



80<sup>th</sup> International Scientific  
Conference of the  
University of Latvia 2022

Atomic physics, optical technologies  
and medical physics/ Atomfizika,  
optiskās tehnoloģijas un medicīnas  
fizika

Thursday, 10-11 February 2022, 10.00 AM,  
online in ZOOM

10.02.2022.

Programme

9.55–10.00	Introduction	
Vadītājs/Chair: Assoc.Prof. Dr Roman Viter		
10.00–10.20	<p><b>Prof Arunas RAMANAVICIUS,</b> <i>Vilnius University</i></p> <p><i>R.Boguzaitė, E.Brazys, Chen Chen-Fu, M.Drobysh, S.Ramanavičius, V.Ratautaite, U.Samukaite-Bubniene, R.Viter</i></p>	“Conducting polymers in the design of affinity sensors”
10.20–10.40	<p><b>Dr Viktoriia FEDORENKO</b> <i>University of Latvia, Institute of Atomic Physics and Spectroscopy</i></p>	“Application of Polydopamine Functionalized Zinc Oxide for Aflatoxin B1 Sensor Design”
10.40–11.00	<p><b>Dr Maksym POGORIELOV</b> <i>University of Latvia, Institute of Atomic Physics and Spectroscopy</i></p>	“ZnO-Au-mAb platform development for Listeria monocytogenes detection”
11.00–11.20	<p><b>Dr Roman VITER</b> <i>University of Latvia, Institute of Atomic Physics and Spectroscopy</i></p>	“ZnO-Schiff base nanostructures as optical chemical sensors for metal ion detection”
11.20-11.40	<p><b>Simonas RAMANAVIČIUS,</b> <i>State research institute Center for Physical Sciences and</i></p>	“Formation of titanium oxide and suboxide nanostructures with favourable properties for biomedical applications”

	<p><i>Technology</i></p> <p><i>A.Ramanavičius, A.Jagminas</i></p>	
<b>11.40-12.00</b>	<p><b><i>Irina TEPLIAKOVA,</i></b> <i>Odessa I.I. Mechnikov National University</i></p>	<p><b>“Photoluminescence properties of ZnSe:Al, ZnSe:Cu nanoparticles obtained by chemical synthesis”</b></p>
<b>12.00–12.40</b>	<b>Coffee break, discussions</b>	
<b>Vadītājs/Chair: Dr Maksym POGORIELOV</b>		
<b>12.40–13.00</b>	<p><b><i>Simonas RAMANAVIČIUS,</i></b> <i>State research institute Center for Physical Sciences and Technology</i></p> <p><i>S.Adomavičiute- Grabusoves, A.Popov, D.Selskas, V.Šablinskas, O.Gogotsi, A.Ramanavičius, R.Viter</i></p>	<p><b>“Application of MXenes (Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub>) structures in adsorption and detection of organic molecules”</b></p>
<b>13.00–13.20</b>	<p><b><i>Mindaugas TAMOSIUNAS,</i></b> <i>University of Latvia, Institute of Atomic Physics and Spectroscopy</i></p>	<p><b>“Viability assessment of C. albicans biofilms by laser speckle contrast imaging following sonosensitization”</b></p>
<b>13.20–13.40</b>	<p><b><i>Oksana SULAIEVA,</i></b> <i>LLC CSD Health Care</i></p> <p><i>O.Dudin</i></p>	<p><b>“A multidisciplinary approach drives laboratory medicine Progress”</b></p>
<b>13.40–14.00</b>	<p><b><i>Olesa TVEREZOVSKA,</i></b> <i>Biomedical Research Centre/ Medical Institute, Sumy State University</i></p> <p><i>V.Holubnycha</i></p>	<p><b>“Influnence of autoclaving on antibacterial properties of silver nanoparticles’</b></p>
<b>14.00- 14.20</b>	<p><b><i>Volodymyr BURANYCH,</i></b> <i>Sumy State University</i></p>	<p><b>“Ag-doped 3D scaffolds modification for osteogenic applications and tissue engineering”</b></p>
<b>14.20-14.40</b>	<p><b><i>Yevheniia HUSAK,</i></b> <i>Silesian University of Technology, Sumy State University</i></p> <p><i>J.Pykacz, J.Olszaniicki, A.Ossowska,</i></p>	<p><b>“Silicate-, fluoride- enriched oxide coatings on magnesium for orthopaedic applications”</b></p>

	<i>M.Pogorielov,</i>	
<b>14.40-15.00</b>	<b>Viktorija KORNIENKO,</b> <i>Sumy State University</i>  <i>J.Varava, K.Diedkova,</i> <i>Y.Husak, Y.Samokhin</i>	“Chitosan electrospun nanofibers: surface morphology and hydrophobicity after different crosslinking”
<b>15.00-15.10</b>	<b>Conclusions, discussions</b>	

**11.02.2022.**

## Programma

<b>9.55-10.00</b>	<b>Ievadvārdi un atklāšana</b>	
<b>Vadītāja: Dr. Rita Veilande</b>		
<b>10.00-10.15</b>	<b>Dr Imants BĒRSONS,</b> <i>R.Veilande, O,Balcers</i>	“Fotonu atstarošana un laušana / Reflection and refraction of photons”
<b>10.15-10.30</b>	<b>Dr.Teodora KIROVA,</b> <i>J.Tamuliene</i>	“Theoretical and numerical studies of the impact of the magnetic field of radiation on amino acids”
<b>10.30-10.45</b>	<b>Dr Ojārs BALCERS,</b> <i>R.Veilande</i>	“Ergokalciferola un kolekalciferola modelētie un nomērītie spektri / Calculated and measured spectra of ergocalciferol and cholecalciferol”
<b>10.45-11.00</b>	<b>Zanda BRIĶE,</b> <i>R.Veilande, M.Strazds,</i> <i>K.Rancāne, A.Ābola,</i> <i>A.Skudra</i>	“Dzīvsudraba piesārņojums melno stārķu izkārnījumos”
<b>11.00-11.15</b>	<b>Anda ĀBOLA,</b> <i>M.Starzs, R.Veilande</i>	“Dzīvsudraba piesārņojuma novērtēšana, izmantojot melno stārķu olu čaumalas”
<b>11.15-11.30</b>	<b>Dr. Nataļja ZORINA,</b> <i>A.Skudra, G.Rēvalde,</i> <i>Z.Gavare</i>	“As, Hg un Tl augstfrekvences bezelektrodu lampu salīdzinājums vides piesārņojuma noteikšanai”
<b>11.30-12.30</b>	<b>Kafijas pauze attālināti</b>	
<b>Vadītājs: Asoc.prof. Dr.Alnis Jānis</b>		
<b>12.30-12.45</b>	<b>Dr. Uldis BERZIŅŠ,</b> <i>M.Tamanis, A.Ūbelis, A.</i> <i>Bžiškjans</i>	“Infrasarkano spektru pētījumi induktīvi saistītās plazmas spektrālo līniju avotos”
<b>12.45-13.00</b>	<b>Artūrs CINIŅŠ,</b> <i>N.Bezuglov, K.Mičulis</i>	“”Fast” and ”slow” chameleon dressed states in Autler-Townes spectra of alkali atoms”
<b>13.00-13.15</b>	<b>Dr.Kaspars MIČULIS,</b> <i>N.Bezuglov, E.A. Viktorov,</i> <i>A.Pastor, M.S. Dimitrijevic,</i> <i>V.A.Sreckovics</i>	“Collapse of Xe polarized atomic states in magnetic fields”
<b>13.15-13.30</b>	<b>Edgars VASIĻJEVS,</b>	“Infrared thermography hotspot mapping patterns of the

	<i>S.Kazūne, Z.Marcinkevičs, A.Grabovskis, A.Caica</i>	<b>thigh in septic shock patients”</b>
<b>13.30- 13.45</b>	<b><i>Emilija Vija PLORIŅA,</i></b> <i>I.Ļihačova, A.Rudzītis, A.Ļihačovs, E.Syundyukov, D.Bļizņuks</i>	<b>“Biophotonic techniques for rare skin disease assessment”</b>
<b>13.45-14.00</b>	<b><i>Inga BRICE,</i></b> <i>A.Sedulis, J.Alnis,</i>	<b>“Pārskata ziņojums par ERAF projekta Nr. 1.1.1.1/18/A/155 “Uz čukstošās galerijas modas mikrorezonatora bāzes veidota optisko frekvenču ķemmes ģenerators izstrāde un tā pielietojumi telekomunikacijās” īstenošanu”</b>
<b>14.00-14.15</b>	<b><i>Lāse MĪLGRĀVE,</i></b> <i>P.K.Reinis, I.Brice, J.Alnis, A.Atvars</i>	<b>“Selectivity of glycerol droplet microresonator humidity Sensor”</b>
<b>14.15-14.20</b>	<b>Noslēgums, diskusijas</b>	