

APSTIPRINU  
LU CFI direktors

/A.Šternbergs/  
Rīgā, 2007.g. 20 .novembrī

**LU Cietvielu fizikas institūta  
(LU aģentūras)  
2006.gada publiskais pārskats**

## **1. LU CIETVIELU FIZIKAS INSTITŪTA DARBĪBAS ILGTERMINĀ UN VIDĒJA TERMIŅA MĒRĶI**

Izveidot LU CFI par vadošo pētniecības centru funkcionālu materiālu un nanotehnoloģiju jomā Latvijā un atzītu pētniecisko iestādi Eiropas Zinātniskajā telpā, kur augsta līmeņa zinātniskā darbība (gan fundamentālie pētījumi, gan arī pētījumu rezultātu komercializācija) ir organiski apvienota ar augstas kvalitātes akadēmiskajām un profesionālajām studijām.

Mērķi analizēti „LU CFI vidējā termiņa darbības stratēģijā” – dokumentā, kas ir apstiprināts LU Senātā (skat. 1.pielikumu)

## **2. GALVENĀS FUNKCIJAS UN UZDEVUMI**

Galvenie uzdevumi ir:

- Zinātniskie pētījumi un to finansējuma ieguve;
- Studiju darbs;
- Akadēmiskās darbības rezultivitāte (publikācijas, patenti, monogrāfijas, speciālisti);
- Pētījumu rezultātu komercializācija;
- Zinātnes komunikācija;
- Personāla attīstība;
- Zinātniskās infrastruktūras attīstība;
- Darbinieku sociālais nodrošinājums;
- Līdzdalība LU institūcijās (skat. Pārvaldes līgumu, kas noslēgts ar LU 2007.gada 2.janvārī – 2.pielikums)

## **3.JURIDISKAIS STATUSS UN STRUKTŪRA**

Latvijas Universitātes aģentūra „LU Cietvielu fizikas institūts” ir izveidots ar Ministru kabineta rīkojumu Nr. 248 12.04.2006., reorganizējot Izglītības un zinātnes ministrijas pārziņā esošus valsts bezpeļņas zinātniskos uzņēmumus (institūtus). LU Cietvielu fizikas institūts atrodas LU pārraudzībā un darbojas saskaņā ar Zinātnes likumu un Publisko aģentūru likumu.

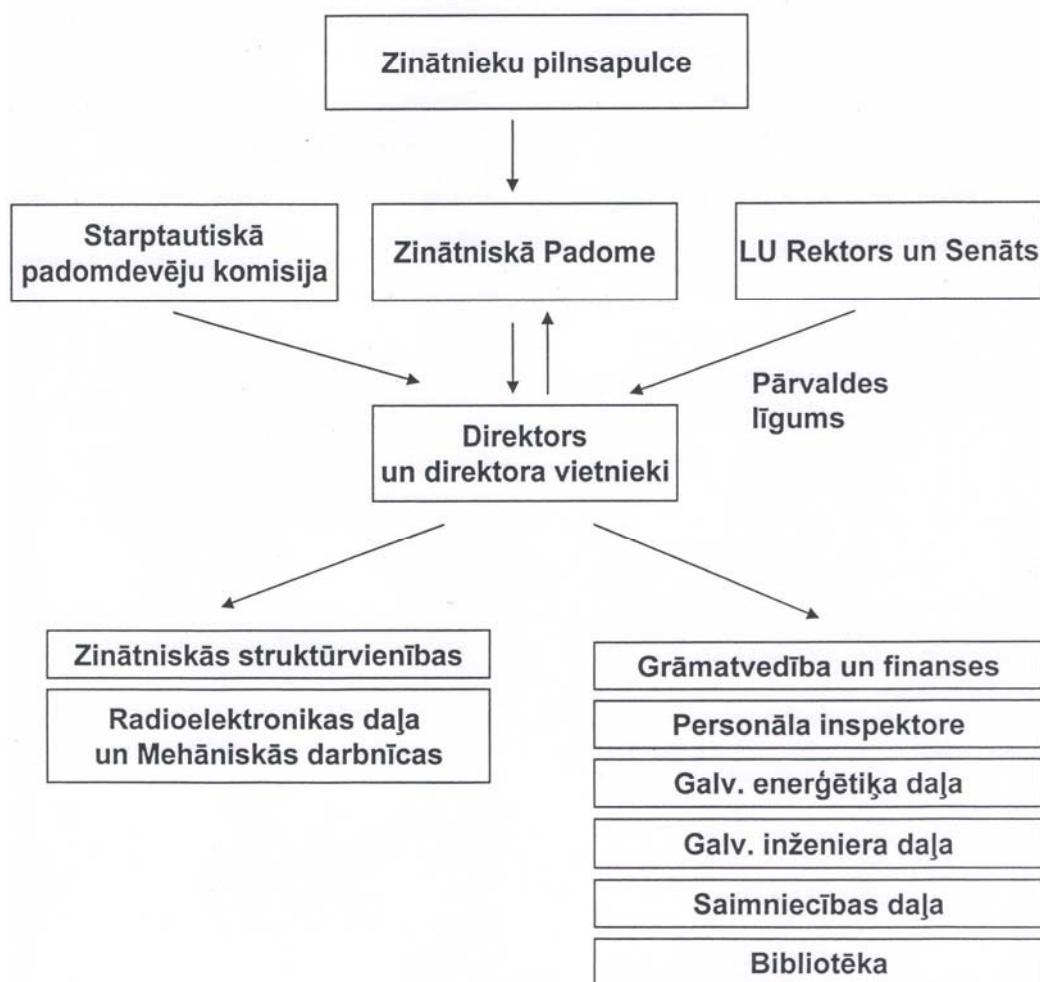
LU Cietvielu fizikas institūta vadības struktūra ir pievienota.

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2006.gada 15.maijā

## LU CIETVIELU FIZIKAS INSTITŪTA VADĪBAS STRUKTŪRA



## **4. ZIŅAS PAR ZINĀTNISKĀS DARBĪBAS REZULTĀTIEM 2006.GADĀ**

### **4.1. Īstenotie pētījumu projekti un to rezultāti**

**4.1.1. Īstenoto starptautisko projektu (tai skaitā Eiropas Savienības Ietvarprogrammu izcilības tīkli (*network of excellence*), integrētie projekti vai mērķorientētie zinātniskie projekti (*STREP, EUREKA, COST, INTAS, NATO* projekti) skaits un akronīms vai nosaukums.**

#### **EK 5.un 6.Ietvaru programmas projekti 2006.gadā: 6**

1. STRP project „Nanoscale mapping and surface structural modification by joined use of x-ray microbeams and tip assisted local defection” X-TIP;
2. Collective Research Project „Removal of Hazardous Substances in Electronics”;
3. Network of Excellence „Multifunction and Integrated Piezoelectric Devices”;
4. EURATOM project „Investigation of metal ions in fusion plasmas using emission spectroscopy”;
5. EURATOM project „Development of prototipe radiation hard capacitance bolometer assamble based on ferroelectric materials”;
6. EURATOM project „Stochasticization of Magnetic Fields and Magnetic Reconnection”;

#### **COST projekti:**

1. P8; Materials and Systems for Optical Data Storage and Processing;
2. D18; Lanthanide Chemistry for Diagnosis and Therapy.

#### **Bilaterālā sadarbība:**

Latvijas – Vācijas sadarbības projekts:

1. Akkumuliertes Lumineszens Dosimetr

#### **Taivānas – Latvijas – Lietuvas sadarbības projekts:**

1. Materials Research on Wide Band Group III Nitride Compounds for Advanced Light Emitters.

#### **Latvijas – Francijas Osmozes programmas sadarbības projekti:**

1. Molekulāro materiālu ierīču elektriskās īpašības un to izmantošana gāzes sensoriem piesārņojuma noteikšanai
2. Frekvenču dubultošanai piemērotu organisko molekulu optiskā orientēšana plānās polimēru kārtīnās.

#### **Latvijas – ASV sadarbības projekts:**

1. Nanostructured and crystalline ZnO and BN for light – emitting semiconduction applications

### **4.1.2. Valsts pētījumu programmu projekti, kuru īstenošanā piedalījusies zinātniskā institūcija.**

Valsts pētījumu programma **materiālzinātnē** „Modernu funkcionālu materiālu mikroelektronikai, nanoelektronikai, fotonikai, biomedicīnai un konstruktīvo kompozītu, kā arī atbilstošo tehnoloģiju izstrāde”

LU CFI ir vadošā iestāde programmas izstrādē. 3 apakšprojekti no 6 tiek izstrādāti LU CFI:

1. „Perspektīvie neorganiskie materiāli fotonikai un enerģētikai”, vad. L.Skuja;
2. „Perspektīvie neorganiskie materiāli optoelektronikai un mikroelektronikai un modernās metodes struktūras pētījumos”, vad. M.Spriņģis
3. „Materiāli fotonikai un nanoelektronikai balstīti uz jauniem funkcionāliem savienojumiem”, vad. I.Muzikante

Valsts pētījumu programma **enerģētikā**. LU CFI ir vadošā iestāde programmas 3.projekta izstrādē par ūdeņraža enerģētiku, vad. J.Kleperis

#### **4.1.3. Latvijas Zinātnes padomes finansēto projektu skaits: 25**

- Bērziņa B.  
05.1722 Gaismas izraisītie procesi platzonu nitrīdos un līdzīgos materiālos
- Bērziņš J.  
05.1724 Eksperimentāli un teorētiski kodolu struktūras pētījumi normālos un ekstremālos apstākļos
- Kleperis J.  
05.1712 Olfaktometrijas fizikālie principi un sensoru mikrosistēmas tās modelēšanai
- Kuzmins A.  
05.1717 Modernā spektroskopiskā pieeja nanomateriālu struktūras pētījumos
- Kuzovkovs V.  
05.1704 Nelīdzsvaroto procesu kinētika nesakārtotās cietvielās
- Lācis I.  
04.1294 Stimulu un acu kustību ietekme uz redzes uztveri
- Maniks J.  
05.1705 Robežvirsmu efekti nanostrukturētu materiālu mehāniskajās īpašībās
- Millers D.  
05.1720 Defekti un elektroniskie ierosinājumi kompleksos oksīdos
- Mironova-  
Ulmane N.  
05.1718 Dzelzs grupas jonu pētījumi neorganiskos un organiskos savienojumos ar optiskām un EPR metodēm
- Ozols A.  
05.1719 Hologrāfiskais ieraksts un viļņu frontes inversija materiālos ar kompleksu fotorefrakciju
- Petrovs A.  
05.1711 Ultradisperso (mazo) cietvielu daļiņu magnētisko īpašību pētījumi
- Purāns J.  
05.1714 Rentgena absorbcijas spektroskopija, pārvarot pikometru barjeru
- Riekstiņa D.  
05.1723 Pielietojamās kodolfizikas izmantošana apkārtējās vides un dažu fizikālu procesu pētījumos
- Rogulis U.  
05.1709 Magnētisko rezonanšu spektroskopija: defektu struktūra vairākkomponentu fluorīdos
- Skuja L.  
05.1715 Optisko īpašību, to optimizācijas un izmaiņas mehānismu pētījumi stiklveida materiālos ultravioletajai optikai un šķiedru gaismas vadiem

- Šternbergs A.  
05.1864 Sintēzes procesu optimizācija, fizikālās īpašības un polarizācijas procesu mikromehānismi segnetoelektriķos ar dažādu struktūras sakārtotības pakāpi
- Tāle I.  
05.1716 Defektu optiskā un termoaktivācijas spektroskopija platzonu aktivētos fluorīdu kristālos
- Tambergs J.  
05.1707 Simetrijas un haosa koncepciju izmantošana kvantu sistēmu pētījumos
- Teteris J.  
05.1721 Amorfie halkogenīdi kā hologrāfiskā ieraksta vide informācijai ar lielu blīvumu
- Truhins A.  
05.1710 Lokalizētie un delokalizētie stāvokļi optiskos stiklos un stiklveidojošos kristālos ar plato aizliegtu zonu
- Lācis I.  
Stimulu un acu kustību ietekme uz redzes uztveri
- Krūmiņš A.  
Funkcionāli materiāli un nanotehnoloģijas mikroelektronikai un fotonikai
- Šternbergs A.  
Nanomateriāli un nanotehnoloģijas

## 4.2. ZINĀTNISKĀS PUBLIKĀCIJAS

### 4.2.1. Zinātniskajā periodikā norādītu, zinātniskajā literatūrā un starptautiski pieejamās datu bāzes citētu zinātnisko publikāciju skaits un nosaukumi (SCI): 101

1. Yu.F. Zhukovskii, P. Balaya, E.A. Kotomin, and J. Maier, Evidence for interfacial-storage anomaly in nanocomposites for lithium batteries from first-principles simulations. – *Physical Review Letters*, 2006, **96**, 058302 (p. 1-4).
2. J. Carrasco, F. Illas, N. Lopez, E.A. Kotomin, Yu.F. Zhukovskii, R.A. Evarestov, Yu.A. Mastrikov, S. Piskunov, and J. Maier, First principles calculations of atomic and electronic structure of *F*-center in bulk and on the (001) surface of SrTiO<sub>3</sub>. – *Physical Review B*, 2006, **73**, 064106 (p. 1-11).
3. V. Kashcheyevs, A. Aharony, and O. Entin-Wohlman, Applicability of the equations-of-motion technique for quantum dots. – *Physical Review B*, 2006, **73**, 125338 (p. 1-15).
4. D. Fuks, E.A. Kotomin, Yu.F. Zhukovskii, and A.M. Stoneham, Size and shape of three-dimensional Cu clusters on a MgO(001) substrate: Combined *ab initio* and thermodynamic approach. – *Physical Review B*, 2006, **74**, 115418 (p. 1-6).
5. D. Fuks, Yu.F. Zhukovskii, E.A. Kotomin, and D.E. Ellis, Metal film growth on regular and defective MgO(001) surface: A comparative *ab initio* simulation and thermodynamic study. – *Surface Science*, 2006, **600**, p. L99-L104.
6. S. Krischok, P. Stracke, O. Hüfft, V. Kempter, Yu.F. Zhukovskii, and E.A. Kotomin, A comparative analysis of electron spectroscopy and first principles studies on Cu(Pd) adsorption on MgO. – *Surface Science*, 2006, **600**, p. 3815-3820.
7. J. Jamnik, J.R. Kalnin, E.A. Kotomin, and J. Maier, Generalised Maxwell-Garnett equation: application to electrical and chemical transport. – *Physical Chemistry and Chemical Physics*, 2006, **8**, p. 1310-1314.
8. R.A. Evarestov, E.A. Kotomin, and Yu.F. Zhukovskii, DFT study of a single *F*-center in cubic SrTiO<sub>3</sub> perovskite. – *International Journal of Quantum Chemistry*, 2006, **106**, p. 2173-2183.
9. E.E. Tornau, V. Petrauskas, and G. Zvejnieks, Surface phase transitions at O and CO catalytic reaction on Pd(111). – *Catalysis Today*, **116**, p. 62-68.
10. E. Heifets, E.A. Kotomin, and V.A. Trepakov, Calculations for antiferrodistortive phase of SrTiO<sub>3</sub> perovskite: hybrid density functional study. – *Journal of Physics: Condensed Matter*, 2006, **18**, p. 4845-4851.

11. Yu.F. Zhukovskii, A.I. Popov, C. Balasubramanian, and S. Bellucci, Structural and electronic properties of single-walled AlN nanotubes of different chiralities and sizes. – *Journal of Physics: Condensed Matter*, 2006, **18**, p. S2045-S2054.
12. S. Bellucci, C. Balasubramanian, G. Cinque, A. Marcelli, M. Cestelli Guidi, M. Piccinini, A. I. Popov, A. Soldatov, and P. Onorato, Characterization of  $\square$ ateriāls nitride nanostructures by XANES and FTIR Spectroscopies with Synchrotron Radiation. – *Journal of Physics: Condensed Matter*, 2006, **18**, p. S2095-S2104.
13. R.I. Eglitis, H. Shi, and G. Borstel, *Ab initio* calculations of the BaF<sub>2</sub> bulk and surface F centres – *Journal of Physics: Condensed Matter*, 2006, **18**, p. 8367-8381.
14. V.N. Kuzovkov and W. von Niessen, Random walk approach to the analytic solution of random systems with multiplicative noise – The Anderson localization problem. – *Physica A*, 2006, **369**, p. 251-265.
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20. Z.C. Ioannidis, O. Dumrajs, I.G. Tigelis, Eigenvalues and Ohmic losses in coaxial gyrotron cavity. – *IEEE Transactions on Plasma Science*, 2006, **34**, p. 1516-1522.
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24. D. Gryaznov, J. Fleig, and J. Maier, Numerical study of grain boundary diffusion in nanocrystalline materials including blocking space charges. – *Solid State Ionics*, 2006, **177**, p. 1583-1586.
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26. P. Galinetto, F. Rossella, G. Samoggia, V.A. Trepakov, E.A. Kotomin, E. Heifets, P. Markovin, and L. Jastrabik, Structural phase transition and photo-charge carrier transport in SrTiO<sub>3</sub>. – *Ferroelectrics*, 2006, **337**, p. 179-188.
27. G. Zvejnieks, V.N. Kuzovkov, V. Petruskas, and E.E. Tornau, Modelling of phase transitions and reaction at CO adsorption on oxygen precovered Pd (111). – *Applied Surface Science*, 2006, **252**, p. 5395-5398.
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41. I. Bucenieks , R.Krishbergs, E.Platacis, G. Lipsbergs, A.Shishko, A.Zik, F.Muktepavela. Investigation of corrosion phenomena in EUROFER steel in Pb-17Li stationary flow exposed to a magnetic field. *J. Magnetohydrodynamics*, 2006, vol.42, No.2-3, pp. 237-251.
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#### **4.2.3. Zinātniskās institūcijas izdotu starptautiski recenzētu periodisko zinātnisko izdevumu skaits un nosaukumi: 2**

- Abstracts. 2<sup>nd</sup> Latvian conference „Functional mterials and nanotechnologies”, Riga, p.111, 2006.
- Book of Abstracts. „10th European conference on organised films”, Riga, p. 180, 2006.

#### **4.2.4. Latvijas Zinātnes padomes atzītos zinātniskajos izdevumos publicēto zinātnisko publikāciju skaits un nosaukumi: 132**

Publikāciju nosaukumus skatīt punktā 4.2.1. un 4.2.2.

### **4.3. DALĪBA ZINĀTNISKĀS KONFERENCĒS**

#### **The workshop on Interactions and Dynamics in Low Dimensional Quantum Systems (Rehovot, Israel, January, 2006).**

V. Kashcheyevs, A. Aharony, and O. Entin-Wohlman, "Applicability of the equations-of-motions technique for quantum dots".

#### **II. 13<sup>th</sup> International School on Microwave Electronics and Radiophysics (Saratov, Russia, January-February, 2006).**

O. Dumbrajs, "Stochastic processes in gyrotrons". Abstracts: p. 77-78.

#### **III. 2<sup>nd</sup> Latvian conference "Functional materials and nanotechnologies" (Riga, Latvia, March, 2006).**

1. C. Balasubramanian, S. Bellucci, A. Ivanov, A.I. Popov, H. Schober, I. Karbovnik, N. Krutyak, and V. Savchyn, "Nano structures of aluminium nitride: synthesis, characterization and applications". Abstracts: p. 10.

2. E.A. Kotomin, Yu.F. Zhukovskii, and Yu. Mastrikov, "First-principles modeling of surfaces and reactivity of oxide- and  $\text{ABO}_3$  perovskite surfaces". Abstracts: p. 33.
3. N. Zaporina, V.N. Timofeev, D. Bocharov, R. Krutohvostov, and J. Grabis, "Studies of multi-componenet nanodisperse powders by electron microscopy". Abstracts: p. 81.
4. Yu.F. Zhukovskii and E.A. Kotomin, "Theoretical simulation on the enhanced Li storage in the interfaces between transition metals and ionic lithium compounds used in Li batteries". Abstracts: p. 83.

**V. The 4<sup>th</sup> International Conference "Information Technologies and Management", IT&M'2006 (Riga, Latvia, April, 2006).**

1. V.N. Kuzovkov, W. von Niessen, and O.Kortlyke, "Theoretical Description of Oscillating Surface Reaction: a Comparison of Mean Field, Stochastic and Simulation Methods". Abstracts: p. 9-10.
2. J.R. Kalnin, V.Bardacenko, and S. Hilkevics, "Fluctuation and control management". Abstracts: p. 14-16.
3. G. Ozolinsh and J.R. Kalnin, "Systems of Thinking for Research and development Policy Impact Assessment in Latvia" Abstracts: p. 16-17.
4. A. Gopeyenko, S. Piskunov, and Yu.N. Shunin "*Ab initio* calculations of atomic and electronic structure of pure and defective  $\text{PbZrO}_3$ ". Abstracts: p. 18.

**VI. 3<sup>rd</sup> IAEA Technical Meeting on ECRH Physics and Technology for ITER (Como, Italy, May, 2006).**

Y. Kominis, O. Dumbrajs, K.A. Avramides, K. Hizanidis, and J.L. Vomvoridis, "Dynamics and output momentum spectrum of electrons under harmonic resonance in gyrotron resonators".

**VII. 14<sup>th</sup> Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (Santorini Island, Greece, May, 2006).**

1. Z.C. Ioannidis, O. Dumbrajs, and I.G. Tigelis, "Eigenvalues and Ohmic losses in coaxial gyrotron cavity". Abstracts: Nr 11.
2. B. Piosczyk, S. Alberti, D. Bariou, P. Benin, T. Bonicelli, G. Dammertz, O. Dumbrajs, and D. Fasel, "170 GHz, 2 MW, CW Coaxial Cavity Gyrotron for ITER - status and results obtained on a pre-prototype tube". Abstracts: Nr 52.

**VIII. 5<sup>th</sup> European Workshop on Materials Models and Simulations for Nuclear Fuels, MMSNF-5 (Nice, France, June, 2006).**

1. P. van Uffelen, E.A. Kotomin, A. Ciriello, V.V. Rondinella, D. Staicu, T. Wiss, R. Konings, and J. Somers, "The multi-time-scale approach to MX fuels at ITU".
2. E.A. Kotomin, N. Ashley, R. Grimes, P. van Uffelen, Yu. Mastrikov, Yu.F. Zhukovskii, and V.V. Rondinella, "Atomic scale modeling of nitride nuclear fuels".

**IX. 33<sup>rd</sup> EPS Conference on Plasma Physics (Rome, Italy, June, 2006).**

V. Iguchine, O. Dumbrajs, D. Constantinescu, H. Zohm, and G. Zvejnieks, "Stochastization as a possible explanation for some fast MHD phenomena in ASDEX Upgrade". Abstract: ECA Vol. 301, P-2.149

**X. 21<sup>st</sup> Russian Conference of Electron Microscopy (Chernogolovka, Russia, June, 2006).**

N.A. Zaporina, V.N. Timofeev, J.P. Grabis, and D. Bocharov, "Influence of synthesis conditions on morphology and structure of nanodisperse powders  $\text{SiC}/\text{Si}_3\text{N}_4\text{-Al}_2\text{O}_3\text{-Y}_2\text{O}_3$ ".

**XI. EFDA (EURATOM) Monitoring meeting on Modelling of Radiation Effects (Garching, Germany, June, 2006).**

E.A. Kotomin, V.N. Kuzovkov, and Yu.F. Zhukovskii, "Modelling of defects and defect-induced processes".

**XII. 8<sup>th</sup> International Conference on Computer Simulation of Radiation Effects in Solids, COSIRES'06 (Richland, WA, USA, June 2006).**

1. Yu.F. Zhukovskii, E.A. Kotomin, Yu. Mastrikov, S. Piskunov, K.L. Tsemekhman, and D.E. Ellis, "*Ab initio* simulations of isolated F centers in cubic SrTiO<sub>3</sub> perovskite". Abstracts: p. 42.

2. Yu.F. Zhukovskii, D. Fuks, E.A. Kotomin, and D.E. Ellis, "Difference of metal film growth modes on perfect and defective MgO surface". Abstracts: p. 109.

**XIII. 6<sup>th</sup> Europhysical Conference on Luminescent Detectors and Transformers of Ionizing Radiation LUMDETR 2006 (Lviv, Ukraine, June 2006).**

1. I. Bolesta, S. Velgosh, Yu. Datsiuk, I. Karbovnyk, V. Lesivtsiv, A.I. Popov, S. Bellucci, M. Cestelli Guidi, A. Marcelli, and M. Piccinini, "Optical, infrared and electron-microscopy studies of metallic clusters (Cd<sub>i</sub>)<sub>n</sub> in layered CdI<sub>2</sub> crystals". Abstracts: p. 201.

2. S. Bellucci, A. I. Popov, C. Balasubramanian, G. Cinque, A. Marcelli, I. Karbovnyk, V. Savchyn, and N. Krutyak, "Luminescence, vibrational and XANES studies of AlN nanomaterials". Abstracts: p. 220.

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P. Balaya, Yu.F. Zhukovshii, E. Bekaert, M. Ménétrier, M. Dollé, H. Li, E.A. Kotomin, and J. Maier, "Interfacial lithium storage in nanocomposites: experimental and theoretical evidences". Abstracts: Nr 291.

**XV. 18<sup>th</sup> Joint Russian-German Meeting on ECRH and Gyrotrons (Nizhny Novgorod-Moscow, Russia, June, 2006).**

B. Piosczyk, G. Dammertz, O. Dumbrajs, G. Ganzenbein, S. Illy, J. Jin, W. Leonhardt, G. Michel, O. Prinz, T. Rzesnicki, M. Schmid, and M. Thumm, "2MW, CW, 170 GHz Coaxial Cavity Gyrotron - experimental results with the pre-prototype and status".

**XVI. 134<sup>th</sup> Faraday Discussion: Atomic Transport and Defect Phenomena in Solids (Guildford, UK, July, 2006).**

1. Yu.F. Zhukovskii, S. Piskunov, E.A. Kotomin, E. Heifets, and D.E. Ellis, "A comparative study of cubic PbZrO<sub>3</sub> and SrTiO<sub>3</sub> perovskites containing single F- centers: *ab initio* simulations". Abstracts: P13.

2. D. Fuks, Yu.F. Zhukovskii, E.A. Kotomin, and D.E. Ellis, "Role of surface F-centers in formation of ultra-thin Ag and Cu films on the MgO(001) substrate". Abstracts: P14.

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1. E.A. Kotomin, Yu. Mastrikov, Yu.F. Zhukovskii, P. van Uffelen, and V.V. Rondinella "First-principles modelling of defects in advanced nuclear fuels". Abstracts: p.10.

2. D. Fuks, E.A. Kotomin, Yu.F. Zhukovskii, and D. Ellis, "Coin metal adsorption on perfect and defective MgO (001) surfaces". Abstracts: p. 27.

3. A.I. Popov, S. Bellucci, C. Balasubramanian, V. Savchyn, N. Krutyak, and I. Karbovnyk, "Luminescence from nanostructured AlN under electron beam excitation". Abstract: p. 302.

4. I. Bolesta, I. Karbovnyk, A.I. Popov, S. Bellucci, M. Cestelli Guidi, A. Marcelli, and M. Piccinini, "Phonon spectra of CdI<sub>2</sub> layered single crystals". Abstracts: p. 327.

**XVIII. 11<sup>th</sup> European Workshop on Quantum Systems in Chemistry and Physics, QSCP-XI (St.Petersburg, Russia, August, 2006).**

Yu.F. Zhukovskii, E.A. Kotomin, R.A. Evarestov, and D.E. Ellis, "Periodic quantum chemical simulations of point defects in metal oxides". Abstracts: p. 116.

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S. Illy, B. Pioszyk, T. Rzesnicki, G. Dammertz, O. Dumbrajs, G. Gantenbein, J. Jin, O. Prinz, W. Leonhardt, G. Michel, M. Schmid, and M. Thumm, "2 MW, CW, 170 GHz Coaxial Cavity Gyrotron - results obtained with an experimental pre-prototype". Abstracts: p. 29.

**XX. Joint 31<sup>st</sup> International Conference on Infrared and Millimeter Waves and 14<sup>th</sup> International Conference on Terahertz Electronics IRMMW -THz 2006 (Shanghai, China, September, 2006).**

1. M. Thumm, S. Alberti, A. Arnold, D. Bariou, G. Dammertz, C. Darbos, O. Dumbrajs, et al., "Gyrotron Development in EU for Present and Future Fusion Plasma Experiments". Abstracts: p. 7.

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3. O. Dumbrajs, Y. Kominis, K.A. Avramides, K. Hizanidis, and J.L. Vomvoridis, "Numerical Study of the Hamiltonian Gyrotron Map". Abstracts: p. 199.

**XXI. 7<sup>th</sup> International Workshop Nanoscience&Nanotechnology (Frascati, Italy, November, 2006).**

1. S. Bellucci, I. Bolesta, M. Cestelli Guidi, I. Karbovnyk, V. Lesivtsiv, P. Piccinini, A.I. Popov, and S. Velgosh, "Micro- and nanosized metallic clusters in cadmium iodide layered crystals: the influence on the optical properties". Abstracts: p. 9.

2. Yu.F. Zhukovskii, C. Balasubramanian, and S. Bellucci, "Influence of point defects on properties of AlN single-walled nanotubes". Abstracts: p. 61.

3. V. Savchyn, A.I. Popov, C. Balasubramanian, and S. Bellucci, "Luminescence from AlN nanotube/CsI pellets under electron beam excitation at 80-300 K". Abstracts: p. 72.

**2<sup>nd</sup> Latvian Conference "Functional materials and nanotechnologies", 27-28 March, 2006, Riga, Latvia.**

1. D.Millers, K.Smits L.Grigorjeva, V.Pankratovs. Investigation of oxide nanopowders: outlook for sensors, scintillators and lasers. Proceedings, p.47.

2. A.Kalinko, L.Grigorjeva, D.Millers, K.Smits. Photoluminescence of nanostructured ZnO obtained by different technologies., Proc. p.23.

3. B.Polyakov, J.Prikulis, L.Grigorjeva, D.Millers, V.Zauls, J.D.Holmes, D.Erts. High density arrays of gernaniun nanowire photoresistors. p.58.

4. L. Skuja, K. Kajihara, M. Hirano, and H. Hosono, Vacuum-ultraviolet absorption of Si-H groups in glassy SiO<sub>2</sub> Proc. p.69.

**The 8<sup>th</sup> International Conference-School "Advanced Materials and Technologies", Palanga, Lithuania, 27-31 August, 2006**

1. D.Millers, L.Grigorjeva, K.Smits. Luminescence – a Tool for Nanocrystal study.

2. V.Pankrativ. The study of Scintillators, phosphors and laser materials by means of time-resolved spectroscopy.

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1. K.Smits, L.Grigrorjeva, D.Millers, W.Lojkowska, A.Opalinska, J.Fidelus. Yttrium stabilized tetragonal ZrO<sub>2</sub> luminescence. Book of abstracts, p.124.
2. A.Kalinko, L.Grigrorjeva, D.Millers, J.Grabis, W.Lojkowska, C.J.Monty. Time-resolved luminescence in mokro and nanostructured ZnO powders. Ibid, 88

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V.Pankratov, L.Grigrorjeva, D.Millers, T.Chudoba. Luminescence of Rare-Earth doped YAG Nanopowders. Book of Abstracts, p.49.

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1. L. Skuja, K. Kajihara, M.Hirano, H.Hosono. Silicon hydride Si-H groups in silica. Abstracts p.82.
2. K. Kajihara, M.Hirano, L. Skuja, H. Hosono Reactions of chlorine-related species in silica., p.23

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2. A.Silins Light Energy Accumulation and Emission Processes in Optical Glasses.

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1. D.Millers, K.Smits, L.Grigrorjeva, J.Fidelus. Luminescence of Europium doped ZrO<sub>2</sub> nanopowder. Book of abstracts, p.89.
2. L.Grigrorjeva, D.Millers, Claude J.Monty, J.Kouam, K.Djessas. The luminescence properties of ZnO:Al nanopowders obtained by sol-gel; and vaporization-condensation methods.. Ibid, p.82.
3. J.Fidelus, W.Lojkowska, D.Millers, L.Grigrorjeva, P.P Piticescu. Zirconia-based nanomaterials for oxygen sensors-generation, characterization and optical properties. Ibid, p.88.
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1. V.Pankratov, L.Grigrorjeva, D.Millers, H.M.Yochum. Intrinsic luminescence and energy transfer process in pure and doped YVO<sub>4</sub> crystals. Book of abstracts, p
2. D.Millers, H.M.Yochum, V.Pankratov, P.Potera, L.Grigrorjeva. Transient and near-edge absorption in YVO crystals. Ibid, p. 353.
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1. L. Skuja, K. Kajihara, M.Hirano, A. Saitoh, H.Hosono. A New Type Of Hydrogen-Related E'-Center In Wet Silica Glass. Abstract NoO-EC2, p.86.
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K.Smits. Nanophysics

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1. D.Millers. ZrO<sub>2</sub>:Eu Nanocrystals Luminescence.
2. L.Grigorjeva Progress in ZnO Luminescence Studies

**The 2nd Latvian conference "Functional materials and nanotechnologies", March, 27-28, 2006, Riga, Latvia.**

- 1) A.Kuzmin "Application of cluster computing in materials science" - oral;
- 2) A.Kuzmin "Confocal spectromicroscopy of micro and nano-structured materials" (oral).
- 3) J. Kleperis, M.M.Nkosi, A.Nechaev, V.Linkovs, G.Vaivars "Template synthesis of nanomaterials – nickel nanowires"– poster: PO-19
- 4) L. Grinberga, Xin Wang, S.Naidoo, G.Vaivars, V.Linkov "Optimization of the synthesis of Pt – Ru/C fuell cell anode catalyst"– poster: PO-20
- 5) L. Grinberga, P.Ndungu, N.Onyegbule, A.Nechaev, V.Linkov "A simple route for synthesis of carbon nanotubes using LPG as a carbon source"– poster: PO-21
- 6) G. Veveris, V.Eglitis, A. Lusis, E. Pentjuss. "Leaching as method for surface nanostructuring of sodium aluminosilicate glass fibres" - poster: PO-5

**The 4th International Conference Information Technologies and Management, 2006, ISMA, Riga, Latvia, April 11-12.**

A.Kuzmin "Load-balancing technology in cluster computing" - oral.

**The 10<sup>th</sup> Int.Conf. on Structure of Non-Crystalline Materials (NCM10), Praga, Czech Republic, September 18-22, 2006.**

A.Kuzmin "Confocal spectromicroscopy of amorphous and nanocrystalline tungsten oxide films" - oral.

**International conference “EcoBalt 2006”, May 11-12, 2006, Riga (Latvia)**

- 1) J. Kleperis "Particle monitoring in Riga today and perspectives, - oral.
- 2) J. Kleperis "Development plan of Riga – action plan to improve air quality" - oral.
- 3) J. Kleperis "Can you find the smog in Riga?" - oral.
- 4) G.Bajārs, A.Lūsis, Ē.Pentjušs. „Ecodesign drivers and tools in electrical and electronics sector” – poster.
- 5) G.Bajārs, A.Lūsis, Ē.Pentjušs, J.Smilga. „Implementation of RoHS directive in electrical and electronics sector of Latvia” – poster.

**VIII Meeting “Fundamental problems of Solid State Ionics”, June 13–16, 2006, Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia**

J. Hodakovska “Electrochemical hydrogen – storage and usage aspects, VIII Meeting “Fundamental problems of Solid State Ionics” - poster.

**NORSTORE conference/workshop, May 29–31, 2006, Jyllinge, Denmark**

- 1) L. Grinberga, “Studies of Sorption Properties of Metal Hydride Electrodes” - oral.
- 2) J. Kleperis, “The ways how hydrogen could be implemented in Latvia – phantom from Latvian Hydrogen Association” - oral.

**4<sup>th</sup> International JTET Conference „Sustainable development, culture and education”. University of Helsinki, May 31-June 3, 2006**

G.Bajars, A.Lusis. “Turn from the restrictions to benefits: an ecodesign study course for sustainable development” – oral.

**11<sup>th</sup> International Exhibition „Baltic Industry 2006” and 3<sup>rd</sup> International Scientific and Research Exhibition „Research & Innovation”. Riga, October 18-21, 2006.**

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F. Muktepavela, G. Bakradze, S. Stolyarova Nanostructured me/oxide coatings. Abstr, p.273

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- 1.G.Bakradze, F.Muktepavela, S.Stolyarova, E.Tamanis. Thermal stability of Al-Cu-O nanostructured coatings obtained by the microtribological method. Abstr. P. 9.
2. I.Manika, J.Maniks. Evaluation of the mechanical properties in submicron volumes. Abstr.p.44.
3. A.Medvids, P.Onufrijevs, D.Grabovskis, F.Muktepavela, G.Bakradze. Low –K SiO<sub>2</sub> layer formation on Si by YAG:Nd laser radiation..Abstr. p. 46.

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**20-22 April, 2006, Tallin, Estonia**

V Mironov., V. Lapkovskis, F. Muktepavela Property and structure changes of sintered powder materials by treatment in the pulse magnetic field.

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2. I.Muzikante, L.Gerca, D.Erts, E.Fonavs, A.Pastare, A.Tokmakovs, Formation of self assembled monolayers on gold nanoparticles inside the nanoporous domains, Abstract book, p.50
3. A.Tokmakovs Investigation of photostability of indandione derivatives in polymer matrices in dependence on glass transition temperature and stereoregularity, Abstract book, p.74.
4. M.Rutkis, V.Kampars, A.Vembiris, A.Tokmakovs, Relation of the chromophore structure – second order non- linear optical properties in host – guest systems. Case of the DMABI derivatives/sPMMA, Abstract book, p.62
5. M.Rutkis, V.Zauls, Determination of second order non- linear coefficients – straightforward measurement or complex optical investigation?, Abstract book, p. 63.
6. A.Vembiris, M.Rutkis, A.Tokmakov, Study of polar order stability of the poled host – guest system (s-PMMA/DMABI), Abstract book, p.76
7. I.Kaulach, I.Muzikante, L.Gerca, M.Plotniece, M.Roze, J.Kalnacs, G.Shlihta, P.Shipkovs, A.Tokmakov, E.Fonavs, V.Kampars, Photoconductivity and PV effect of fullerene and phthalocyanine doped poly(3-hexylthiophene), Abstract book, p.27

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2. M.Roze, V.Kampars, I.Kaulach, N.Kirichenko, I.Muzikante, New soluble phthacyanines for solar cells, *J.Porphyrins and Phthalocyanines*, Vol. 10, Iss. 4-6, p. 844, 2006

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2. J.Latvels, R.Dobulans, E.Fonavs, I.Muzikante, M.Bouvet, V.Parra, Electrical properties of nickel phthalocanine and fluorinated nickel phthalocanine bilayer films, Book of Abstracts, p. 164
3. I.Kaulach, I.Muzikante, L.Gerca, M.Plotniece, M.Roze, J.Kalnachs, G.Shlihta, V.Kampars, A.Tokmakov, Charge Carrier Photogeneration in Poly (3-Hexylthiophene)-Fullerene Cells Doped with SnCl Phthalocyanine Soluble Derivative, Book of Abstracts, p. 160.
4. M.Rutkis, V.Kampars, A.Vembris, A.Jurgis, A. Tokmakov, Tailoring of NLO Properties of Organized Polymer Films: Achievements in Host- Guest System of the DMABI Derivatives in sPMMA, Book of Abstracts, p. 101.
5. A.Vembris, M.Rutkis, V.Zauls, E.Laizane, Stability of the Functional NLO Polymers - Optical Induced De- poling of the DMABI Molecules in sPMMA Matrix, Book of Abstracts, p. 104.
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7. S.W.Chan, M.Rutkis, J-M.Nunzi, SHG Investigation of Charge Transfer Induced Polarity in Organic Semiconductore Thin Films, Book of Abstracts, p. 94.
8. S.Juršėnas, N.Kurilcik, R.Karpicz, V.Gulbinas, L.Valkunas, M.Rutkis, I.Muzikante, Impact of aggregates on excitation dynamics in transparent polymer films doped by dipolar molecules, Book of Abstracts, p. 135.
9. M.Bouvet, V.Parra, E.Fonavs, R.Dobulans, J.Latvels, A.Tokmakov, I.Muzikante, Molecular Diodes as New Transducers for Gas Sensing, Book of Abstracts, p. 35.
10. B.Stiller, M.Saphiannikova, K.Morawetz, J.Ilnytskyi, D.Neher, I.Muzikante, P.Pastors, V.Kampars, Optical Patterning of Azobenzene and Indandione containing Films, Book of Abstracts, p. 73.
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2. J.Latvels, R.Dobulans, E.Fonavs, I.Muzikante, Diode properties of nickel phthalocanine and fluorinated nickel phthalocanine bilayer films, Abstracts pp.41
3. M.Rutkis, V.Kampars, A.Vembrišs, A.Jurgis, A.Tokmakov, Novel polymer photonic materials based on the DMABI derivatives. The chromophore structure relation to the second order non- linear optical efficiency, Abstracts, pp.69.
4. I.Muzikante, M.Rutkis, E.Fonavs, On features of organic solid state materials and technology, Abstracts pp.96
5. A.Vembrišs, M.Rutkis, E.Laizane, Study of polar order stability of corona poled host – guest (s-PMMA/DMABI) system, Abstracts pp.76
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**10<sup>th</sup> Europhysical Conference on Defects in Insulating Materials EURODIM 2006, July 10-14, 2006, University of Milano-Bicocca, Italy**

1. L. Trinkler, B.Berzina, A.Auzina, M. Benabdesselam, P. Iacconi. *UV light energy storage in AlN ceramics.*, Abstracts, p 370 (poster).
2. B.Berzina, L.Trinkler, A.Auzina, L.C.Chen, S.C.Shin, K.H.Chen, J.Grabis, I.Steins. *Light-induced processes in AlN: macrosized and nanomaterials.* Abstracts p 186 (poster).

**10<sup>th</sup> International Symposium on Radiation Physics ISRP-10, September 17-22, 2006, Coimbra, Portugal**

L.Trinkler, B.Berzina, M. Benabdesselam, P. Iacconi. *Use of aluminum nitride for radiation dosimetry.* Abstracts, B-94 (poster).

**7<sup>th</sup> International Conference on Excitonic Processes in Condensed Matter EXCON 2006, June 26-30, Winston\_Salem, NC, USA**

B.Berzina, L Trinkler, R.Krutohvostov, V.Korsak, R.T.Williams, B.Ucer, D.Carroll. *“Photoluminescence on boron nitride nanotubes and nano-arches”.* Abstracts, p 53 (oral).

**2<sup>nd</sup> Latvian conference “Functional materials and nanotechnologies” Riga, March 27-28, 2006.**

1. A. Gulans, I. Tale, Ab initio calculation of GaN nanowires, - 2<sup>nd</sup> Latvian conference “Functional materials and nanotechnologies” Riga, March 27-28, 2006, Book of abstracts, p. 19 (poster presentation).

2. E. Klotins, M. Springis, *Critical dynamics in nanoscale*, - Ibid. p. 31 (oral presentation).
3. P. Kulis, G. Marcins, M. Springis, I. Tale, A. Veispals, A. Voitkans, *Implementation of the MOCVD technique for growth of III group nitride nanostructures*, - Ibid. 37 (oral presentation).
4. M. Piesins, I. Tale, C.C.Yang, Thermoactivation spectroscopy of charge localization states in InGaN/GaN quantum well, - Ibid. p. 57 (poster presentation).
5. U. Rogulis, A. Veispāls, L. Dimitročenko, M. Springis, P. Kūlis, A. Fedotovs, *Optical properties of Ce-doped oxy-fluoride composites*, - Ibid. p. 61 (poster presentation).

**10<sup>th</sup> Europhysical Conference on Defects in Insulating Materials, ERODIM-10, Milano, University of Milano-Bicocca, Italia, July 10-14, 2006.**

1. P. Kulis, A. Sarakovskis, M. Springis, I. Tale, *Trap spectroscopy of N- and B-doped 6H-SiC*, - 10<sup>th</sup> Europhysical Conference on Defects in Insulating Materials, ERODIM-10, Conference program and book of abstracts, Milano, University of Milano-Bicocca, Italia, July 10-14, 2006, p. 58 (oral presentation).
2. S. Schweizer, B. Henke, U. Rogulis, W. Yen, *Recombination processes in rare-earth doped  $\text{Mn}_2\text{O}_4$  ( $M=\text{Ca}, \text{Sr}$ ) persistent phosphors investigated by optically-detected magnetic resonance*, - Ibid. p. 40 (oral presentation).
3. B. Henke, S. Schweizer, U. Rogulis, *Optical and electron paramagnetic resonance studies on radiation defects in Mn-activated  $\text{RbCdF}_3$* , - Ibid. p. 56 (oral presentation).
4. L. Dimitročenko, U. Rogulis, A. Veispals, M. Springis, P. Kulis, A. Fedotovs, *Luminescence of Ce-doped borate-oxyfluoride glass ceramics*, - Ibid. p. 136 (poster presentation).
5. A. Sharkovsky, K. Smits, M. Springis, *Luminescence of radiation defects in  $\text{LiBaF}_3:\text{Fe}$* , - Ibid. p. 223 (poster presentation).
4. A. Gulans, I. Tale, Ab initio calculation of wurtzite-type GaN nanowires, - Ibid. p. 245 (poster presentation).
5. A. Fedotovs, E. Elsts, U. Rogulis, A. Gulans, I. Tale, M. Nikl, N. Ichinose, K. Shimamura, *EPR hyperfine structure of F-type centres in pure  $\text{LiBaF}_3$  crystal*, - Ibid. p. 340 (poster presentation).

**6<sup>th</sup> European Conference on Luminescent Detectors and Transformers of Ionizing Radiation LUMDETR'2006, Lviv, Ukraine, June 19-23, 2006.**

- A. Fedotovs, U. Rogulis, L. Dimitročenko, *Electron paramagnetic resonance studies of radiation defects in  $\text{LiYF}_4$  crystal*, - Abstract of the International conference LUMDETR'2006, Lviv, Ukraine, June 19-23, 2006, p. 190 (poster presentation).

**100<sup>th</sup> Anniversary of Electro Ceramic Process Symposium. Tokyo, Japan, January 28, 2006.**

- A. Sternberg. Local Induced Polarization in Modified Ferroelectric Ceramics and Thin Films. Abstracts and Proceedings, 6 pages.

**Piezoceramics for end-users II. POLECER International Conference.**

**Hafjell, Lillehammer, Norway, March 5-8, 2006.**

1. K. Bormanis, M. Dambekalne, A. Sternberg, M. Antonova, A. Kalvane, N.M. Olekhovich, and J.V. Radush. High Pressure Production and Properties of PZN Ceramics. Oral and Poster Presentation Abstracts, p. 68.
2. K. Bormanis, A. Sternberg, A.I. Burkhanov, M. Dambekalne, A. Kalvane, and M. Antonova. Dielectric Properties of Layered Perovskite Ceramics. Oral and Poster Presentation Abstracts, p. 69.

3. R. Grigalaitis, J. Banys, A. Brilingas, A. Mikonis, K. Bormanis, A. Sternberg, and V. Zauls. Dielectric spectroscopy and distribution of relaxation times of PMN-PSN ceramics. Oral and Poster Presentation Abstracts, p. 74.
4. S. Kamba, D. Noujni, S. Denisov, A. Sternberg, and J. Petzelt. PMN with Perovskite and Pyrochlore Structure: Comparison of Dielectric Properties. Oral and Poster Presentation Abstracts, p. 71.

**2nd Latvian conference „Functional materials and nanotechnologies”, Riga, March 27-28, 2006.**

1. I. Aulika, J. Levoska, M. Tyunina, K. Kundzins, and V. Zauls. Direct Atomic Force Microscopy Analysis of Surface Nanoscale Roughness Effects on Optical Properties of PMN Thin Ferroelectric Film Multilayers. Abstracts, p. 6.
2. M. Dambekalne, M. Antonova, M. Livinsh, M. Kalnberga, A. Kalvane, and K. Bormanis. Ceramics of Lead Containing Heterovalent Niobates – Synthesis, Sintering and Microstructure. Abstracts, p. 16.
3. R. Grigalaitis, J. Banys, A. Brilingas, A. Sternberg, V. Zauls, and K. Bormanis. Polar Nano Regions in Ferroelectric Relaxors. Abstracts, p. 21.
4. E. Klotins Jr. Critical Dynamics in Nanoscale: Computing Solutions. Abstracts, p. 30.
5. E. Klotins, and M. Springis. Critical Dynamics in Nanoscale. Abstracts, p. 31.
6. M. Knite, A. Hill, V. Bovtun, V. Teteris, A. Solovjovs, V. Tupureina, G. Shakale, J. Zavickis, I. Aulika, B. Polakovs, S.J. Pas, S. Veljko, I. Klemenoks, J. Zicans, D. Erts, J. Petzelt, and A. Fuith. Polymer-Nanostructured Carbon Composite as Multifunctional Sensor Materials – Design, Processing and Properties. Abstracts, p. 32.
7. A. Krumins. Nanomaterials in the New Physics Curriculum at University of Latvia. Abstracts, p. 35.
8. R. Krutohvostovs, K. Kundzins, and I. Shorubalko. Electron Beam Direct Writing of 2D Structures for Optical Devices. Abstracts, p. 36.
9. A. Kuznetsov, and A. Bely. Critical Dynamics in Nanoscale: Toward the Inverse Problem of Ferroelectric Hysteresis. Abstracts, p.40.
10. A. Mishnevs, and E. Ivanovskis. X-ray Line Profile Analysis of Nanostructured Oxytocin. Abstracts, p. 48.
11. M. Ozolinsh, and G. Ikaunieks. Dynamics of Eye Aberration Detected by High-Speed Hartmann-Shack Aberrometer. Abstracts, p. 54.
12. A. Pastare, I. Pastare, K. Didriksone, K. Kundzinsh, J. Svirks, A. Viksna, and D. Erts. Formation of Nanoporous Anodized Aluminium Oxide and Pore Filling. Abstracts, p. 56.
13. B. Polyakov, J. Prikulis, L. Grigorjeva, D. Millers, V. Zauls, J. Holms, and D. Erts. High Density Arrays of Germanium Nanowire Photoresistors. Abstracts, p. 58.
14. M. Rutkis, and V. Zauls. Determination of Second Ordered Non-linear Coefficients – Straight Forward Measurement or Complex Optical Investigation? Abstracts, p. 63.
15. A. Sternberg, and I. Muzikante. National Research Programme of Latvia in Materialsciences. Abstracts, p. 70.
16. N. Zaporina, V.N. Timofeev, D. Bocharov, R. Krutohvostov, and J. Grabis. Studies of Multicomponent Nanodisperse Powders by Electron Microscopy's Methods. Abstracts, p. 81.

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Maris Ozolinsh, Gatis Ikaunieks, Sergejs Fomins, Michèle Colomb, and Jussi Parkkinen. Perception of Colour Contrast Stimuli in the Presence of Scattering. Abstracts, p. 5.

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E. Klotins. Critical Dynamics in Nanoscale. Program & Abstracts, p. 58.

**The 8th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity RCBJSF-8. Tsukuba, Japan, May 15-19, 2006.**

1. Andris Sternberg, Vismants Zauls, Karlis Kundzins, Maija Antonova, and Maruta Dambekalne. Local Induced Polarization in Modified Ferroelectric Ceramics and Thin Films. Abstract book, p. 21.
2. Juras Banys, Robertas Grigalaitis, Algirdas Brilingas, Andris Sternberg, Vismants Zauls, and Karlis Bormanis. Anomalous Broad Distribution of Relaxation Times in Mixed PMN-PSN Ceramics. Abstract book, p. 39.
3. Dmitry Pelegov, Vladimir Shur, Genady Lomakin, Oksana Yakutova, Ekaterina Nikolaeva, Ivan Baturin, Evgenii Rumyantsev, Vera Shikhova, and Andris Sternberg. Kinetics and Statics of Nanoscale Domain Structures in Relaxors: PLZT Ceramics and SBN Single Crystals. Abstract book, p. 70.

**The Fourth International Conference on Microwave Materials and Their Applications „MMA – 2006”. Oulu, Finland, June 12-15, 2006.**

1. Maruta Dambekalne, Maija Antonova, Maris Livinsh, Marite Kalnberga, Anna Kalvane, Andris Sternberg, and Karlis Bormanis. Technological Aspects of Producing Ceramics of  $\text{PbB}'_{1/2}\text{Nb}_{1/2}\text{O}_3$  Antiferroelectrics and Binary Solid Solutions with  $\text{PbSc}_{1/2}\text{Nb}_{1/2}\text{O}_3$ . Abstract book, p. 134.
2. Maruta Dambekalne, Maija Antonova, Maris Livinsh, Karlis Bormanis, Marite Kalnberga, Anna Kalvane, and Andris Sternberg. Studies of  $\text{PbB}'_{1/2}\text{Nb}_{1/2}\text{O}_3$  Antiferroelectrics and Binary Solid Solutions with  $\text{PbSc}_{1/2}\text{Nb}_{1/2}\text{O}_3$ . Abstract book, p. 136.
3. K. Bormanis, A.I. Burkhanov, M. Dambekalne, A.V. Alpatov, and A. Kalvane. Peculiarities of Dielectric Response of Ferroelectric Solid Solutions  $(\text{Pb},\text{Sr},\text{Bi})\text{TiO}_3$ . Abstract book, p. 163.

**ELECTROCERAMICS X. Toledo, Spain, June 18-22, 2006**

1. M. Dambekalne, K. Bormanis, M. Antonova, M. Livinsh, M. Kalnberga, and A. Sternberg. Antiferroelectric  $\text{Pb}(\text{B}^{+3}, \text{B}^{+5})\text{O}_3$  and Solid Solutions on Their Bases. Abstracts, CD-version, PDF file, DFPP-P-10.
2. K. Bormanis, A.I. Burkhanov, M. Dambekalne, M. Antonova, A. Sternberg, and A. Kalvane. Dielectric Response of Layered Bi Containing Ceramics. Abstracts, CD-version, PDF file, DFPP-P-12.
3. K. Bormanis, J.V. Radjush, A.I. Burkhanov, M. Dambekalne, A. Sternberg, M. Antonova, A. Kalvane, M. Livinsh, and N.M. Olekhovich. Production and Properties of PZN Ceramics with Perovskite Structure. Abstracts, CD-version, PDF file, DFPP-P-11.
4. D. Kiselev, V. Shvartsman, I. Bdikin, A. Sternberg, K. Bormanis, and A. Kholkin. Local Ferroelectric Properties and Domain Structure in Lead-Based Relaxor Ceramics. Abstracts, CD-version, PDF file, CH-P-06.
5. J. Banys, J. Macutkevic, S. Kamba, A. Pashkin, K. Bormanis, A. Sternberg, and J. Petzelt. Far-Infrared and THz Spectroscopy of PMN-PSN-PZN Relaxors Ferroelectrics. Abstracts, CD-version, PDF file, CH-P-15.
6. R. Grigalaitis, J. Banys, A. Brilingas, A. Sternberg, K. Bormanis, and V. Zauls. Broadband Dielectric Spectroscopy of PSN Ceramics. Abstracts, CD-version, PDF file, COST-O-40.
7. B. Malic, L. Cakare-Samardzija, and M. Kosec. Lead-Free Thin Films Based on Tantalates Prepared by Chemical Solution Deposition. Abstracts, CD-version, PDF file, TTF-P-29.

**Vision in Vehicles, VIV-11, Dublin, Ireland, July 27-29, 2006.**

M. Ozolinsh, M. Colomb, J. Parkkinen, G. Ikaunieks, S. Fomins, V. Karitans, and G. Krumina. Different Colour Contrast Stimuli Perception in Fog. Proceedings, VIV-11, p. 12.

**5<sup>th</sup> International Conference Advanced Optical Materials and Devices. Vilnius, Lithuania, August 27-30, 2006.**

K. Bormanis, M. Dambekalne, M. Antonova, A. Kalvane, N.M. Olekhovich, J.V. Radjush, and A. Sternberg. Role of Nanoparticles in High Pressure Production of Ferroelectric Ceramics. Program and Abstracts, p. 68.

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E. Klotins, and A. Kuznetsov. Critical Dynamics on Quantum – Microscopic Boundary. Program & Abstracts, p. 78.

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I. Aulika, A. Deyneka, V. Zauls, K. Kundzins, J. Pokorny, and J. Petzelt. Characterization of Structural and Optical Properties of Nanopatterned Polar Thin Films. Abstracts p. 38.

**The Fifth International Seminar on Ferroelastic Physics. Voronezh, Russia, September 10-13, 2006.**

1. А.И. Бурханов, В.Н. Нестеров, Ю.В. Кочергин, К. Борманис, А. Калване, М. Дамбекалне. Особенности низко- и инфракраскогочастотного диэлектрического отклика слоистых сегнетоэлектриков. Abstract Book, p. 75.
2. А.В. Аллатов, А.И. Бурханов, К. Борманис, А. Калване, А. Штернберг. Диэлектрические свойства сегнетоэлектрической керамики на основе ЦТС в области морфотропного фазового перехода. Abstract Book, p. 80.
3. А.И. Бурханов, П.В. Бондаренко, К. Борманис, А. Калване, М. Дамбекалне, М. Антонова. Диэлектрический отклик в области сегнето- и антисегнетоэлектрических фазовых переходов в керамике  $(\text{Pb},\text{La})(\text{Zr},\text{Sn},\text{Ti})\text{O}_3$ . Abstract Book, p. 93.
4. П.В. Бондаренко, А.И. Бурханов, К. Борманис, А. Калване, М. Дамбекалне, М. Антонова. Влияние смешающих полей на характер диэлектрического отклика в области фазовых переходов керамики  $(\text{Pb},\text{La})(\text{Zr},\text{Sn},\text{Ti})\text{O}_3$ . Abstract Book, p. 103.
5. M. Dambekalne, M. Antonova, K. Bormanis, M. Livins, M. Kalnberga, and A. Kalvane. Antiferroelectrics of Lead Containing Rare-Earth Niobates and Solid Solutions on Their Bases. Abstract Book, p. 105.

**Specialized Colloque AMPERE and AvH-Workshop: Advanced Materials as Studied by Spectroscopic and Diffraction Techniques. Vilnius, Lithuania, September 16 - 21, 2006.**

1. A. Katelnikovas, L. Vilciauskas, L. Grigorjeva, D. Millers, V. Pankratov, A. Sternberg, and A. Kareiva. Sol-Gel Chemistry Approach to the Preparation of Nanocrystalline  $\text{CaWO}_4$ . Programme and Abstracts, P14.
2. R. Grigalaitis, J. Banys, A. Brilingas, K. Bormanis, A. Sternberg, and V. Zauls. Dielectric Properties and Distribution of Relaxation Times of Mixed PMN-PSN Ceramics. Programme and Abstracts, P29.
3. K. Bormanis, A.I. Burkhanov, V.N. Nesterov, A. Kalvane, M. Dambekalne, M. Antonova, M. Livinsh, M. Kalnberga, and A. Sternberg. Low and Infra-Low Frequency Dielectric Spectroscopy of Layered Perovskite Ceramics. Programme and Abstracts, P33.

**Baltic Polymer Symposium 2006. Birini Castle, Latvia, September 20-22, 2006.**

A. Sternberg, and I. Muzikante. Selected Aspects of Latvian National Research Program in Materialscience. Programme and Proceedings, p. 58.

**ICO Topical Meeting on Optoinformatics/Information Photonics 2006. ITMO, St.Peterburg, Russia, September 2006.**

1. V. Karitans, and M. Ozolinsh. Dynamical Visual Acuity in the Presence of Light Scattering. Proceedings, ITMO, St.Petersburg, pp. 269-270.
2. J.M. Bueno, E. Berrio, M. Ozolinsh, and G. Ikaunieks. Optical Properties of a Polymer Dispersed Liquid Crystal to be Used on Visual Testing. Proceedings, ITMO, St.Petersburg, pp. 276-278.

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M. Ozolinsh, G. Ikaunieks, and S. Fomins. Dynamics of Eye Aberration Detected by High-Speed Hartmann-Shack Aberrometer. Proceedings, pp. 92-93.

**Международная научно-техническая конференция «Фундаментальные проблемы радиоэлектронного приборостроения». International Scientific and Technical Conference «Fundamental Problems of Radioengineering and Device Construction» (INTERMATIC – 2006). Москва, Россия, 24-28 октября 2006 г.**

П.В. Бондаренко, А.И. Бурханов, К. Борманис, А. Калване, М. Дамбекалне, М. Антонова. Процессы переключения поляризации в области сегнето- и антисегнетоэлектрических фазовых переходов в керамике  $(\text{Pb},\text{La})(\text{Zr},\text{Sn},\text{Ti})\text{O}_3$ . Материалы конференции, Москва: МИРЭА, 2006, часть 1., с. 60-63.

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**56th International Conference „NUCLEUS-2006” on Problems of Nuclear Spectroscopand Structure of Atomic Nucleus, 4-8 September, 2006, Sarov, Russia**

J.Proskurins, A.Andrejevs, T.Krasta, L.Neiburgs, J.Tambergs. Studies of Classical Energy Limit of Interacting Boson Model in the Case of Three-Body Interactions p 111-112.

**XXII Baltic Conference on the History of Science Vilnius, October, 5-6, 2006.**

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D. Riekstina, O. Veveris, J.Berzins, J.Alksnis, A. Skujina, Evalution of radionuclides accumulation in soil around the shut-down nuclear reactor and radioactive waste repository of Latvia, p. 102-103.

**International Conference “EcoBalt’2006”, Riga, May 11-12, 2006**

D. Riekstina, O. Veveris, A. Skujina, Tritium monitoring in ground waters, p.140.

**International Symposium In Situ Nuclear Metrology as a Tool for Radioecology,  
Kusadasi, Turkey, September 06-08, 2006**

D. Riekstina, J. Malnacs, O. Veveris, J. Berzins, A. Grivite, Assesment of radium-226 polluted territory of a shut-down medical institution, p.15.

**15 th International Conference on Solid Compounds of Transition Elements, 15-20 July,  
Krakov, Poland**

V. Skvortsova, N. Mironova-Ulmane, A. Kuzmin, U. Ulmanis, I. Sildos, Growth and Optical Properties of Transition Metal Oxides Single Crystal Solid solution, p. 205.

**10<sup>th</sup> International Symposium on Radiation Physics, 17-22 September 2006, Coimbra,  
Portugal**

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N. Mironova-Ulmane, A.Pavlenko. Estimation of Internal and External Exposure in Retrospective Dosimetry. Proceeding of ISSN 1727-1983 ISBN 3-540-36839-6 Springer Berlin Heidelberg New York pp.2026 – 2028.

**Int. Conf. "Actual problems of solid state physics-2005", 25-29 October, Minsk, Belarus**

1. N. Mironova-Ulmane, A. Kuzmin, V. Skvortsova, U. Ulmanis, I. Sildos, The role of phonons and magnons in formation of optical absorption fine structure in MnO, pp. 96 - 99.
2. N. Mironova-Ulmane, A. Kuzmin, V. Skvortsova, U. Ulmanis, I. Sildos, Optical properties of solid solution Ni<sub>c</sub>Mg<sub>1-c</sub>O International conference, pp. 93- 95.
3. V. Skvortsova, N. Mironova-Ulmane, U. Ulmanis, Defects in gadolinium gallium garnet single crystals irradiated by neutrons, pp.149 - 151.

**International Simposium on Spin Waves in Magnetics, June 28 – July 1, 2005, Sankt-Petersburg, Russia May 2006.**

A.Petrovs, I.Kudrenickis, Calculations of Hysteresis Loops for Cobalt Fine Particles with Exchange Anisotropy. Symposium Abstracts, page 39.

**6<sup>th</sup> International Conference on Fine Particles Magnetism(ICFPM) “ New trends in nanoparticle magnetism”, Rome, October 9-12, 2007**

1.A.Petrov, I.Kudrenickis, Exchange Anisotropy in cobalt fine particles, theses

**VIII Latin American Workshop on Magnetism, Magnetic Materials and their Applications, 12-16 August, 2007, Rio de Janeiro, Brazil**

A.Petrov, I.Kudrenickis, Calculations of Hysteresis Loops for Cobalt Fine Particles with Exchange Anisotropy, theses.

**10th Europhysical Conf. On Defects in Insulating Materials, Milano, Italy, July 10-14, 2006**

A.Ozols,Dm.Saharov, V.Kampars, V.Kokars, J.Kreicberga, S.Ratyeva. *Holographic properties of azobenzene oligomers with differently bonded chromophore groups.* Abstracts, p.317.

**10th European Conf. On Organised Films, Riga, Latvia, August 20-24, 2006.**

A.Ozols, M.Reinfelde, Dm.Saharov, K.Kundzins, V.Kampars, V.Kokars. *Holographic recording of surface relief gratings in tolyle-based azobenzene oligomers*. Abstracts, p.72.

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1.A.Ozols, Dm.Saharov. *Sub-bandgap light hologram recording in amorphous chalcogenides*. Abstracts, p.101.

2. J.Porins, A.Ozols, P.Onufrijevs. *Nanosecond and picosecond pulse transmission in optical fibres*. Abstracts, p. 83.

**6<sup>th</sup> Symposium SiO<sub>2</sub> advanced Dielectrics and Related Devices, Palermo, Sicily, Italy, June 2006**

A.N. Trukhin, K.M. Golant, Absorption and luminescence in amorphous silica synthesized by low-pressure plasmachemical technology, book of abstracts of 6<sup>th</sup> Symposium SiO<sub>2</sub> advanced Dielectrics and Related Devices, Palermo, Sicily, Italy, June 2006, p.84-85.

**The International Conference on the Physics of Non-Crystalline Solids, Rhodes, Greece, 28 October - 3 November 2006**

A.N. Trukhin, K.M. Golant, Y. Maksimov, M.Kink, R.Kink, RECOMBINATION LUMINESCENCE OF OXYGEN-DEFICIENT CENTRES IN SILICA, Book of abstract of the International Conference on the Physics of Non-Crystalline Solids, Rhodes, Greece, 28 October - 3 November 2006, p.276

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1. A.Kristins. *Working Time Monitoring System*. P.34.

2. A.Kristins. *Operation with Remote Objects Based on TCP/IP Communication Protocol*. P.35.

**4.4. VEIKTIE LĪGUMDARBI****4.4.1. Līgumdarbi ar Valsts iestādēm un Universitātēm: 14**

Nr.	Projekta nosaukums	Projekta vadītājs	Finansējuma apjoms <u>2006.gadā</u> <u>( bez PVN 18% )</u>	Pasūtītājs
1	Sniegt konsultācijas, sagatavojot informāciju Latvijas uzņēmējiem par Eiropas Parlamenta un Padomes direktīvas 2002/95/EK "Par dažu bīstamu vielu izmantošanas ierobežošanu elektriskās un elektroniskās iekārtās" ieviešanu.	A.Lūsis	6779.66	LR Ekonomikas ministrija
2	Opto-ķīmisko sensoru izstrāde uz amorfā halkogenīdu pusvadītāju bāzes.	J.Teteris		RD Vides departaments
3	Par hologrammu izgatavošanu un citiem "Zinātniskās nakts "pasākumu izdevumiem.	A.Šternbergs	838.98	Latvijas Universitāte

4	Dubultu speciecircņa dezaktivācijas rezultātā iegūto radioaktīvo atkritumu aktivitāties noteikšana ar gamma spektrometrijas metodi.	J.Bērziņš	2350.00	Bīstamo atkritumu pārvaldes valsts aģentūra
5	Hologrāfisko uzlīmju (ERAF) izgatavošana	J.Teteris	100.00	Rīgas Tehniskā Universitāte
6	Holografiskais ieraksts, presformas un hologrāfisko uzlīmju izgatavošana.	J.Teteris	480.00	Banku augstskola
7	Lietotāju atslēgas.	A.Kristiņš	317.50	Latvijas vides, ģeoloģijas un meteoroloģijas aģentūra
8	Principiālo shēmu modifīcēšana , optimizācija un spiesto plašu tehnoloģijas izstrādāšana platēm EL2-1A un EL2-2A.	A.Kristiņš	278.60	Rīgas Tehniskā Universitāte
9	Ģeoloģisko paraugu attēlu iegūšana un kvalitatīva ķīmiskā analīze.	R.Krutohvost ovs	84.74	Latvijas Universitāte
10	Titāna sacensību āķu un kāpņu remonts.	J.Katkēvičš	75.00	Latvijas ugunsdzēsības sporta federācija
11	Traktora T-28 bremžu cilindra izgatavošana.	J.Katkēvičš	110.00	VAS "Latvijas dzelzceļš"
12	Vakumsūkņa metāla konstrukciju metināšana un vakumkameras krāsns remonts.	J.Katkēvičš	220.00	Latvijas Universitāte
13	Metāla konstrukcijas.	J.Katkēvičš	380.00	Rīgas Tehniskā Universitāte
14	Augstspiediena pāreja akvalangiem un sajūga kluči.	J.Katkēvičš	180.00	Valsts Ugunsdzēsības un glābšanas dienests

#### 4.4.2. Līgumdarbi ar piesaistītā privātā sektora finansējumu: 30

Nr.	Projekta nosaukums	Projekta vadītājs	Finansējuma apjoms <u>2006.gadā ( bez PVN 18% )</u>	Pasūtītājs
1	Hologrāfiskais ieraksts.	J.Teteris	1275.00	SIA "Dardedze hologrāfija"
2	Optiskā mikroskopija un mikroscētības mērījumi.	J.Maniks	4780.00	A/S "Sidrabe"
3	Piekļuves sistēmas elektronisko bloku-kontrolieru izgatavošana un piegāde rīgā, Republikas laukumā 2.	A.Kristiņš	418.90	SIA "Augstceltnie"
4	Izstrādāt un izgatavot LR Zemkopības ministrijas administratīvās ēkas caulkaižu kontrolierus.	A.Kristiņš	954.50	SIA "Augstceltnie"
5	Identifikācijas poga ar turētāju.	A.Kristiņš	419.00	SIA "BaltControl"

6	Izstrādāt, izgatavot un uzstādīt datorizētu caurlaides, apsardzes un signalizācijas sistēmu "Latvijas Kuģniecībai".	A.Kristiņš	3205.00	SIA "Apollo AS"
7	Izstrādāt, izgatavot un piegādāt darba laika uzskaites sistēmu Rīgā, Jēkabpils ielā 12.	A.Kristiņš	525.00	SIA "VAIDE"
8	Lietotāja atslēgas.	A.Kristiņš	95.97	A/S "Latvijas kuģniecība"
9	Divportu atmiņa.	A.Kristiņš	88.00	SIA "VEF TELEKOM"
10	Izstrādāt un izgatavot darba laika uzskaites sistēmu SIA "Flexoplastic".	A.Kristiņš	739.05	SIA "Flexoplastic"
11	Jaudas transformatoru kontaktoru pārbaudes iekārtas profilaktiskais remonts un verifikācija.	A.Kristiņš	25.00	SIA "Energoremonts Rīga"
12	Jaudas transformatoru kontaktoru pārbaudes iekārtas remonts.	A.Kristiņš	30.00	A/S "Augstsprieguma tīkls"
13	"LatRosTrans"apsardzes un signalizācijas programmatūras instalācijas diska izstrāde un remonts.	A.Kristiņš	759.12	SIA "Alarm Lat"
14	Signalizācijas korpusu augstfrekvences magnētiska uzņēmība.	A.Petrovs	423.73	SIA "Centrs Autoloks"
15	Stiklu paraugu kvalitatīva ķīmiskā analīze.	R.Krutohvostovs	30.00	SIA "GroGlass"
16	Pārtikas ražošanas iekārtu tehniskie uzlabojumi.	J.Katkēvičš	5366.92	SIA "LIDO"
17	Eksperimentālie darbi celtniecības tehnikai.	J.Katkēvičš	2796.52	SIA "LX GRUPA"
18	Jaunu automātisku iekārtu izstrāde un izgatavošana.	J.Katkēvičš	4180.37	SIA "Stendera ziepju fabrika"
19	Automašīnu motoru paaugstinātas aizsardzības mezgli.	J.Katkēvičš	1780.00	SIA "Mūsu motors Rīga"
20	Eksperimentālās mēbeļu savienojumu konstrukcijas.	J.Katkēvičš	1308.00	SIA "Ansona mēbeļu fabrika"
21	Automātisko durvju un starpsienu konstrukcijas.	J.Katkēvičš	1468.50	SIA "Tehnodizains"
22	SF-1 un SF-2 modeļu skaidrās naudas glabāšanas atviktņu ar laika aizturi uz atvēršanu remonts un modernizācija.	J.Katkēvičš	517.42	A/S "LATVIJAS KRĀJBANKA"
23	Automašīnu motoru paaugstinātas aizsardzības mezgli.	J.Katkēvičš	630.00	SIA "SIGNĀLS"
24	Pakāpienu izgatavošanas eksperimentālie stendi.	J.Katkēvičš	772.00	SIA "BETAREKS"
25	Riepu pārbaudes stenda paraugs.	J.Katkēvičš	1781.00	SIA "Marathon Ltd"
26	Saiņošanas līnijas papildinājumi.	J.Katkēvičš	2554.00	Monilaite-Thomeko OY fil. Latvijā

27	Servisa mezglu izstrāde un izgatavošana.	J.Katkēvičš	630.00	SIA "EVA - SAT"
28	Autotransporta numura izgatavošanas presforma.	J.Katkēvičš	150.00	SIA "LATSIGN"
29	Ēdināšanas līnijas uzlabošana.	J.Katkēvičš	498.00	SIA "BARGI"
30	Eksperimentālās mēbelu savienojumu konstrukcijas.	J.Katkēvičš	359.97	SIA "MAROKA"
	Operīvi veikt eksperimentālo un zinātniski tehnisko darbu izstrādāšanu un izgatavošanu.	J.Katkēvičš	2324.25	<u>u.c.</u>

#### 4.4.3. Tirdzniecības projektu un pašvaldību pasūtījumu skaits: 18

Nr.	Projekta nosaukums	Projekta vadītājs	Izpildes termiņš (dd.mm.gg. - dd.mm.gg.)	Finansējuma apjoms <u>2006.gadā</u>
1	Struktūra, stabilitāte un faktori, kas ietekmē lantanīdu helātu efektivitāti saistībā ar megnētiskās rezonances tomogrāfiju (MRT).	J.Purāns	01.02.01-31.01.06	938 LVL
2	Mikromehānisko metožu izstrāde un iekārtas izgatavošana plānu plazmas pārklājumu tehnoloģijas uzlabošanai.	F.Muktepāvela	31.01.05-31.01.06	675 LVL
3	Drošības elementu izstrāde un ieviešana varavīkšņu hologrāfiskajās uzlīmēs.	J.Teteris	01.02.05-31.01.06	750 LVL
4	Starptautiskās sadarbības projektu realizācijas nodrošināšana ES perspektīvajās nozarēs, pielietojot jaunākās informācijas tehnoloģijas.	J.Kļaviņš	11.04.05-10.04.06	740 LVL
5	COST P8 Materiāli un sistēmas optisko datu glabāšanai un apstrādei.	J.Teteris	01.02.04.-31.05.06.	
6	Izstrādāt un ieviest ražošanā stiklplastu metalizācijas tehnoloģiju un elektrovadāmības mērījumu metodiku stiklplastu pārklājumiem.	V.Eglītis	09.11.05-08.11.06	4650 LVL
7	Ēku energoefektivitātes paaugstināšanas, izmantojot modernos siltināšanas materiālus, izvērtējums, strauji pieaugošu energoresursu izmaksu apstākļos.	J.Kļaviņš	10.11.05-09.11.06	3490 LVL
8	Fāzu asimetrijas izpēte elektrodzinēju starta procesā un kontroliera vadīta startēšanas iekārtas izstrāde.	J.Zvirgzds	10.11.05-12.07.06	6300 LVL
9	Bezkontakta datu pārraides procesu izpēte un identifikācijas sistēmas izveide.	A.Kristiņš	05.12.05-07.08.06	6062.50 LVL
10	Frekvences pārveidošanas procesa izpēte un tā vadības kontroliera izstrāde.	M.Ozoliņš	01.12.05-31.07.06	6350 LVL

11	Siltuma aizvadīšanas procesu izpēte tiristoru radiatoros, to projektēšana un izgatavošanas tehnoloģijas izstrāde.	Ē.Birks	10.10.05-12.06.06	5475 LVL
12	MOCVD tehnoloģijas izstrāde III elementu grupas nitrīdu plāno kārtīņu iegūšanai ultravioletiem gaismas emiteriem.	I.Tāle	01.12.05-31.05.06	2000 LVL
13	Izstrādāt un ieviest optometrijas praksē jaunu acs fundusu izmaiņu mērīšans metodiku.	P.Cikmačs	23.11.05-22.11.06	4900 LVL
14	Izstrādāt jaunas bezsvina lodēšanas tehnoloģijas, lodes materiālus un sakausējumus un testu metodes lodējumu un lodes materiālu pārbaudei.	M.Sprīngis	23.11.05-22.11.06	4800 LVL
15	Ūdeņraža degvielas elementa, kā alternatīvā energonesēja, demenstrācijas maketa izstrāde un izgatavošana, izmantošanai degvielas krīzes situācijā.	J.Kleperis	01.12.05-30.11.06	4900 LVL
16	Impulsu un augstfrekvences traucējumu izpēte un tīkla filtra izstrāde.	Ē.Birks	01.03.06-31.10.06	8350 LVL
17	Organisko fluoroforu luminiscenses pētījumi un optimālās optiskās mērījumu shēmas un signāla apstrādes algoritma noteikšana fluorimetra izstrādei.	B.Bērziņa	01.04.06-01.02.07	2450 LVL
18	Elektriskā tīkla trokšņu izpēte un mēriekārtas izstrāde.	A.Kristiņš	15.04.06-12.12.06	5500 LVL

**4.4.4. To *Interreg*, *Life*, *EUREKA* vai Eiropas Savienības struktūrfondu lietišķo pētījumu atklātā projektu konkursa projektu skaits un nosaukumi, kuros piedalās zinātniskā institūcija.**

Nr. p.k.	Projekta identifikācijas numurs un nosaukums	Vadītājs
1.	VPD1/RAF/CFLA/05/APK/2.5.1./000064/031 „Jauni materiāli radiācijas dozimetrijā”	B.Bērziņa
2.	VPD1/RAF/CFLA/05/APK/2.5.1./000067/034 „Platzonu materiālu MOCVD tehnoloģijas izstrāde un izpēte ultravioletiem gaismas emiteriem”	I.Tāle
3.	VPD1/ERAFF/CFLA/05/APK/2.5.1./000065/032 „Kontroliera vadība gaisa kompresoru stacijai”	J.Zvirgzds
4.	VPD1/ERAFF/CFLA/05/APK/2.5.1./000066/033 „Jaunu materiālu un elektrotehnoloģiju datorvadības programmatūras izstrāde ūdeņraža enerģētikas sistēmām”	J.Kleperis
5.	VPD1/ERAFF/CFLA/05/APK/2.5.1./000057/029 „Hologrāfisko materiālu un tehnoloģiju izstrāde un ieviešana”	J.Teteris

## **4.5. ZINĀTNISKAJĀ INSTITŪCIJĀ IZSTRĀDĀTO BAKALAURA, MAĢISTRA UN PROMOCIJAS DARBU SKAITS UN NOSAUKUMI**

### **2006.gadā izstrādātie bakalaura darbi LU CFI**

Nr. p.k.	Vārds Uzvārds	Bakalaura darba tēma	Darba vadītājs
1.	Dainis Dinsbergs	Bella nevienādības klasiskajā un kvantu mehānikā	Dr.h.phys. J.Tambergs
2.	Aleksejs Ivanovs	Segnetoelektrisko plānu kārtiņu pētījumi ar skanējošo elektronu mikroskopu	Mag.phys. R.Krutohvostovs
3.	Elina Laizāne	Azobenzolu molekulu optiski izraisīto īpašību pētījumi plānās kārtiņas un šķidumos	Dr.h.phys. I.Muzikante
4.	Guntis Mārciņš	Gallija nitrīda plāno kārtiņu iegūšana	Dr.h.phys. I.Tāle
5.	Gundars Ošenieks	AlN nanopulvera spektrālās īpašības	Dr.h.phys. B.Bērziņa
6.	Elīna Tjutjunnika	AlN nanoadatu un nanostieņu spektrālās īpašības	Dr.h.phys. B.Bērziņa
7.	Ieva Valdate-Kalēja	Slīdēšana pa graudu robežām un tās ietekme uz polikristāliskā Zn mehāmiskajām īpašībām	Dr.phys.F.Muktepāvela
8.	Aivars Vembris	Hromofora molekulu optiskās orientēšanas un dezorientēšanas procesa pētījumi viesu-saimnieka (host-guest) sistēma – DMABI-PMMA	Dr.phys. M.Rutkis

### **2006.gadā izstrādātie maģistru darbi LU CFI**

Nr. p.k.	Vārds Uzvārds	Maģistra darba tēma	Darba vadītājs
1.	Dmitrijs Bočarovs	Rentgenabsorbēcijas spektru kvantu ķīmiskā interpretācija perovskita tipa savienojumos	Dr.phys. A.Kuzmins
2.	Līga Brikmane	Foto- un termostimulētie procesi daudzkomponenšu sistēmās	Dr.h.phys. M.Sprīgīs
3.	Andris Slišāns	Oksifluorīdu kompozītu pētījumi	Dr.h.phys. U.Rogulis

### **2006.gadā izstrādātie promocijas darbi LU CFI**

Nr. p.k.	Vārds Uzvārds	Maģistra darba tēma	Darba vadītājs
1.	Deniss Grjaznovs	Difūzijas matemātiskā modelēšana nanokristālu materiālos	Dr.h.phys. J.Kotomins

## **4.6. CITA AR ZINĀTNISKO DARBĪBU SAISTĪTA INFORMĀCIJA**

2006.g. par Latvijas Zinātņu Akadēmijas korespondētālocekli fizikā ir ievēlēta LU CFI laboratorijas vadītāja Dr.habil.phys. Inta Muzikante

LZA jauno zinātnieku balvu Fizikas un tehniskās zinātnēs 2006.g. ir ieguvis LU CFI doktorants Anatolijs Šarakovskis.

LZA par nozīmīgākajiem sasniegumiem Latvijas zinātnē 2006.gadā atzinusi sekojošos:

- izveidoti jauna tipa efektīvi luminiscentētie detektoru materiāli, kurus izmanto skābekļa daudzuma noteikšanai, Dr.Larisa Grigorjeva, Dr. Donats Millers, Mg. Krišjānis Šmits, LU Cietvielu fizikas institūts
- izstrādāta jauna, ietilpīgāka optiskās atmiņas ierīce, kas sastāv no vairāku volframātu plānām kārtiņām, LZA kor.loc., Aleksejs Kuzmins, Dr. Roberts Kalendarjovs, LU Cietvielu fizikas institūts (Izraksts no LZA 2007.gada gadagrāmatas)

## **4.7. CITA INSTITŪTAM BŪTISKA INFORMĀCIJA**

2006.gadā virs LU Cietvielu fizikas institūta galvenās ēkas piebūves tika izbūvēta Konferenču zāle ( $120\text{m}^2$ ). Zālē katru nedēļu pirmdienās notiek LU CFI zinātniskie semināri (atbildīgais prof. A.Krūmiņš)

Zālē 2006.gadā notika trīs starptautiski pasākumi:

- Baltijas jūras valstu konference „Funkcionāli materiāli un nanotehnoloģijas”, 27.-29.marts (Dr.A.Šternbergs);
- EFDA Remote Participation Workshop (EURATOM projekts) 20.-21.jūnijs (Dr.M.Kundziņš)
- ERA-NET seminārs „Modern Trends in MAterials Science and Technology”11.-12.oktobris Semināru atklāja Ministru prezidents A.Kalvītis (Dr. A.Šternbergs)

Bez tam Institūta darbinieki 2006.gadā organizēja:

- 10.Eiropas konferenci par plānām kārtiņām 21.-24.augusts (Dr.I.Muzikante)
- LU Cietvielu fizikas institūta 22.zinātnisko konferenci 29.-30.marts (Dr.A.Krūmiņš)

2006.gadā papildinājās doktorantu un jauno zinātnieku skaits Institūtā:

- institūtā sāka strādāt divi doktoranti no Daugavpils Universitātes (Ē.Sledevskis un A.Gerbreders)
- fizikas doktorantūrā LU iestājās D.Bočarovs un M.Šorohovs
- jauno zinātnieku pozīcijas 2006.gadā ieguva V.Ogorodņiks un M.Kundziņš

Izmantojot ERAF finansējumu lietišķiem pētījumiem un IZM līdzfinansējumu starptautiskiem projektiem 2006.gadā ievērojami izdevies uzlabot Institūta pētniecisko un tehnoloģisko aparātu.

## 5. PĀRSKATS PAR SAŅEMTO FINANSĒJUMU UN TĀ IZLIETOJUMU

<b>PUBLISKAIS PĀRSKATS</b>	
<b>IENĒMUMI</b>	<b>IZDEVUMI</b>
	<b>2006.gadā</b>
ERAF2 Tāle	40000
ERAF-2 Zvīrgzds	47688
ERAF-2 Teteris	56391
ERAF-2 Bērziņa	43427
ERAF-2 Kleperis	47424
Līgumdarbi	61963
LZP finansējums	247806
TPP līgumdarbi	83628
Ekspertiem	2124
EK, EK līgumdarbi, konfer.	148953
Materiālzinātne, enerģētika	228294
Investīcijas	169000
Bāzes finansējums	281368
Līdzfinansējums	110824
Saņemts par telpu īri	17310
<b>KOPĀ</b>	<b>1586200</b>
	<b>2006.gadā</b>
iegādāti P/L	385275
Materiāli	97942
Literatūras iegāde	4658
Par pakalpojumiem	58052
Darba alga ar DD soc. nodokli	951798
Komunālie maksājumi	25868
Sakaru pakalpojumi	14106
Kancelejas preces, arī konferencēm	9988
Saimnieciskie izd.	34884
Juristu pakalp., auditī	5986
Kursi, semin., prezent., rekl.	5178
Komandējumi	116527
PVN nod.	55620
Nekust. īpašuma nod.	418
<b>KOPĀ</b>	<b>1766300</b>

**Ienākumi LU CFI, tūkstošos Ls,  
no 1993.gada līdz 2006.gadam**

Gads	Kopējais finansējums	Granti un Valsts programmas	Cits finansējums no budžeta	Līgum-darbi un TOP	Starptautiskie fondi	Telpu izīrēšana	ES Strukturālie fondi
<b>1993</b>	100.7	56.8	-	40.8	-	3.1	
<b>1994</b>	211.4	127.8	-	64.2	9.6	9.8	
<b>1995</b>	281	145.7	45	38.2	40	12.1	
<b>1996</b>	322.5	167.1	11.7	62.4	68	13.3	
<b>1997</b>	370	192.1	39	93	26	15.2	
<b>1998</b>	414 + 156	205.2	26	114	42	26.5	
<b>1999</b>	475.6+186	238.1	48.8	156.5	16.5	15.6	
<b>2000</b>	478.8 + 77	238.3	36.9	146.3	43	14.3	
<b>2001</b>	617.3	238.8	64.5	116.5	183	14.5	
<b>2002</b>	612.8	239.9	90.0	133.0	131	18.9	
<b>2003</b>	764.6	245.7	172.3	152.5	179	15.1	
<b>2004</b>	<b>1 809</b>	<b>246.7</b>	<b>123.5</b>	<b>166.5</b>	<b>121.8</b>	<b>8.0</b>	<b>1142,5</b>
<b>2005</b>	<b>1 269,4</b>	<b>245,5</b>	<b>358,8 + 120)*</b>	<b>172,8</b>	<b>387,6</b>	<b>4,7</b>	
<b>2006</b>	<b>1 586,1</b>	<b>466,9</b>	<b>403,4 + 169)*</b>	<b>152,4</b>	<b>135,6</b>	<b>9,6</b>	<b>249,2</b>

)\* investīcijas ēkas rekonstrukcijai

**2006.gadā:**

- Sadaļā „Granti un Valsts programmas” parādās Valsts materiālzinātnes pētniecības programmas finansējums (228,3 tūkst. Ls);
- Sadaļā „Cits finansējums no budžeta” parādās Bāzes finansējums (281,4 tūkst. Ls).

## **6. BŪTISKĀKĀS PĀRMAIŅAS INSTITŪTA STRUKTŪRĀ 2006.GADĀ**

Bāzes finansējuma saņemšana 2006.gadā palīdzēja palielināt vadošo zinātnieku atalgojumu. Ietaupījās finanšu līdzekļi zinātniskos projektos, kas tika izmantoti studentu finansēšanai. 2006.gadā zinātniskā darbā tika iesaistīti vairāk kā 40 studenti.

2006.gadā LU CFI atklātā projektu konkursā izcīnīja tiesības veikt piecus lietišķo pētījumu projektus par ERAF līdzekļiem (B.Bērziņa, I.Tāle, J.Zvirgzds, J.Teteris un J.Kleperis). Projektu realizācijai tika izveidotas pētnieciskās grupas, kas strādās līdz 2008.gadam, kad projekti būs jānodod.