICOCHEMICAL PROPERTIES
P 06	<u>N. L. Estebanez Bloem</u> , M. Gonzalez-Bejar, J. Perez- Prieto	ACID RESISTANCE OF ORGANIC CAPPED-UPCONVERSION NANOPARTICLES
P 07	<u>A. Golaraei</u> , V. Raja, M. K. Akens, B. C. Wilson, V. Barzda	INVESTIGATING THE EFFECT OF PHOTODYNAMIC THERAPY IN BONE FORMATION USING SECOND- HARMONIC GENERATION MICROSCOPY
P 08	M. J. Mickert, Z. Farka, A. Hlavaček, P. Skladal, <u>H. H. Gorris</u>	UPCONVERSION-LINKED IMMUNOASSAY FOR DETECTING CANCER MARKERS AT THE SINGLE MOLECULE LEVEL
P 09	<u>D. Ivanov</u> , E. Borisova, Ts. Genova, D. Nazarova, L. Nedelchev	TISSUE POLARIMETRY OF HISTOLOGICAL SAMPLES FOR HEALTHY AND TUMOR TISSUE DISCRIMINATION



P 10	<u>G. Jarockyte</u> , D. Dapkute, V. Karabanovas, J. V. Daugmaudis, F. Ivanauskas, R. Rotomskis	3D CELLULAR SPHEROIDS AS TOOLS FOR UNDERSTANDING CARBOXYLATED QUANTUM DOT BEHAVIOR IN TUMORS
P 11	<u>D. J. Jovanović</u> , T. V. Gavrilović, S. D. Dolić, K. Smits, L. Labrador-Páez, J. García-Solé, D. Jaque, M. D. Dramićanin	LUMINESCENT GdVO <sub>4</sub> -BASED UPCONVERTING NANOPARTICLES: PREPARATION AND APPLICATIONS
P 12	<u>E. Kavetsou</u> , A. Katopodi, L. Argyri, E. Pontiki, D. Hadjipavlou-Litina, A. Chroni, A. Detsi	NOVEL MULTI-SUBSTITUTED COUMARIN ANALOGUES: SYNTHESIS AND BIOACTIVITY PROFILE
P 13	<u>M. S. Meijer</u> , P. A. Rojas-Gutierrez, D. Busko, I. A. Howard, B. S. Richards, F. Frenzel, Ch. Würth, U. Resch-Genger, A. Turshatov, J. A. Capobianco, S. Bonnet	UPCONVERSION QUANTUM YIELDS OF BLUE-EMITTING LIYF <sub>4</sub> :YB <sup>3+</sup> ,TM <sup>3+</sup> UPCONVERTING NANOPARTICLES: A MULTICENTER COMPARATIVE STUDY
P 14	<u>I. Mikalajunaite</u> , G. Jarockyte, R. Rotomskis	ACCUMULATION OF FLUORESCENCE MOLECULES IN 3D SPHEROID CELL CULTURES
P 15	<u>I. Mikalauskaite</u> , G. Pleckaityte, K. Paulauskaite, J. Grigorjevaite, A. Katelnikovas, A. Beganskienė	IMPACT ON STRUCTURE AND PROPERTIES OF LUMINESCENCE WHEN SUBSTITUTING Na <sup>+</sup> IN NaGdF <sub>4</sub> WITH ALKALI IONS
P 16	<u>M. M. Natile</u> , M. S. Meijer, S. Bonnet	TOWARDS NIR LIGHT PHOTO-ACTIVATION OF RUTHENIUM ANTICANCER PRODRUGS
P 17	R. Afonso, C. Menezes, S. Balabhadra, F. Campos, M. L. Debasu, L. D. Carlos, <u>H. Oliveira</u>	CYTOTOXIC EFFECTS OF SrF <sub>2</sub> :Yb/Er UPCONVERTING NANOPARTICLES TO MACROPHAGE CELLS
P 18	<u>I. Panas</u> , M. Saleh, F. Frenzel, U. Resch-Genger, A. Demchenko	PROSPECTIVE APPROACH FOR UCNP SENSITIZATION WITH NOVEL NIR EMISSIVE CYANINE
P 19	<u>I. Pauraite</u> , G. Jarockyte, U. Statkute, V. Karabanovas, R. Rotomskis	THE EFFECT OF FRACTIONATED IONIZING RADIATION ON THE ACCUMULATION OF THE QD IN MCF-7 HUMAN BREAST CANCER CELLS
P 20	<u>M. Pleckaitis</u> , G. Kundrotas, M. Juraleviciute, S. Steponkiene,	IMAGING OF EXTRACELLULAR STRUCTURES OF HUMAN



	J. Krasko, Z. Gudleviciene, V. Karabanovas, R. Rotomskis	MESENCHYMAL STEM CELL WITH CARBOXYLATED QUANTUM DOTS BY CONFOCAL AND FLIM MICROSCOPY
P 21	G. Pleckaityte, I. Mikalauskaite, A. Katelnikovas, A. Beganskiene	ENERGY TRANSFER IN NaGdF <sub>4</sub> :Nd <sup>3+</sup> , Yb <sup>3+</sup> HEXAGONAL NANOPARTICLES UNDER 808 nm LASER EXCITATION
P 22	O. Dukhno, F. Przybilla, V. Muhr, M. Buchner, Th. Hirsch, Y. Mely	TIME-DEPENDENT LUMINESCENCE LOSS OF INDIVIDUAL UPCONVERSION NANOPARTICLES UPON DILUTION IN AQUEOUS SOLUTIONS
P 23	S. N. Shevchenko, O. Zukovskaja, A. A. Kudryavtsev, D. Cialla- May, K. Weber, J. Popp, V. Sivakov, L. A. Osminkina	SURFACE - ENHANCED RAMAN SCATTERING ON GOLD NANOPARTICLES / POROUS SILICON FOR BIOSENSOR APPLICATIONS
P 24	E. Voronovic, G. Jarockyte, A. Skripka, V. Karabanovas, F. Vetrone, R. Rotomskis	IMPACT OF VARIOUS COATINGS ON OPTICAL PROPERTIES AND ACCUMULATION OF UPCONVERTING NANOPARTICLES IN CANCER CELLS
P 25	C. Caro, M.L. García-Martín, M. Pernia-Leal	MANGANESE-BASED NANOGELS AS PH SWITCHES FOR MAGNETIC RESONANCE IMAGING
P 26	A. Cumont, R. Zhang, H. Ye	DIAMOND BASED PLATFORM FOR ANTIMICROBIAL RESISTANCE APPLICATION