Raport de activitate 2009 - 2015
privind desfăşurarea programului nucleu
LAPLAS PN 09 39 nr 39N/2009

Scopul programului:

Realizarea de cercetari strategice in:

-fotonica si tehnologie fotonica
-fizica si tehnologia plasmelor
-nanotehnologii si fizica suprafetelor multifunctionale
-fuziune nucleara
-tehnici si tehnologii specifice fascicolelor de electroni si microundelor
-fizica si tehnologia spatiului.

Modul de derulare al programului:

- Programul Nucleu s-a desfășurat în baza Strategiei de dezvoltare a INFLPR pe următoarele linii strategice: (i) fotonica și tehnologie fotonica; (ii) fizica și tehnologia plasmelor; (iii) nanotehnologii și fizica suprafețelormultifuncționale; (iv) fuziune nucleara; (v) tehnici și tehnologii specifice fascicolelor de electroni și microundelor; (vi) fizica și tehnologia spațiului.
- Activitatea de cercetare s-a desfășurat pe baza a 6 obiective care au acoperit aria tematica a institutului:
  - **Obiectivul 1:** Noi cercetări avansate de optica și fotonica pentru dezvoltarea de surse laser, nanotehnologii și nanomateriale, procesarea materialelor, științele vieții și mediu, optica neliniara și informaționala, metrologie;
  - **Obiectivul 2**: Materiale active solide și surse fotonice avansate;
  - **Obiectivul 3:** Cercetări avansate de fizica și tehnologia plasmelor privind: plasme fierbinți și fuziune nucleara, ingineria suprafețelor, nano-metrologie și depoluarea mediului;
  - **Obiectivul 4:** Obținerea de date științifice de interes în domeniul plasmelor de procesare și dezvoltarea de tehnici de procesare a materialelor și suprafețelor;
  - **Obiectivul 5:** Cercetări în domeniul interacției electronilor accelerați și a microundelor cu substanța pentru dezvoltarea de aplicații în protecția mediului, securitatea alimentara, obținerea de noi materiale;
  - **Obiectivul 6:** Cercetări teoretice și experimentale de fizica spațiala.
- **Finanțarea obiectivelor proiectului** in perioada 2009-2015 s-a făcut astfel: În cadrul obiectivului 1 au fost finanțate doua proiecte: a) Metode și tehnologii laser de sintetizare și procesare de noi nanomateriale multifuncționale, b) Micro și nano-fotonica. În cadrul obiectivului 2 a fost finanțatproiectul: Materiale și principii inovative pentru extinderea domeniului de lungimi de unda, regimului temporal și puterii fascicolelor laserilor cu solid. În cadrul obiectivului 3 a fost finanțat un proiect: Cercetări fundamentale și tehnologice de fizica plasmei. Aplicații în fuziunea nucleara și ingineria suprafețelor. În cadrul obiectivului 4 a fost finanțat un proiect: Studii și tehnici privind procesarea cu plasma a materialelor șisuprafețelor. În cadrul obiectivului 5 au fost finanțate doua proiecte: a) Efecte macroscopice de interes fundamental și aplicativ ale interacției electronilor accelerați cu materia; b) Cercetări ale tratării combinate cu electroni accelerați și microunde a mediilor materiale cu aplicații în protecția mediului și medicină. În cadrul obiectivului 6 au fost finanțate șase proiecte: a) Fragmentare și cuterizare de la nucleu la parton; b) Cercetări de spin-off pentru sisteme GRID; (c) Modelari analitice și numerice de evoluție dinamică, cinetică și de echilibru în condiții specifice spațiului cosmic - procese induse, structuri de scala mare; d) Metode și modele experimentale pentru simularea MEdiilor VIrtuale și extragerea de cunoștințe în beneficiul contramăsurilor pentru protecția cosmonauților la efectul advers al zborul spațial prelungit. (MEVICONTRA); e) Sateliți Artificiali ai Pământului: Aplicații de tip GMES (Global Monitoring for Environment and Security) – SAPAGMES; f) Cercetarea și dezvoltarea de tehnologii și aplicații spațiale prin valorificarea sistemelor de achiziție și procesare distribuita la bordul nano-sateliților aflați în zbor în formație strânsă.
- Programul s-a desfășurat conform planificării. Activitățile de cercetare-dezvoltare au contribuit la realizarea unui număr de: **1055** publicații în străinătate, **279** publicații în tara, cu un factor ISI cumulat de peste **2000, 47**cărți /capitole de carte, **1181**comunicări la congrese internaționale, conferințe și simpozioane, participarea la **127** proiecte europene (valoarea atrasa pentru partea romana > 34 mil. lei), **46** solicitari de brevete depuse în tara și **3** în străinătate, **28** acordate în tara și **2** în străinătate.

Prin rezultatele sale programul LAPLAS a asigurat bazele obținerii unor proiecte științifice interne și internaționale, a contribuit la creșterea prestigiului internațional al cercetarii științifice romanesti, la accelerarea cooperarii cu IMM-uri în parteneriate strategice, facilitand transferul tehnologic. De asemenea, programul NUCLEU a permis finalizarea a 15 teze de doctorat, 20 masterat si angajarea a 15 tineri cercetatori (medie anuala) în INFLPR. Pe baza rezultatelor științifice si tehnologice obținute în perioada 2009-2015 cercetatorii din INFLPR au cîștigat in cadrul competițiilor din Programul National II un numar de 61 de proiecte în calitate de coordonatori proiect precum și peste 40 proiecte în cadrul proiectelor europene (FP6, FP7, COST, Euratom, HORIZON 2020, etc.).De menționat că în această perioadă s-a derulat cel mai important proiect de investiții al institutului, Centrul de Tehnologii Avansate cu Laseri (CETAL) care, prin dotările sale, asigură atingerea obiectivelor propuse în strategia de dezvoltare a INFLPR și care va permite ca toate obiectivele viitorului Program Nucleu sa fie dezvoltate la un înalt nivel științific și tehnologic.

Finantarea detaliata a programului:

2009

In cadrul obiectivului **PN 09.39.01** au fost finantate doua proiecte:
PN 09 39 01 02 Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale
PN 09 39 01 04 ,,Micro si nanofotonica"
In cadrul obiectivului **PN 09.39.02** a fost finantat un proiect:
PN 09.39.02.01 Materiale si principii inovative pentru extinderea domeniului de lungimi de unda, regimului temporal si puterii fascicolelor laserilor cu solid."
In cadrul obiectivului **PN 09.39.03** a fost finantat un proiect:
PN 09 39 03 01 Cercetari fundamentale si tehnologice de fizica plasmei. Aplicatii in fuziunea nucleara si ingineria suprafetelor
In cadrul obiectivului PN 09.39.04 a fost finantat un proiect:
PN 09.39.04.01 " Studii si tehnici privind procesarea cu plasma a materialelor si suprafetelor"
In cadrul obiectivului **PN 09.39.05** au fost finantate doua proiecte:
PN 09 39 05 01 Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia
PN 09 39 05 02 Cercetari ale tratarii combinate cu electroni accelerati si microunde a mediilor materiale cu aplicatii in protectia mediului si medicina
In cadrul obiectivului **PN 09.39.06** au fost finantate sase proiecte:
PN 09.39.06.02 ***Fragmentare si clusterizare de la nucleu la parton***
PN 09.39.06.03 ***Cercetari de spin-off pentru sisteme GRID***
PN 09.39.06.04 ***Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare***
PN 09.39.06.05 ***Metode si modele experimentale pentru simularea ME diilor VI rtuale si extragerea de cunostinte in beneficiul CONTRA masurilor pentru protectia cosmonautilor la efectul advers la zborul spatial prelungit. (MEVICONTRA).***
PN 09.39.06.06 ***Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) - SAPAGMES***
PN 09.39.06.07 ***Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul nanosatelitilor aflati in zbor in formatie stransa***

2010

In cadrul obiectivului **PN 09.39.01** au fost finantate doua proiecte
PN 09 39 01 01 ***Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme***
PN 09 39 01 02 ***Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale***
In cadrul obiectivului **PN 09.39.02** a fost finantat un proiect:
PN 09.39.02.01 ***Materiale si principii inovative pentru extinderea domeniului de lungimi de unda, regimului temporal si puterii fascicolelor laserilor cu solid."***
In cadrul obiectivului **PN 09.39.05** au fost finantate doua proiecte:
PN 09 39 05 01 ***Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia***
In cadrul obiectivului **PN 09.39.06** au fost finantate sase proiecte:
PN 09.39.06.02 ***Fragmentare si clusterizare de la nucleu la parton***
PN 09.39.06.04 ***Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare***

PN 09.39.06.05 ***Metode si modele experimentale pentru simularea MEdiilor VIrtuale si extragerea de cunostinte in beneficiul CONTRA masurilor pentru protectia cosmonautilor la efectul advers la zborul spatial prelungit. (MEVICONTRA).***
PN 09.39.06.06 ***Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) - SAPAGMES***
PN 09.39.06.07 ***Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul nanosatelitilor aflati in zbor in formatie stransa***

2011

In cadrul obiectivului **PN 09.39.01** au fost finantate doua proiecte:
PN 09 39 01 01 ***Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme***
PN 09 39 01 02 ***Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale***
In cadrul obiectivului **PN 09.39.02** a fost finantat un proiect:
PN 09.39.02.01 ***Materiale si principii inovative pentru extinderea domeniului de lungimi de unda, regimului temporal si puterii fascicolelor laserilor cu solid."***
In cadrul obiectivului **PN 09.39.05** au fost finantate doua proiecte:
PN 09 39 05 01 ***Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia***
PN 09 39 05 02: ***Cercetari in domeniul interactiunii combinate a electronilor accelerati si a microundelor cu substanta pentru dezvoltarea de materiale noi si aplicatii in protectia mediului si medicina***
In cadrul obiectivului **PN 09.39.06** au fost finantate cinci proiecte:
PN 09.39.06.02 ***Fragmentare si clusterizare de la nucleu la parton***
PN 09.39.06.04 ***Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare***
PN 09.39.06.05 ***Metode si modele experimentale pentru simularea MEdiilor VIrtuale si extragerea de cunostinte in beneficiul CONTRA masurilor pentru protectia cosmonautilor la efectul advers la zborul spatial prelungit. (MEVICONTRA).***
PN 09.39.06.06 ***Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) - SAPAGMES***
PN 09.39.06.07 ***Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul nanosatelitilor aflati in zbor in formatie stransa***

2012

In cadrul obiectivului **PN 09.39.01** a fost finantat un proiect:
PN 09 39 01 04 ***Micro si Nanofotonica***
In cadrul obiectivului **PN 09.39.03** a fost finantat un proiect:
PN 09.39.03.01 ***Cercetari fundamentale si tehnologice de fizica plasmei. Aplicatii in fuziunea nucleara si ingineria suprafetelor***
In cadrul obiectivului **PN 09.39.04** a fost finantat un proiect:
PN 09 39 04 01 ***Studii şi tehnici privind procesarea cu plasmă a materialelor şi suprafeţelor***
In cadrul obiectivului **PN 09.39.06** a fost finantat un proiect:
PN 09.39.06.01 ***Cercetari exploratorii de fizica astroparticulelor, astrofizica si cosmologie***

2013

In cadrul obiectivului **PN 09.39.01** a fost finantat un proiect:
PN 09 39 01 03 ***Laseri in biomedicina, stiinte biomoleculare, mediu si ecologie, inclusiv in conditii extreme***
In cadrul obiectivului **PN 09.39.03** a fost finantat un proiect:
PN 09.39.03.01 ***Cercetari fundamentale si tehnologice de fizica plasmei. Aplicatii in fuziunea nucleara si ingineria suprafetelor***
In cadrul obiectivului **PN 09.39.04** a fost finantat un proiect:
PN 09 39 04 01 ***Studii şi tehnici privind procesarea cu plasmă a materialelor şi suprafeţelor***
In cadrul obiectivului **PN 09.39.06** a fost finantat un proiect:
PN 09.39.06.01 ***Cercetari exploratorii de fizica astroparticulelor, astrofizica si cosmologie.***
In cadrul obiectivului *PN 09.39.07* ***a fost finantat un proiect:***
PN 09.39.07.01 Metrologie asociata investigatiilor fotonice

2014

In cadrul obiectivului **PN 09.39.01** au fost finantate doua proiecte:

PN 09 39 01 01 ***Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme***
PN 09 39 01 03 ***Laseri in biomedicina, stiinte biomoleculare, mediu si ecologie, inclusiv in conditii extreme***
In cadrul obiectivului **PN 09.39.06** a fost finantat un proiect:
PN 09.39.06.01 ***Cercetari exploratorii de fizica astroparticulelor, astrofizica si cosmologie***

2015

In cadrul obiectivului **PN 09.39.01** au fost finantate trei proiecte:
PN 09 39 01 01 ***Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme***
PN 09 39 01 03 ***Laseri in biomedicina, stiinte biomoleculare, mediu si ecologie, inclusiv in conditii extreme***
PN 09.39.01.05 - Structuri fotonice si materiale avansate nanostructurate
In cadrul obiectivului 4 a fost finantat anul acesta 1 proiect
PN 09 39 .04 02 Sinteze si procesari avansate ale materialelor utilizand fascicule de electroni, microunde, plasma si radiatii laser
In cadrul obiectivului **PN 09.39.06** a fost finantat un proiect:
PN 09.39.06.01 ***Cercetari exploratorii de fizica astroparticulelor, astrofizica si cosmologie***

Proiecte contractate – anul 2009:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2009	Total	Studii superioare
PN 09.39.01	2	21.089,252	7.826,084	117	105
PN 09.39.02	1	9.050,000	3.000,000	142	115
PN 09.39.03	1	14.850,000	4.950,000	180	155
PN 09.39.04	1	15.500,000	1.524,856	94	71
PN 09.39.05	2	7.500,000	1.800,000	223	155
PN 09.39.06	7	17.793,405	3.829,500	32	27
Total:	**14**	**85.782,657**	**22.930,44**		

Proiecte contractate – anul 2010:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2010	Total	Studii superioare
PN 09.39.01	2	26.059,083	10.229,535	231	197
PN 09.39.02	1	9.500,000	3.000,000	231	197
PN 09.39.05	1	4.600,000	1.550,000	112	88
PN 09.39.06	5	12.993,405	4.227,350	60	55
Total	**9**	**53.152,488**	**19.006,885**		

Proiecte contractate – anul 2011:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2011	Total	Studii superioare
PN 09.39.01	2	26.059.083	10.538.640	236	202
PN 09.39.02	1	9.500.000	3.050.000	236	202

PN 09.39.05	2	7.500.000	4.150.000	237	203
PN 09.39.06	5	12.993.405	5.200.000	63	59
Total	**10**	**56.052.488**	**22.938.640**		

Proiecte contractate – anul 2012:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2012	Total	Studii superioare
PN 09.39.01	1	8.763.756	6.228.580	232	195
PN 09.39.03	1	14.850.000	4.600.000	239	202
PN 09.39.04	1	15.500.000	8.010.060	232	195
PN 09.39.06	2	4.800.000	4.100.000	74	69
Total	**5**	**43.913.756**	**22.938.640**		

Proiecte contractate – anul 2013:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2013	Total	Studii superioare
PN 09.39.01	1	12.488.462	1.973.400	220	190
PN 09.39.03	1	14.850.000	5.300.000	226	196
PN 09.39.04	1	15.500.000	5.878.666	228	198
PN 09.39.06	1	5.000.000	2.702.467	75	70
PN 09.39.07	1	4.243.311	4.243.311	225	195
Total	**5**	**52.081.773**	**20.097.844**	**974**	**849**

Proiecte contractate – anul 2014:

Cod obiectiv	Nr. proiecte contractate	Valoare (mii lei)		Nr. personal CD	
		Total	2014	Total	Studii superioare
PN 09.39.01	2	66.411.036	19.743.197	221	194
PN 09.39.06	1	25.541.302	36.545.655	69	64
Total	**3**	**91.952.338**	**23.397.852**	**290**	**258**

Proiecte contractate – anul 2015:

Cod obiectiv	Nr. proiecte contractate	Valoare (lei)		Nr. personal CD	
		Total	2015	Total	Studii superioare
PN 09.39.01	3	73.441.036	16.901.600	221	195
PN 09 39 04	1	20.455.182	50.41.600	221	195
PN 09.39.06	1	27.818.632	4.104.660	69	64
Total	**5**	**121.714.850**	**26.047.860**		

Prezentarea rezultatelor:

2009

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Denumirea proiectului	Tipul rezultatului	Efecte scontate
PN 09 39 01 02 Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale.	studii	Dezvoltarea de tehnologii laser pentru obtinerea de nanomateriale, filme subtiri nanostructurate, nanostructuri 3D pentru obtinere de senzori, nanocompusi, elemente fotovoltaice nanostructurate, participare PC7, lucrari stiintifice si elaborari pe proceduri ISO 9001 de micro si nanotehnologii multifunctionale.
PN 09 39 01 04 ,,Micro si nanofotonica”	Studii	Rezultatele originale obtinute pot contribui la dezvoltarea de metode noi de caracterizare a proprietatilor optice neliniare a nanomaterialelor si la functionalitati fotonice noi bazate pe materiale nanostructurate cu raspuns neliniar imbunatatit; Rezultatele obtinute pot conduce la initierea unor noi colaborari internationale si pot oferi noi oportunitati pentru invatamant si perfectionare; subiecte moderne ale unor teze de doctorat si lucrari de licenta / masterat; Capacitati de cercetare crescute; Imbunatatirea capacitatii de a participa la proiecte europene; Noi oportunitati pentru transfer tehnologic; Proprietăţile de coerenţa spaţială a luminii sunt de interes pentru aplicaţii în obţinerea imaginilor şi în caracterizarea structurilor microscopice. Astfel de aplicaţii acoperă de la propagarea prin medii aleatoare pentru telecomunicaţii şi aplicaţii în teledetecţie, până la design-ul vopselelor şi propagarea prin medii biologice. Obtinerea si caracterizarea de filme subtiri.
PN 09.39.02.01 Materiale si principiii inovative pentru extinderea domeniului de lungimi de unda, regimului temporal si puterii fascicolelor laserilor cu solid.”	Studii	Dezvoltarea de noi tipuri de materiale active laser pentru aplicatii speciale sau pentru optimizarea performantelor si extinderea plajei de putere a laserilor cu solid, Constructia de laseri cu noi lungimi de unda si proprietati imbunatatite ale fascicolului laser
	Studii	Obtinerea de pulberi oxidice nano- si micrometrice multiplu dopate cu ioni de pamanturi rare; - date noi privind proprietatile spectroscopice ale ionilor de pamanturi rare in aceste pulberi; date privind transferul de energie intre ionii dopati. - pulberi de tip fluoruri nano- si micrometrice dopate cu ioni de pamanturi rare; Posibilitatea folosirii pulberilor cristaline dopate cu ioni de pamanturi rare ca markeri iluminati in infrarosu cu emisie in vizibil
	Studii	Dezvoltarea unui model matematic privind emisia la trei microni in sisteme policristaline (granati, sesquioxizi); pe baza lui se poate estima eficienta acestor noi medii active in diferite regimuri de functionare Constructia de laseri de mare putere
	Studii	Dezvoltarea de noi sisteme laser monocristaline de tip $Sr_{1-x}Nd_yLa_{x-y}Mg_xAl_{12-x}O_{19}$ capabile sa genereze emisie laser eficienta la 900nm in pompaj cu dioda laser. Construirea de noi laseri cu solid cu emisie la 900nm ce ofera mari perspective pentru obtinerea de radiatie laser in albastru prin procese de dublare a frecventei de emisie.

	Studii	Determinarea modului de distributie (discret sau continuu) a ionilor de pamanturi rare in diverse materiale mezoproase obtinute prin metode sol-gel. - descrierea mediului de coordinatie al ionilor de pamanturi rare in materiale mezoporoase prin corelarea acestuia cu proprietatile structurale ale matricii gazda. Imbunataţirea proprietaţilor unor suprafeţe in materiale mezoporoase
	Studii	Demonstrarea de emisie laser in regim de operare comutata a materialelor ceramice, cristaline si amorfe Laseri de mare putere cu emisie in pulsuri ultrascurte
	Studii	- Un astfel de laser poate fi utilizat in aplicatii de aprindere a motoarelor cu combustie interna. - Prin variatia temperaturii unui laser Nd:YAG/Cr^{4+}:YAG/VBG pot fi selectate diferite lungimi de unda cu spectru ingust si separate printr-un interval de cativa nm. Astfel de laseri pot fi utilizati pentru generarea de radiatie in domeniul THz. Laser comutat pasiv Nd:YAG/Cr^{4+}:YAG de tip ”all ceramics” cu energie pe puls de ~2 mJ si durata a pulsului de 0.6 ns. - Stabilizarea lungimii de unda de emisie a unui laser Nd:YAG/Cr^{4+}:YAG la variatii ale temperaturii, prin utilizarea ca element de extractie a unui element optic de tip ”Volume Bragg Gratings” (VBG). Obtinerea de pulsuri laser cu energie ridicata, in comparatie cu un laser Nd:YAG/Cr^{4+}:YAG, utilizand o configuratie de laser Nd:YAG/Cr^{4+}:YAG/VBG
	Studii	Punerea la punct de metode de sinteza a pulberilor cristaline fluoridice si oxidice cu fononi de energie mica. - Au fost obtinute pulberi cristaline cu fononi de energie mica dopate cu Yb si Er, utile ca fosfori de conversie superioara. - S-au obtinut date noi privind influenta metodei de sinteza folosite asupra proprietatilor structurale, morfologice si spectroscopice ale pulberilor sintetizate. - Cresterea eficientei fosforilor pompati in infrarosu prin utilizarea unor materiale cu fononi de energie mica, avand eficienta cuantica mare a emisiei in vizibil.
PN 09 39 03 01 Cercetari fundamentale si tehnologice de fizica plasmei. Aplicatii in fuziunea nucleara si ingineria suprafetelor	Studii	Dezvoltarea de algoritmi numerici compacti, de inalta precizie, pentru rezolvarea ecuatiilor cu derivate partiale neliniare stationare (de tip eliptic) ce descriu plasmele de fuziune in model magnetohidrodinamic stationar Imbunatatirea eficientei programelor de calcul pentru modelarea plasmelor de fuziune prin marirea dimensiunilor computationale ale problemelor discrete studiate, adica prin posibilitatea descrierii unor proprietati cu variatie spatiala rapida.
	Studii	Dezvoltarea unei metode originala, de tip Lagrangian pentru determinarea efectului fluctuatiilor in plasma. Utilizand aceasta metoda s-au studiat urmatoarele doua aplicatii. *A) Studiul transportului particulelor test in turbulenta atmosferica.* B) Studiul evolutiei instabilitatii de drift in plasma confinata magnetic pana in regimurile puternic neliniare. Aceste rezultate teoretice fundamentale permit intelegerea unor procese neliniare complexe ce apar in turbulenta. Sunt primele metode analitice care permit descrierea stagiului puternic neliniar al turbulentei (studiat pana acum prin simulari numerice masive). S-a obtinut o perspectiva noua in intelegerea evolutiei neliniare a undelor de drift in plasma confinata magnetic. Rezultatele privind starile asimptotice ale fluidelor au fost deja aplicate la cazul atmosferei pentru studiul cicloanelor tropicale.
	Studii	Metoda de diagnostică a neutronilor de fuziune cu detectori cu bule Aplicarea acestei metode pe instalatiile de fuziune permite detectarea unor neutroni cu energii mici, dificil de masurat prin alte tehnici

	Studii	Straturi subtiri de carbon (10-15 μm) ramforsate cu atomi de W (10-30 at.%) Posibila utilizare a lor la primul perete al instalatiilor de fuziune nucleara
	Studii	Algoritmi optimizati de reconstructie tomografica si implementare paralel distribuita Reconstructii tomografice de inalta rezolutie spatiala. Se vor utiliza in analiza unor materiale de fuziune (depuneri metalice pe straturi CFC), materiale si fire supraconductoare..
	Studii	Elaborarea unui studiu comparativ al diferitelor configuratii de descarcare in vederea aplicarii lor la distrugerea poluantilor organici din aer si apa. Utilizarea descarcarilor electrice pentru distrugerea compusilor organici volatile din gaze si a poluantilor din apa.
	Studii	Stabilirea parametrilor fizici ai generatoarelor cu plasme pulsate la presiune atmosfericã utilizabile la modificarea proprietăţilor unor suprafeţe polimerice. Imbunataţirea proprietaţilor unor suprafeţe polimerice prin tratament cu plasme pulsate la presiune atmosfericã : -micşorarea puternicã a unghiului de contact la interfaţa lichid-solid ; -creşterea energiei de suprafaţã ; -creşterea adezivitãţii ; -creşterea reactivitãţii chimice. Aplicaţii în industria alimentarã, în industria textilã, în biomedicinã
	Studii	Studiul evolutiei spatio-temporale a speciilor din plasma de ablatie produsa la interactia unui fascicul pulsat de electroni cu tinte solide. Determinarea parametrilor plasmei de ablatie Optimizarea procesului de depunere de filme subtiri prin metoda PED in vederea obtinerii de filme subtiri epitaxiale si nanostructurate multifunctionale
	Studii	Studiu privind realizarea unei capcane de tip Penning S-au stabilit condiţiile necesare formării unei plasme unicomponente ultrareci din electroni. Rezultatele pot fi folosite in măsurători spectroscopice de înaltă performanţă
PN 09 39 04 01 Studii si tehnici privind procesarea cu plasma a materialelor si suprafetelor	Studiu proiect	- Date stiintifice privind descarcarile in gaze si procesele din plasma, publicatii, metode si tehnici noi cu plasma pentru procesarea materialelor, materiale noi -Realizarea filmelor magnetorezistive cu granule nanostructurate magnetice distribuite in retele de izolatori sau matrici nemagnetice la diferite concentratii; -Punerea la dispozitie a probelor interesante pentru confectionarea unor elemente sensibile in camp magnetic de catre IMM-uri (OPTICOAT, ROMES, MGM, etc) - Realizarea de filme antifrictiune, cu coeficienti de frecare in domeniul 0.1-0.3 in regim de alunecare uscata, pentru aplicatii in aeronautica si industria auto
PN 09 39 05 01 Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia	studiu proiect	Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; Elaborarea de lucrari stiintifice originale pentru publicare si prezentarea la congrese si simpozioane internationale; Dezvoltarea unor dispozitive mecanice pentru detectarea efectului cinetic al electronilor Evidentierea unor posibilitati noi de masura si influentare a dozei absorbite in materiale iradiate in fascicul de electroni Optimizarea canalului fascicul de electroni al instalatiei DIADYN in vederea realizarii unor tratamente neconventionale in fascicul de electroni de joasa energie.
PN 09 39 05 02 Cercetari ale tratarii combinate cu electroni accelerati si microunde a	studiu proiect	Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate;

mediilor materiale cu aplicatii in protectia mediului si medicina		Elaborarea de lucrari stiintifice originale pentru publicare si prezentarea la congrese si simpozioane internationale; Dezvoltarea unei metode noi de tratare a apelor reziduale si de suprafata, metoda ce utilizeaza amestecuri polielectroliti (obtinuti prin metode diferite de polimerizare) cu un spectru larg de caracteristici fizico-chimice; (5) Noi materiale cu utilizari speciale in tratarea apelor reziduale si de suprafata de puritate ridicata si proprietati performante Experimentarea de modele care sa permita investigarea efectelor iradierii cu MU asupra unor culturi celulare in timpul iradierii; Preconizam ca iradierea cu EA si/sau MU pentru eliminarea COV din gaze este potential capabila sa conduca la rezultate si beneficii insemnate in imbunatatirea sanatatii publice si a calitatii vietii.
PN 09.39.06.02 Fragmentare si clusterizare de la nucleu la parton	studii	In acord cu profilul institutului nostru, de cercetare fundamentala si avansata, rezultatele principale masurabile ale cercetarii constau in contributii la cercetarile stiintifice actuale, prin publicarea de lucrari stiintifice in reviste de specialitate cotate ISI, din tara si strainatate si prezentarea de comunicari stiintifice la conferinte nationale si internationale. Participantii la acest proiect se angajeaza sa mentioneze in articolele de specialitate pe care le vor publica si/sau prezenta la conferinte, workshopuri si meetinguri, specificandu-se totodata programul si proiectul. Actiunile de suport pentru derularea proiectului vizeaza coordonarea in paralel a activitatii din cadrul acestui proiect cu cea a grupurilor colaborarilor (Becquerel – IUCN Dubna, R3B – GSI, ALICE – CERN).
PN 09.39.06.03 Cercetari de spin-off pentru sisteme GRID	studii	Realizarea unui prototip aplicational middleware care sa demonstreze folosirea tehnologiilor GRID si in Spin-off. De asemenea se doreste diseminarea rezultatelor prin mijloace usuale precum articole cotate ISI, manifestari stiintifice, pagini web
PN 09.39.06.04 Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare	studii	Proiectul va furniza rezultate riguroase intr-unul din domeniile de expertiza actuale ale ISS, de interes major pentru comuntatea stiintifica internationala.
PN 09.39.06.05 Metode si modele experimentale pentru simularea MEdiilor VIrtuale si extragerea de cunostinte in beneficiul CONTRA masurilor pentru protectia cosmonautilor la efectul advers la zborul spatial prelungit. (MEVICONTRA).	studii	Proiectul se concretizează prin modele teoretice si functionale, recomandari de utilizare, in diferite domenii inclusiv si in principal cel al aplicatiilor spatiale pentru contramasuri la efectul microgravitatiei si recluziunii prelungite in zborul spatial, cunostinte pentru aplicare in alte domenii decat cel vizat initial. Rezultatele proiectului pot fi sursa de plecare pentru proiecte aplicative pe diferite surse de finantare interna si/sau internationale.
PN 09.39.06.06 Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) - SAPAGMES	studii	Elaborarea de lucrari stiintifice in reviste de specialitate cotate ISI. Dezvoltarea de aplicatii software
PN 09.39.06.07 Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul nanosatelitilor aflati in zbor in formatie stransa	studii	Dezvoltarea de aplicatii spatiale specifice nanosatelitilor in zbor in formatie stransa conectati in retea. In consecinta, acest proiect fructifica nisa de piata aparuta odata cu dezvoltarea nanosatelitilor prin creerea de *Aplicatii Spatiale dedicate, algoritmi de comunicatii de date si solutii de implementare.*

Valorificarea în producţie a rezultatelor obţinute:

Denumirea proiectului	Tipul rezultatului	Utilizatori	Efecte socio-economice la utilizator
•Sinteza de nanocompusi metalici pe baza de Ti, Fe •Sinteza cu laserul de nanostructuri carbonice	• studiu proiect: •nanostructuri carbonice cu structura turbostratica si structura fulerenica	•Unitati de cercetare si IMM-uri cu preocupari in domemeniul catalizatorilor si senzorilor •ICAA-Buc., INCAS-Buc., SC Compozite-Brasov	Realizarea de materiale compozite pentru industria aerospatiala si de transport
Micro si nanofotonica	Lucrari si comunicari stiintifice	Comunitatea stiintifica nationala si internationala din domeniul Micro- si nano- fotonicii	Rezultatele stiintifice ale proiectului pot contribui la constituirea, in Romania, a unui patrimoniu de cunostinte avansate in optica neliniara si informationala, micro- si nanofotonica, comunicatiile optice moderne, domenii de interes major ale societatii informationale. Cercetarile din acest proiect ofera oportunitati pentru invatamant si perfectionare. In realizarea proiectului, sunt atrasi mai multi doctoranzi, ale caror teze au tematica legata de metode de caracterizare si aplicatii ale unor materiale optice neliniare nanostructurate, pentru fotonica. Rezultatele investigării efectului coerenţei spaţiale asupra proceselor de propagare şi împrăştiere a luminii vor putea contribui la creşterea vizibilităţii şi recunoaşterii internaţionale a cercetărilor din secţia Laseri a Institutului Naţional de Fizica Laserilor, Plasmei şi Radiaţiei.
Supplly Contract, Be coatings on Si wafers	Valorificare econo- mica, 10.000 EUR	Sipplia OY, Finlanda	Realizare obiective contract cercetare 50.000EUR
Contracte economice: executie dispozitive speciale (Tun TVA, tun GTVA)	20.000 lei 3.000 lei	Univ. Constanta	Realizare obiective contracte cercetare 1.000.000 lei

Participarea la colaborări internaţionale:

Nr. crt.	Denumirea programului internaţional	Ţară şi/sau CE unităţi colaboratoare	Denumire proiect
1	Acord colaborare cu Universitatea Johannes Kepler – Linz	AUSTRIA	Procesari laser de materiale functionale
2	Acord colaborare cu Institutul Paul Scherrer – Zurich	ELVETIA	Studii de efect Hall pe filme functionale de ZnO
3	Acord colaborare cu Universitatea Southampton, in cadrul proiectului 3D-DEMO	ANGLIA	Obtinerea directa de filme subtiri oxidice multifunctionale

4	EUREKA (BIONANOCOMPOSITE!3033	University of Riga, Letonia	Hydroxyapatite nanocomposite ceramics – new implant material for bone substitute
5	ECO-NET	Franta	Dépôts de phosphates de calcium silicatés à usage de biomatériaux
6	FP6 – ERA- MNT-07 - 012/08	Technical University of Lodz, MUT Warsaw, Polonia	Advanced nanocomposites based on hydroxyapatite for applications in medicine
7	NATO CLG 982793	Institute of Nanonostructures Technology and Analytics, University of Kassel, Germania, University of Chemical Technology and Metallurgy, Sofia, Bulgaria	Nanocrystalline and amorphous thin films for sensor application
8	Romania - Slovenia „Cooperation In Science and Technology" 2008 - 2009	Jozef Stefan Institute, Slovenia	Ultrafast electronic and structural dynamics in thin films of charge density wave compounds
9	Bilateral „Scientific and Technological Cooperation" intre Cipru si Romania	University of Cyprus, Cipru	Nanostructured Thin Films Fabricated by Advanced Laser Techniques with Applications in Nanoelectronics, Spintronics, Biology and Medicine
10	Bilateral Romania-Rusia	Natural Sciences Center of General Physics Institute, Russian Academy of Sciences, Rusia	Laser interactions for new advanced applications in medicine, biology, and/or opto(nano)-electronics
11	Bilateral Romania-Serbia	Serbian Academy Of Sciences si arts and Physics Institute of Belgrade, Serbia	Laser produced plasma: spectroscopic diagnostics and applications in thin films deposition and characterizations
12	Bilateral Romania-Israel	Hebrew University of Jerusalem, Israeli Academy of Sciences and Humanism, Israel	Thin films and structures for medical, chemical and biological applications
13	Bilateral Romania-Cehia	Institute of Physics, Academy of Sciences, Cehia	Thin films obtained by pulsed laser deposition and matrix assisted pulsed laser evaporation
14	Bilateral Romania-Bulgaria	Institute of Electronics, Sofia, Bulgaria	Pulsed laser deposition of oxide thin films for gas sensing and optoelectronics applications
15	LASERLAB EUROPE 2	Laboratoare laser din UE / 23 de tari participante	Acces la facilitati Europene / laboratoare laser: LOA, PULS, LULI, etc.
16	STREP- Program cadru 7 al Comunitatii Europeene, FP7 Contract LSHB-CT-2006-037639	CE: Italia, Franta, Germania, Spania, Rusia	Bio-Imaging with Smart Functionalized Nanoparticles, Acronim BONSAI
17	Acord interguvernamental - Protocolul celei de a XV-a sesiuni a Comisiei mixte romano – italiene pentru	Italia – Universitatea "La Sapienza" - Roma	Proiect nr. 18 „Optical devices using spatial solitons and nonlinear interactions in photorefractive crystals for communication"

	cooperare stiintifica si tehnologica		
18	COST Action MP0702	20 centre europene, coord: Universitatea “La Sapienza” –Prof. Concita Sibilia	“Towards Functional Sub-Wavelength Photonic Structures”
19	Acord colaborare cu Universitatea Johannes Kepler – Linz	AUSTRIA	Procesari laser de materiale functionale
20	Acord colaborare cu Institutul Paul Scherrer – Zurich	ELVETIA	Studii de efect Hall pe filme functionale de ZnO
21	Acord colaborare cu Universitatea Southampton, in cadrul proiectului 3D-DEMO	ANGLIA	Obtinerea directa de filme subtiri oxidice multifunctionale
22	PC7- EURATOM	1) Germania, Institutul de Fizica Plasmei Max-Planck, Garching 2) UK, Culham Centre for Fusion Energy	Interpretation and control of helical perturbations in tokamaks
23	COST	Cooperare Europeana	Basic Concepts for Convection Parameterization in Weather Forecast and Climate Models
24	Acord de cooperare franco-roman intre INFLPR si INSP	Franta (Universitatea Paris 6)	Croissance de films d'oxydes transparents conducteurs
25	PC7- EURATOM	UK, Culham Centre for Fusion Energy, UPPSALA, Sweeden	Metodă bazată pe detectorii cu fluid supraîncălzit (DFSI) pentru diagnostica de neutroni a plasmei tokamak
26	STREP	CE Franta, Marea Britanie, Germania, Spania, Italia, Elvetia	New Elemental and Molecular Depth Profiling Analysis of Advanced Materials by Modulated Radio Frequency Glow Discharge Time of Flight Mass Spectrometry EMDPA
27	FP-7 EURATOM FUZIUNE WP09-PWI-07-01	Germania, Finlanda	STUDIUL INFLUENTEI TEMPERATURII SUBSTRATULUI IN TIMPUL DEPUNERII ASUPRA FORMARII DE ALIAJE STABILE Be/C, Be/W
28	FP-7 EURATOM FUZIUNE WP09-PWI-07-02	Germania, Finlanda	STUDIUL FORMARII SISTEMELOR TERNARE Be-C-W FOLOSIND METODA ARCULUI TERMOIONIC IN VID; INFLUENTA OXIGENULUI IN ACEST PROCES
29	Research services contract	USA, Acree Technologies Incorporated	Depunere strat anticoroziv foarte aderent pe inox
30	Programul pentru Tarile Europene Cooperante	Agentia Spatiala Europeana	“Growth and survival of coloured fungi in space – CFS.” [Experiment in the SURE project (AO-2006-022)]
31	Programul pentru Tarile Europene Cooperante	Agentia Spatiala Europeana	Scientific exploitation of the *Planck*-LFI data (Planck-LFI_SED)
32	Programul pentru Tarile Europene Cooperante	Agentia Spatiala Europeana	Kinetic and Experimental investigation of the Earth's and Venus's plasma layers (KEEV)
33	Programul pentru Tarile Europene Cooperante	Agentia Spatiala Europeana	Energy conversion and transfer in the solar wind – magnetosphere – ionosphere system (ECSTRA)

34	Programul pentru Tarile Europene Cooperante	Agentia Spatiala Europeana	Romanian GRID middleware repository for Space Science Applications (RoSpaceGRID)

Carti (capitole de carti), lucrari stiintifice publicate si participare la manifestări ştiinţifice

Nr. crt.	Carti	Numar de carti publicate in tara	Numar de carti publicate in strainatate
1		**1**	**3**
	Lucrari stiintifice publicate in reviste cu factor de impact ISI	**Numar de lucrari publicate in reviste din tara**	**Numar de lucrari publicate in reviste din strainatate**
1		**25**	**82**
	Manifestări ştiinţifice	**Număr de manifestări**	**Număr de comunicări**
	a) congrese internaţionale:	20	33
	b) simpozioane:	13	19
	c) seminarii, conferinţe;	56	84
	d) workshop	14	20

Brevete rezultate din tematica de cercetare:

Nr. crt.	Brevete înregistrate in tara (nr.)	Brevete acordate (nr.)
1	**2**	**1**

2010

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Denumirea proiectului	Tipul rezultatului	Efecte scontate
Instalatie pentru inscriere directa de micro/nanostructuri prin fotopolimerizare cu absorbtie de doi fotoni folosind laseri in femtosecunde	Produs	Inscriere de microstructuri prin fotopolimerizare cu absorbtie de doi fotoni. Realizare de microstructuri prin ablatie laser pe filme subtiri.
Instalatie cu laser in picosecunde pentru microprocesari de materiale	Produs	Microprocesari de materiale prin ablatie laser.
Tehnologie de laborator pentru realizarea de structuri de tip CRLH („composite right-left handed”) prin ablatia de filme subtiri cu laser in femtosecunde.	Tehnologie de laborator	Realizarea de dispozitive electronice tip CRLH in doneniul zeci –sute de GHz: filtre trece banda, cuploare, antene,etc.
Tehnologia de laborator pentru inscrierea de microstructuri prin fotopolimerizare de doi fotoni cu ajutorul unui laser in femtosecunde.	Tehnologie de laborator	Realizarea de structuri fotonice de tip cristale fotonice, cuploare optice, elemente difractive, sau microstructuri 3D cu aplicatii in medicina, biologie, microfluidica.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Studiu proiect	Elaborarea unor modele de studiu al plasmelor electronice de suprafata si al mecanismelor de generare a armonicilor de ordin superior rezultate

		prin interactia acestora cu fascicule laser foarte intense. Optimizarea proiectarii experimentelor de generare a radiatiilor ultraenergetice, cu perioade in domeniul atosecundelor.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	S-a realizat tehnologie controlata de iradierea laser, aplicare de fascicul laser cu parametrii energetici cunoscuti, studiu intercomparat al actiunii pe tesut a fasciculului laser (iradiere directa sau prin fibra optica) si radiofrecventa, permite stabilirea indicatiilor optime de tehnica chirurgicala.	Endoscopul de Contact si tomografia optica coerenta SROCT-Spectral Radar Coherence Tomography sunt minim invazive, ducand la scurtarea procesului de diagnosticare si a scaderii costului de investigare. Un impact major asupra diagnosticarii - procesului terapeutic l-a avut dezvoltarea fibrelor optice prin incorporarea in sisteme de vizualizare de dimensiuni foarte mici. Interventiile chirurgicale cu laser, pentru a avea un efect de distrugere minim, folosesc instrumente laser performante si cu parametrii bine controlati, precum si personal instruit. Au fost studiate *in vitro* caracteristicile interactiei radiatiei laser ultrascurte - tesut biologic si s-au realizat protocoale chirurgicale pentru diferite campuri de aplicatii (ORL, oftalmologie, etc).
Depunerea laser pulsata de filme subtiri de Mg pe colectori de Cu. Masurarea eficientei cuantice a filmelor pentru aplicatii in sursele de electroni de mare stralucire	Studii asupra compozitiei chimice si structurii filmelor de Mg pe diferiti suporti. Optimizare parametri (fluenta, presiune, gaz, distanta tinta-colector)	Obtinerea unui fotocatod de Mg direct in centrul unei flanse de Cu cu un diametru de 10 cm folosita in tunul RF
Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale.	studii	Tehnologii laser pentru obtinerea de nanomateriale, filme subtiri nanostructurate, nanostructuri 3D pentru obtinere de senzori, nanocompusi, elemente fotovoltaice nanostructurate, participare PC7, lucrari stiintifice si elaborari pe proceduri ISO 9001 de micro si nanotehnologii multifunctionale.
Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia	studiu proiect	➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; ➢ Similitudini in producerea de porozitati (microfisuri) in materialele anorganice si evidentiere unui mecanism fizic care guverneaza astfel de procese; ➢ Studiu teoretic privind interactia fotonilor si a particulelor accelerate cu fibrele optice (transformarea in forma de “banda” a fibrei optice prin incalzirea cu o sursa laser sau cu electroni accelerati) si masuratori de punere in evidenta a dependentei de lungimea de unda a gradului de degradare indus de campurile de radiatii; ➢ Obtinerea amidonului grefat cu polietilena in urma tratamentului cu fascicul de electroni accelerati; ➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din

		domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate;
Proiect PN 09.39.06.04: Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare.	studiu proiect	Imbogatirea bagajului de cunoastere stiintificae ub domeniul fizicii si astrofizicii, al matematicii aplicate in modelarile de fizica cosmica.
PN 09.39.06.05 Metode şi modele experimentale pentru simularea MEdiilor VIrtuale şi extragerea de cunoştinţe în beneficiul CONTRAmăsurilor pentru protecţia cosmonauţilor la efectul advers la zborul spaţial prelungit. (MEVICONTRA)	DEMONSTRATOR	-dezvoltarea metodologiilor şi tehnologiei utilizate în cadrul contramăsurilor vor ajuta la reducerea efectelor (miastenie, pierdere de calciu, de-condiţionare cardio-vasculară) microgravitaţiei în timpul zborului spaţial cu echipaj uman.
PN 09.39.06.06 Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) - SAPAGMES	2 studii;	1 aplicatie software dezvoltata in mediul de programare MATLAB.
PN 09.39.06.07 Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul nanosatelitilor aflati in zbor in formatie stransa**.**	-Studiu	„ Cubesat Applications Study” Identificarea directiilor de cercetare si dezvoltare de hardware si software pentru misiuni viitoare de nanosateliti

Valorificarea în producţie a rezultatelor obţinute:

Denumirea proiectului	**Tipul rezultatului**	**Utilizatori**	**Efecte socio-economice la utilizator**
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	S-a realizat o tehnologie controlata de iradiere laser, aplicare de fascicul laser cu parametrii energetici cunoscuti.	Beneficiarii acestor sisteme laser chirurgicale si a sistemului de radiofrecventa, sunt spitalele, clinicile de ORL dar si pacientii care	Utilizarea cunostintelor dobandite prin acest proiect va conduce la caracterizarea laserilor medicali printr-o selectie deliberată a parametrilor functionali (lungime de unda, regim de functionare, nivel de putere sau energie) pentru a

	Studiul intercomparat al actiunii pe tesut a fasciculului laser (iradiere directa sau prin fibra optica) si a radiofrecventei permit stabilirea indicatiilor optime de tehnica chirurgicala	sufera interventii ce nu necesita internare, se evita infectarea, sangerarea. Existand posibilitatea aplicarii tratamentului in ambulator, acest lucru duce la costuri mult reduse in raport cu alte tehnici medicale prin evitarea antibio-cortico-terapiei post-operatorii, a pansamentelor, a medicatiei antialgice, etc., adica economii importante aduse sistemului de ingrijiri medicale.	corespunde cerintelor clinice dorite. Aceasta abordare logica si pragmatica va inlocui cu siguranta unele practici prin care laserul este utilizat acolo unde nu este necesar sau nu corespunde, sau este aplicat in domenii clinice in care parametrii laserului respectiv nu indeplinesc cerintele metodologiei stabilite. Tehnicile laser si de radiofrecventa raspund cu prisosinta cerintelor pietei nationale si nu numai, de crestere a calitatii serviciului medical. Obiectivul major al acestui proiect a avut in vedre dezvoltarea si utilizarea procedurilor de chirurgie cu laser si radiofrecventa in domeniul ORL in aplicare monoterapeutica.
Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale”	1.Tehnici si modele pentru brazarea varfurilor de carbura de W pe discuri de taiere; 2.Elaborarea procesului de injectie de particole de W pe suprafete active.	METAV S.A. si METAV C.A. in cadrul proiectului 71-138/2007 „ LASERBIOCER”	Obtinerea unui portofoliu de date pe baza caruia sa se poata trece la proiectarea si realizarea de noi tehnologii de prelucrare cu laser destinate aplicatiei in mediul industrial romanesc.

Participarea la colaborări internaţionale (2010):

Nr. crt.	Denumirea programului internaţional	Ţară şi/sau CE unităţi colaboratoare	Denumire proiect
1	FP7-Infrastructures-2007-1-212105	Franta, Anglia, Spania, Portugalia, Italia, Grecia, Bulgaria, Germania, Lituania, Polonia, Romania, Ungaria, Republica Ceha	ELI-Extreme Light Infrastructure, Preparatory Phase
2	LASERLAB2	26 institutii in 16 tari in Europa http://www.laserlab-europe.net/	Joint Research Activities for X-ray lasers (SFINX)
3	COST MP0601	100 de persoane din 40 de institutii din 15 tari; http://www.shortwavelengthsources.net/	Short Wavelength Laboratory Sources
4	Facility for Antiprotons and Ions Research (FAIR)	103 instituţii, 31 ţări, 272 participanţi http://www-linux.gsi.de/~sparc/collaboration.pdf	Stored Particles Atomic Physics Research Collaboration (**SPARC** – FAIR)
5	IAEACoordinated Research Programm “ PATHWAYS TO ENERGY FROM INERTIAL FUSION – AN INTEGRATED	Japonia USA Anglia Franta Ungaria Rusia	Contract 14655/RO: Laser-atom, laser-plasma interaction related to target physics and fast ignition

	APPROACH, CRP project no**. F1.30.11**	Italia	
6	European Science Foundation: P E SC	Belgia Franta Germania Italia	Super-intense laser-matter interactions (SILMI)
7	COST BM0701 ATENS	17 tari UE si asociate	Antibiotic transport and efflux: new strategies to combat bacterial resistance
8	Acord colaborare cu Universitatea Johannes Kepler – Linz	AUSTRIA	Procesari laser de materiale functionale
9	Acord colaborare cu Institutul Paul Scherrer – Zurich ; proiexct european e-LIFT	ELVETIA	Procesare de polimeri (e-LIFT)
10	Acord colaborare cu Universitatea Southampton, in cadrul proiectului 3D-DEMO	ANGLIA	Obtinerea si caracterizarea de filme subtiri oxidice multifunctionale
11	Acord de colaborare cu Institutul de Acustica „O.M. Corbino" Roma; proiect european e-LIFT	ITALIA	Matrici de senzori de gaz realizate prin tehnologia de transfer inainte indus laser (e-LIFT)
12	Parteneriat IFA- CEA Saclay Bat 52291191, Gif/Yvette Cedex, in cadrul programului Capacitati, Modul III	FRANTA	Nanoparticule pe baza de dioxid de Ti dopat cu aplicatii pentru celule fotovoltaice sau elemente bactericide
13	COST P21, Physics of Droplets	17 tari UE si asociate	Physics of Droplets
14	Proiect Bilateral Romania - Franta 2009-2010, PN II, Programul Capacitati, Modul III	Franta	New nonlinear laser systems for efficient laser emission generation in visible and near ultraviolet domains
15	Colaborare interdisciplinara intre CNES (Centre national d'études spatiales), ISS (Institutul de Stiinte Spatiale) si INCS (Institutul National de Cercetare pentru Sport).	Franta	PN 09.39.06.05 Metode şi modele experimentale pentru simularea MEdiilor VIrtuale şi extragerea de cunoştinţe în beneficiul CONTRAmăsurilor pentru protecţia cosmonauţilor la efectul advers la zborul spaţial prelungit. (MEVICONTRA)

Lucrari publicate in reviste cu factor de impact ISI si participari la manifestări ştiinţifice (2010)

Nr. crt.	**Lucrari stiintificae cu factor de impact ISI**	**Numar de lucrari publicate in reviste din tara**	**Numar de lucrari publicate in reviste din strainatate**
	111	**40**	**71**
	Carti	**Nr carti**	
		4	
	Manifestări ştiinţifice	**Număr de manifestări**	**Număr de comunicări**
	a) congrese internaţionale:	**42**	**50**
	b) simpozioane:	**2**	**2**
	c) seminarii, conferinţe;	**41**	**63**
	d) workshop	**11**	**13**

Brevete rezultate din tematica de cercetare:

Nr. crt.	Specificaţie	Brevete înregistrate (nr.)	Brevete acordate (nr.)	Brevete vândute (nr.)
	- în ţară:	7		
	In strainatate		1	
	Total:	**7**	**1**	

2011

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Denumirea proiectului	Tipul rezultatului	Efecte scontate
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Elaborare de metode de calcul	Simularea exacta a generarii radiatiilor de energii mari
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Studiu	Manipularea si controlul fronturilor de unda laser intense folosind optica adaptiva, difractiva si metode interferometrice.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Studiu	Focalizarea optima a fasciculelor laser intense
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Studiu	Caracterizarea spectrelor de emisie ale materialelor prin metoda LIBS („laser induced breakdown spectroscopy”)
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Elaborare metoda experimentala	Generare eficienta de radiatie laser X prin iradierea unor tinte solide cu pulsuri laser ultrascurte multiple.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Elaborare metoda experimentala	Realizarea de tinte pentru experimente cu laseri cu pulsuri ultrascurte.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Elaborare montaje experimentale	Realizarea unor sisteme opto-mecanice pentru transmiterea radiatiei laserilor cu pulsuri ultrascurte la statiile de lucru si camerele de interactie.
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	Metoda si tehnologie	Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale

Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia	studiu proiect	➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; ➢ Similitudini in producerea de porozitati (microfisuri) in materialele anorganice si evidentiere unui mecanism fizic care guverneaza astfel de procese; ➢ Studiu teoretic privind interactia fotonilor si a particulelor accelerate cu fibrele optice (transformarea in forma de “banda” a fibrei optice prin incalzirea cu o sursa laser sau cu electroni accelerati) si masuratori de punere in evidenta a dependentei de lungimea de unda a gradului de degradare indus de campurile de radiatii; ➢ Obtinerea amidonului grefat cu polietilena in urma tratamentului cu fascicul de electroni accelerati; ➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate;
Metode si tehnologii laser de sintetizare si procesare de noi nanomateriale multifunctionale	studii	Tehnologii laser pentru obtinerea de nanomateriale, filme subtiri nanostructurate, nanostructuri 3D pentru obtinere de senzori, nanocompusi, elemente fotovoltaice nanostructurate, participare PC7, lucrari stiintifice si elaborari pe proceduri ISO 9001 de micro si nanotehnologii multifunctionale.
Efecte macroscopice de interes fundamental si aplicativ ale interactiei electronilor accelerati cu materia	studiu proiect	➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; ➢ Similitudini in producerea de porozitati (microfisuri) in materialele anorganice si evidentiere unui mecanism fizic care guverneaza astfel de procese; ➢ Executarea lentilei L1 conform schemelor de executie realizate; ➢ Studiu teoretic privind interactia fotonilor si a particulelor accelerate cu fibrele optice (transformarea in forma de “banda” a fibrei optice prin incalzirea cu o sursa laser sau cu electroni accelerati) si masuratori de punere in evidenta a dependentei de lungimea de unda a gradului de degradare indus de campurile de radiatii; ➢ Studiul influentei radiatiilor si a defectelor create asupra proprietatilor fibrelor optice; ➢ Obtinerea amidonului grefat cu polietilena in urma tratamentului cu fascicul de electroni accelerati; ➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; ➢ Elaborarea de lucrari stiintifice originale pentru publicare si prezentarea la congrese si simpozioane internationale;

Cercetari ale tratarii combinate cu electroni accelerati si microunde a mediilor materiale cu aplicatii in protectia mediului si medicina	studiu proiect	➢ Generarea de cunostinte stiintifice noi, dezvoltarea si aprofundarea directiilor de cercetare in cadrul disciplinelor de baza din domeniul fizicii aplicate: fizica atomica si moleculara, fizica fasciculelor accelerate; ➢ Elaborarea de lucrari stiintifice originale pentru publicare si prezentarea la congrese si simpozioane internationale; ➢ Dezvoltarea unei metode noi de tratare a apelor reziduale si de suprafata, metoda ce utilizeaza amestecuri polielectroliti (obtinuti prin metode diferite de polimerizare) cu un spectru larg de caracteristici fizico-chimice; (5) Noi materiale cu utilizari speciale in tratarea apelor reziduale si de suprafata de puritate ridicata si proprietati performante ➢ Experimentarea de modele care sa permita investigarea efectelor iradierii cu MU asupra unor culturi celulare in timpul iradierii; ➢ Preconizam ca iradierea cu EA si/sau MU pentru eliminarea COV din gaze este potential capabila sa conduca la rezultate si beneficii insemnate in imbunatatirea sanatatii publice si a calitatii vietii.
PN 09.39.06.02 "*Fragmentare si clusterizare de la nucleu la parton*"	studiu proiect	Dezvoltarea domeniului clusterizarii si fragmentarii nucleare
PN 09.39.06.04: Modelari analitice si numerice de evolutie dinamica, cinetica si echilibru in conditii specifice spatiului cosmic - procese induse, structuri de scala mare.	studii proiect, modele, aplicatii software	Imbogatirea bagajului de cunoastere stiintifica in domeniul fizicii si astrofizicii, al matematicii aplicate in modelarile de fizica cosmica.
PN 09.39.06.05 Metode si modele experimentale pentru simularea MEdiilor VIrtuale si extragerea de cunostinte in beneficiul CONTRA masurilor pentru protectia cosmonautilor la efectul advers la zborul spatial prelungit. (MEVICONTRA).	Masuratori, interpretare, concluzii, strategie de continuare	1. dezvoltarea metodologiilor şi tehnologiei utilizate în cadrul contramăsurilor vor ajuta la reducerea efectelor (miastenie, pierdere de calciu, de-condiţionare cardio-vasculară) microgravitaţiei în timpul zborului spaţial cu echipaj uman. 2. punerea în evidenţă a altor aplicaţii care susţin utilizarea mediilor virtuale pentru control mental avansat în vederea contramăsurilor şi a altor tipuri de antrenamente speciale. **3.** identificarea direcţiilor de cercetare pentru obiectivizarea şi dirijarea controlată a antrenamentelor cu rădăcini în tehnici tradiţionale de creştere a controlului neuro-motor, a celui mental şi a interacţiilor intre cele două tipuri de performanţă (somatică şi mentală)
PN 09.39.06.06 Sateliti Artificiali ai Pamantului: Aplicatii de tip GMES (Global Montoring for Environment and Security) – SAPAGMES	studii;	1 aplicatie software dezvoltata in mediul de programare MATLAB; 1 o aplicatie software care permite segmentarea semiautomata a imaginilor satelitare;
PN 09.39.06.07 Cercetarea si dezvoltarea de tehnologii si aplicatii spatiale prin valorificarea sistemelor de achizitie si procesare distribuita la bordul	Proceduri de testare	Realizarea documentatie specifice testelor mecanice de acceptanta si calificare in vederea lansarii nanosatelitilor.

nanosatelitilor aflati in zbor in formatie stransa		

1.1. Valorificarea în producţie a rezultatelor obţinute (2011):

Denumirea proiectului	**Tipul rezultatului**	**Utilizatori**	**Efecte socio-economice la utilizator**
Dezvoltarea de sisteme laser in femtosecunde, studii si cercetari in domeniul luminii extreme	S-a realizat o tehnologie controlata de iradiere laser, aplicare de fascicul laser cu parametrii energetici cunoscuti. Studiul intercomparat al actiunii pe tesut a fasciculului laser (iradiere directa sau prin fibra optica) si a radiofrecventei permit stabilirea indicatiilor optime de tehnica chirurgicala	Beneficiarii acestor sisteme laser chirurgicale si a sistemului de radiofrecventa, sunt spitalele, clinicile de ORL dar si pacientii care sufera interventii ce nu necesita internare, se evita infectarea, sangerarea. Existand posibilitatea aplicarii tratamentului in ambulator, acest lucru duce la costuri mult reduse in raport cu alte tehnici medicale prin evitarea antibio-cortico-terapiei post-operatorii, a pansamentelor, a medicatiei antialgice, etc., adica economii importante aduse sistemului de ingrijiri medicale.	Utilizarea cunostintelor dobandite prin acest proiect va conduce la caracterizarea laserilor medicali printr-o selectie deliberată a parametrilor functionali (lungime de unda, regim de functionare, nivel de putere sau energie) pentru a corespunde cerintelor clinice dorite. Aceasta abordare logica si pragmatica va inlocui cu siguranta unele practici prin care laserul este utilizat acolo unde nu este necesar sau nu corespunde, sau este aplicat in domenii clinice in care parametrii laserului respectiv nu indeplinesc cerintele metodologiei stabilite. Tehnicile laser si de radiofrecventa raspund cu prisosinta cerintelor pietei nationale si nu numai, de crestere a calitatii serviciului medical. Obiectivul major al acestui proiect a avut in vedre dezvoltarea si utilizarea procedurilor de chirurgie cu laser si radiofrecventa in domeniul ORL in aplicare monoterapeutica.

Participarea la colaborări internaţionale (2011):

Nr. crt.	**Denumirea programului internaţional**	**Ţară şi/sau CE unităţi colaboratoare**	**Denumire proiect**
1	LASERLAB2	26 institutii in 16 tari in Europa http://www.laserlab-europe.net/	Joint Research Activities for X-ray lasers (SFINX)
2	COST MP0601	100 de persoane din 40 de institutii din 15 tari http://www.shortwavelengthsources.net/	Short Wavelength Laboratory Sources
3	Facility for Antiprotons and Ions Research (FAIR)	103 instituţii, 31 ţări, 272 participanţi: http://www-linux.gsi.de/~sparc/collaboration.pdf	Stored Particles Atomic Physics Research Collaboration (**SPARC** – FAIR)
4	Acord colaborare cu CNR Istituto dei Sistemi Complessi	ITALIA	Filme subtiri cu proprietati piezoelectrice si feroelectrice

5	FP7- ENSAR	Olanda, Franta, Germania, Belgia, Spania, Romania, Ungaria	Simulations for Nuclear Reactions and Structure in Europe (SiNuRSE)

Carti, lucrari, participari la manifestari stiintifice

Nr. crt.	Manifestări ştiinţifice	Număr de manifestări	Număr de comunicări
	a) congrese internaţionale:	**22**	**45**
	b) simpozioane:	**2**	**2**
	c) seminarii, conferinţe;	**21**	**33**
	d) workshop	**9**	**11**
	Carti	**Numar carti publicate**	
		6	
	Lucrari stiintifice	**In tara**	**In strainatate**
		16	**50**

Brevete rezultate din tematica de cercetare:

Nr. crt.	Brevete înregistrate (nr.) in tara	Brevete acordate (nr.)	Brevete vândute (nr.)
	1		
	Brevete inregistrare in strainatate	**Brevete acordate (nr)**	**Brevete vandute (nr)**
	1	**1**	

2012

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Nr. Crt.	Produs/serviciu/ tehnologie	Date tehnice	Domeniu de utilizare
1.	Senzor cu unde acustice de suprafata pentru detectia hidrogenului	Limita de detectie – 50 ppm Timp raspuns – 10-50 secunde	Industria auto, industra metalurgica, agentii de mediu
2.	Furnizor servicii	"Îmbunătăţirea modului de realizare a nanostructurilor pentru elemente de securizare difractive folosite pentru protecţia bunurilor şi a mărcilor"– cod proiect PN-II-IN-CI-2012-1- 231.	Materiale, procese si produse inovative
3.	Statie automata pentru masurarea pragului de distrugere in camp laser (PDCL) al componentelor optice prin iradiere cu pulsuri laser de nanosecunde conform ISO 21254:2011	- Lungimi de unda a laser: 1064 nm; 532 nm; 355 nm. - Durate de puls: 4 ns – 6 ns. - Frecv. de rep. a pulsurilor laser: 10 Hz.	- Masurare PDCL prin Testul S-on -1 (ISO 21254-2). - Test fiabilitate incamp laser (tip 2) conform ISO21254-3.
4.	Statie automata pentru masurarea PDCL al componentelor optice prin iradiere cu pulsuri laser de femtosecunde conform ISO 21254:2011	- Lungime de unda a laser: 775 nm. - Durata de puls: 200 fs. - Frecv. de rep. a pulsurilor laser: 2 kHz	- Masurare PDCL prin Testul S-on -1 (ISO 21254-2).
5.	Dispozitiv de diagnoza fascicul pentru masurarea parametrilor energetici, spatiali si temporali de fascicul laser conform standardelor ISO 11554:2006 si 11146:2005	- Lungimi de unda: intre 350 nm si 1100 nm. - Durate de puls: unda continua - nanosecunde si femtosecunde (> 100 fs).	- Masurare parametri energetici si temporali de fascicul conform ISO 11554. - Masurare parametri spatiali de propagare conform ISO 11146

6.	Masuratori de spectre de absorbtie UV/VIS/NIR	200-3500 nm	Optica, Fizica laserilor, Domenii conexe
7.	Tehnologie de laborator privind modificarea medicamentelor prin expunere la radiatie laser	Lungimi de unda de iradiere [nm]/Energie [mJ]/Doza de iradiere [J/cm^2] 1064 / 1.36 / (60 – 900) 355 / 30 266 + 532 / 20 266 / (3 – 7)	Biomedicina, Stiintele vietii, Stiinte Biomoleculare
8.	Dezvoltarea unei tehnologii de cromatografie in strat subtire (TLC) pentru masurarea polaritatii componentelor solutiilor de medicamente expuse la radiatie laser	Detectie: 254 nm, 366 nm	Optofluidica, Stiintele vietii, Protectia Mediului
9.	Tehnologie de generare de micropicaturi care contin solutii de coloranti si de medicamente	Acuratete: ±1%; Precizie: ±0.2%; Rezolutie: (25 – 1) µL	Optofluidica, Biomedicina Stiintele vietii
10.	Dezvoltarea unei tehnologii de masurare a tensiunii superficiale a micropicaturilor ce contin solutii de medicamente	Volum al micropicaturii: 2- 5 microlitri; solutii de fenotiazine in apa la concentratii 20mg/ml. Acuratete: ±1%;	Optofluidica, Biofizica, Stiintele vietii, Protectia Mediului
11.	Nanopulbere pe baza de fier	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: C, O	Nanotehnologie, nanomedicina
12.	Nanopulbere pe baza de oxid de fier	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C	Nanotehnologie, nanomedicina
13.	Nanopulbere pe baza de oxid de fier - superparamagnetica	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C	Nanotehnologie, nanomedicina
14.	Nanopulbere pe baza de oxid de titan	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C, Cl	Nanotehnologie
15.	Nanopulbere pe baza de oxid de staniu	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: C	Nanotehnologie
16.	Nanopulbere pe baza de carbon	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: O	Nanotehnologie
17.	Nanopulbere pe baza de fier invelit in carbon	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: O	Nanotehnologie
18.	Serviciu microscopie electronica de baleiaj	0-30 kV, posibilitate de lucru la vid inalt si scazut, spectrometru EDX	Investigare morfologie suprafete
19.	Tehnologie sinteza de nanoparticule prin piroliza laser	Laser CW si pulsat; λ=10.6 µm; Duze cu sectiune circulara si recatangulara cu trei cai; Control exact asupra fluxurilor de gaze si presiunii; Posibilitate de scalare.	Nanotehnologie
20.	Tehnologie dispersie nanoparticule in solutii apoase	Stabilitate ridicata (|ξ|>50 mV); concentratii pana la 10 wt%; surfactanti anionici si cationici	Nanotehnologie, nanomedicina
21.	Serviciu polisare optica suprafete	Planeitate >λ/20; Rugozitate > 100 nm; Orice material	Optica, depuneri filme subtiri
22.	Sistem electrostatic de recuperare nanopulberi	Diametre intre 2 si 100 nm, Productivitate mare > 4h, Recuperare 99.9%	Nanotehnologie

Valorificarea în producţie a rezultatelor obţinute (2012):

Nr. Crt.	Titlu	Operator economic	Nr. Contract/ Protocol

1	The Romanian Strategy in Nanotechnology "NANOPROSPECT" – Section Photonics	IMT-ANCS	210/2010
2	Metodologie de aplicare a solutiilor de medicamente expuse la radiatie laser asupra culturilor de bacterii gram-pozitive	INFLPR	LAPLAS 3-PN 09 33
3	Procedura de stocare/manipulare, studiere si distrugere a culturilor de bacterii	INFLPR	LAPLAS 3-PN 09 33

Participarea la colaborări internaţionale:

Nr. crt.	Denumirea programului internaţional	Ţară şi/sau CE unităţi colaboratoare	Denumire proiect
1	LASERLAB2	26 institutii in 16 tari in Europa http://www.laserlab-europe.net/	Joint Research Activities for X-ray lasers (SFINX)
2	COST MP0601	100 de persoane din 40 de institutii din 15 tari, http://www.shortwavelengthsources.net/	Short Wavelength Laboratory Sources
3	Facility for Antiprotons and Ions Research (FAIR)	103 instituţii, 31 ţări, 272 participanţi http://www-linux.gsi.de/~sparc/collaboration.pdf	Stored Particles Atomic Physics Research Collaboration (**SPARC** – FAIR)
4	ESA Cosmic Vision Programme	Euclid Consortium (tari membre ESA)	Euclid Mission
5	The Worldwide LHC Computing Grid (WLCG)	CERN - countries member	Computing Grid (WLCG)
6	COST MP1204	36 institutii 15 tari	TERA MIR

Cărţi (capitole carti), lucrari stiintifice publicate, participare la manifestari stiintifice (2012):

Nr. crt.	Manifestări ştiinţifice	Număr de manifestări	Număr de comunicări
1	a) congrese internaţionale:	**45**	**45**
2	b) simpozioane:	**2**	**2**
3	c) seminarii, conferinţe;	**24**	**45**
4	d) workshop	**8**	**10**
	Carti	**Numar de carti in tara**	**Numar de carti in strainatate**
			5
	Articole	**Numar articole publicate in reviste ISI din tara**	**Numar articole publicate in reviste ISI din strainatate**
	234	**48**	**186**

Brevete rezultate din tematica de cercetare:

Nr. crt.	Brevete înregistrate in tara (nr.)	Brevete acordate in tara (nr.)
1	10	2

2013

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Nr. Crt.	Produs/serviciu/ tehnologie	Date tehnice	Domeniu de utilizare
1	Masurari ISO de prag de distrugere in camp laser (PDCL) pe componente optice	1.Teste S-on-1 (ISO 21254-2): total 75 teste efectuate in 2013 pe statia automata in pulsuri de nanosecunde (finalizate cu rapoarte de test trimise beneficiarului Ophir Optics SRL), din care: la 64 teste la 1064 nm; 7 teste la 532 nm; 4 teste la 355nm 2. Teste Fiabilitate tip 2 (ISO 21254-3): total 12 teste efectuate in 2013 pe statia automata in pulsuri de nanosecunde (finalizate cu rapoarte de test trimise beneficiarului), din care: 6 teste la 1064 nm pentru Ophir Optronix Israel; 6 teste la 1064 nm si 532 nm pt Ophir Optics SRL.	Servicii efectuate de Laboratorul ISOTEST pentru companii producatoare de optica (Ophir Optics SRL, subsidiar Newport Corp. USA; Ophir Optronix Israel**)**
2	Executare tratamente termice de topire si recoacere a unor sticle oxidice dopate cu pamanturi rare.	Contract: 3/24.04.2013, executant INFLPR, Beneficiar INOE, Valoare: 24 650 lei	Optoelectornica
3	Prelucrari optice	Contract: 3/24.04.2013, executant INFLPR, Beneficiar INOE, Valoare: 24 650 lei	Optoelectronica
4	Taiere cu laser a unor plachete de siliciu in format 10 x 10 mm	Contract: 8947/09.07.2013, executant INFLPR, Beneficiar: Universitatea Transilvania Brasov Valoare: 283 lei	Optica, Nanofotonica
5	Debitare a 30 de discuri de Al	grosime 0,8 mm, Contract 8/12.11.2013, executant INFLPR, Beneficiar: Institutul National de Cercetare Dezvoltare Aerospatiala (INCAS), Valoarea : 710,89	Industria Aerospatiala
6	Determinare prag de distrugere in camp laser a componentelor optice		Contract prestari servicii SC Ohir Optics SRL
7	Nanopulbere pe baza de fier	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: C, O	Nanotehnologie, nanomedicina
8	Nanopulbere pe baza de oxid de fier	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C	Nanotehnologie, nanomedicina
9	Nanopulbere pe baza de oxid de fier - superparamagnetica	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C	Nanotehnologie, nanomedicina
10	Nanopulbere pe baza de oxid de titan	Diametre intre 5 si 20 nm; Puritate >90%; Impuritati: C, Cl	Nanotehnologie
11	Nanopulbere pe baza de oxid de staniu	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: C	Nanotehnologie
12	Nanopulbere pe baza de carbon	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: O	Nanotehnologie
13	Nanopulbere pe baza de fier invelit in carbon	Diametre intre 5 si 20 nm; Puritate >80%; Impuritati: O	Nanotehnologie
14	Serviciu microscopie electronica de baleiaj	0-30 kV, posibilitate de lucru la vid inalt si scazut, spectrometru EDX	Investigare morfologie suprafete

15	Tehnologie sinteza de nanoparticule prin piroliza laser	Laser CW si pulsat; λ=10.6 μm; Duze cu sectiune circulara si recatangulara cu trei cai; Control exact asupra fluxurilor de gaze si presiunii; Posibilitate de scalare.	Nanotehnologie
16	Tehnologie dispersie nanoparticule in solutii apoase	Stabilitate ridicata (|ξ|>50 mV); concentratii pana la 10 wt%; surfactanti anionici si cationici	Nanotehnologie, nanomedicina
17	Serviciu polisare optica suprafete	Planeitate >λ/20; Rugozitate > 100 nm; Orice material	Optica, depuneri filme subtiri
18	Sistem electrostatic de recuperare nanopulberi	Diametre intre 2 si 100 nm, Productivitate mare > 4h, Recuperare 99.9%	Nanotehnologie
19	Elaborarea si aplicarea la piese prototip a unei tehnologii de producere a straturilor marker Mo/C pentru determinarea eroziunii peretelui Autori: C.Ruset si E.Grigore	- Structura dublu strat: Mo – 0.35 μm, C – 6 μm - Metoda de depunere: Pulverizare magnetron combinata cu implantarea ionica (CMSII) - Temperatura de depunere: 350-400 °C - Zona de depunere: Φ400x370 mm	Stellarator-ul Wendelstein 7-X de la Greiswald, Germania, Beneficiar: Institutul Max-Planck de Fizica Plasmei, Garching, Germania. Order No. 01/700/4500219983 din 12.04.2013, Invoice No.200297/14.11.2013, Valoare: 15.072,54 EUR
20	Studiu tehnologic privind recuperearea (indepartare strat W si re-depunere) unor placi din peretele tokamak-ului ASDEX Upgrade expuse la plasma un timp foarte indelungat (> 5 ani). Autori: C.Ruset si E.Grigore	- Indepartarea stratului de W s-a facut prin sablare cu bile de sticla urmata de re-profilarea mecanica a suprafetelor expuse plasmei. - Re-acoperirea cu straturi de W de 10-15 μm a zonelor de interes utilizand o tehnologie CMSII modificata.	Tokamak ASDEX Upgrade, Germania Beneficiar: Institutul Max-Planck de Fizica Plasmei, Garching, Germania, Order No. 01/700/4500223730/ 19.08.2013, Invoice No.200266/10.09.2013, Valoare: 7286,40 EUR
21	Metoda si dispozitiv pentru masurarea neinvaziva a grosimii straturilor de wolfram de pana la 30 microni	Limite de masura: 10 nm - 30 μm Probe de dimensiuni mari, inclusiv componente intregi ale primului perete tokamak (250x250 mm^2)	Ingineria suprafetelor, tehnologia de fuziune
22	Platforma educationala colaborativa	Permite dezvoltarea de proiecte educationala in format colaborativ	Educatie in domeniul stiintelor in invatamantul preuniversitar

ISS

Denumirea proiectului	Tipul rezultatului	Efecte scontate
Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 1 (L 1010)**: Studiul uniformittii senzorului de GaAs; Studiul fragmentarii nucleelor relativiste Studiul reconstructiilor sistemelor multiparticula relativiste; Studii de fizica si detectoristica la viitorul accelerator electron-pozitron (e+e-) accelerat la scara de TeV.	Determinarea raportului semnal zgomot; Reconstructia traselor electronlor de intereractie cu Pad-urile senzorului de GaAs; Dezvoltarea de sisteme de detectie in ISS.
Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 2 (L 1020):** Studiu proiect, model experimental, software de simulare	Posibilitatea trecerii la optimizarea detectorului şi la teste de nivelmetrie in teren

Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 3 (L1010):** Determinarea analitica a comportarii asimptotice a functiilor de corelatie in diferite sisteme ultrareci; Caracterizarea microfazelor obtinute in suspensiile coloidale bazate pe interactiuni competitive; Elaborare de modele fizico-matematice pentru studiul controlului coerent al atomilor utilizand trenuri de pulsuri laser ultrascurte; Controlul populatiilor si coerentei atomice prin trenuri de pulsuri laser cu perioada scurta de repetitie; Studiul inducerii unei dinamici coerente in sisteme moleculare ultrareci utilizand pulsuri laser modulate in frecventa; Propuneri teoretice si simulari numerice.	Calcularea lungimilor de corelatie ale gazelor bozonice unidimensionale; Constructia diagramelor de faza pentru diverse tipuri de suspensii coloidale bazate pe interactiuni competitive; Evidentierea de noi efecte de acumulare coerenta a populatiilor si a coerentei atomice cu rol esential in studiul controlului proceselor atomice aflate in interactiune cu pulsuri laser; Noi preparari cuantice in molecule ultrareci; identificarea de stari cuantice robuste fata de fenomene de decoerenţă.
Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 4 (L1040)**: Testare prototipuri	Validare proiect, îmbunătăţirea reproductibilităţii parametrilor, creşterea acurateței de măsură a timpului de zbor.
Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 5 (L 1050)**: Posibile dezvoltări de studii şi chiar tehnologii software cu efecte concretizate în Tehnologiile Knowledge & Information Management din Systems Engineering şi Concurrent Engineering.	Eficientizarea proceselor decizionale, creării şi transmiterii de cunoştinţe în desfăşurarea proiectelor aerospaţiale prin posibile implementări software.
Cercetări Teoretice şi Experimentale de Fizică Spaţială	**Tematica 6 (L1060):** Studiu, aplicaţie software RobiSAT-1	Analiza evoluţiei distanţelor dintre sateliţi după lansare (cazul constelației QB50) pentru evaluarea comunicațiilor între sateliți și interferenţelor radio; Determinarea stabilităţii orbitelor preliminare pentru zborul satelitar in formaţie folosind algoritmi genetici; Modelarea mișcării unei formații de 3 sateliţi; Dezvoltarea unei aplicaţii software bazata pe un algoritm genetic care să optimizeze alegerea datelor inițiale; Determinarea condiţiilor iniţiale pentru păstrarea naturală a zborului în formaţie pe o perioada cât mai lungă de timp (2 ani) în cadrul unor limite prestabilite.

Valorificarea în producţie a rezultatelor obţinute (2013):

Denumirea proiectului	Tipul rezultatului	Utilizatori	Efecte socio-economice la utilizator
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Elaborarea si aplicarea unei tehnologii de durificare superficiala in plasma a suprafetelor interioare la cilindrii lungi (l<2,3 m) de la masinile de injectie material plastic; Autori: C.Ruset si E.Grigore	SC ELUR SRL, Braila	Factura Nr.200010/14.02.2013, Valoare: 20.671,54 lei Factura Nr. 200264/05.09.2013, Valoare: 14.665,02 lei
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor,	Debitare a 30 de discuri de Al	Contract 8/12.11.2013, executant INFLPR, Beneficiar: Institutul National de Cercetare Dezvoltare Aerospatiala (INCAS), Valoarea : 710,89	dezvoltarea capabilitatilor tehnologice in Industria Aerospatiala

nanometrologie si depoluarea mediului			
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Prelucrari optice	Contract: 3/24.04.2013, executant INFLPR, Beneficiar INOE, Valoare: 24 650 lei	Optoelectronica
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Taiere cu laser a unor plachete de siliciu in format 10 x 10 mm	Contract: 8947/09.07.2013, executant INFLPR, Beneficiar: Universitatea Transilvania Brasov Valoare: 283 lei	Optica, Nanofotonica
Tematica 4 (L1040)	Producţia pentru experimentul CBM planificată în 2015	Consorţiul FAIR	O parte semnificativă a sistemului de detecţie pentru experimentul CBM se va realiza la IFIN–HH.
Tematica 6 (L1060)	aplicație software **RoBiSĂT-1**	ISS	

Participarea la colaborări internaţionale (2013):

Nr. crt.	**Denumirea programului internaţional**	**Ţară şi/sau CE unităţi colaboratoare**	**Denumire proiect**
1	Capacitati, Modulul III – Cooperari bilaterale „Brancusi"; Roamania – Franta /	INFLPR – Institute of Systems and Synthetic Biology - iSSB GENOPOLE, Evry, France	Spectral Analysis of Periodic EPI-Organization of Genomes
2	Capacitati, Modulul III – Cooperari bilaterale Romania Italia	INFLPR – CNR – IENI Genova, Italy	Laser beam interaction with microdroplets having controlled content
3	COST MP1106	35 tari participante din Europa	Smart and green interfaces - from single bubbles and drops to industrial, environmental and biomedical applications
4	COST MP1205	35 tari participante din Europa	Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics
5	LASERLAB2	26 institutii in 16 tari in Europa http://www.laserlab-europe.net/	Joint Research Activities for X-ray lasers (SFINX)
6	COST MP0601	100 de persoane din 40 de institutii din 15 tari http://www.shortwavelengthsources.net/	Short Wavelength Laboratory Sources
7	Facility for Antiprotons and Ions Research (FAIR)	103 instituţii, 31 ţări, 272 participanţi http://www-linux.gsi.de/~sparc/collaboration.pdf	Stored Particles Atomic Physics Research Collaboration (**SPARC** – FAIR)

8	ESA Cosmic Vision Programme	Euclid Consortium (tari membre ESA)	Euclid Mission
9	The Worldwide LHC Computing Grid (WLCG)	CERN - countries member	Computing Grid (WLCG)
10	COST MP1204	36 institutii 15 tari	TERA MIR
11	The European Joint Undertaking for ITER and the Development of Fusion Energy (F4E) - Braoader Approach	CE, INFLPR	Quality Control Monitoring of NbTi Strands for JT-60SA TF Coils: „Extended geometry", F4E-BAO-005-01 (MS-MG)
12	COST MP1101	21 tari	Biomedical Applications of Plasma Technology
13	COST FP1006	26 tari UE, 3 Near Neighbour Countries, 2 International Partner Countries	Bringing new functions to wood through surface modification
14	COST TD 1208	25 tari	Electrical discharges with liquids for future applications
15	FP7 - RNR	33 tari/ 300 orase europene	Eurpean Researchers Night Science- The great escape
16	FAIR	10 ţări, v. site FAIR	CBM
17	FP7/Hadron Physics 3	17 ţări, v. site HP3	ADAMAS

Carti si lucrari publicate, participari la manifestari stiintifice

Nr. crt.	**Manifestări ştiinţifice**	**Număr de manifestări**	**Număr de comunicări**
	a) congrese internaţionale:	**50**	**55**
	b) simpozioane:	**3**	**3**
	c) seminarii, conferinţe;	**22**	**22**
	d) workshop	**8**	**8**
	Carti	**Nr carti publicate in tara**	**Nr carti publicate in strainatate**
			5
	Lucrari	**Lucrari publicate in tara**	**In strainatate**
	240	**54**	**186**

Brevete rezultate din tematica de cercetare (2013):

Nr. Crt	**Brevete**	**Inregistrare in tara**	**acordate**
		6	**6**

2014

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Nr. Crt.	**Produs/serviciu/tehnologie**	**Date tehnice**	**Domeniu de utilizare**
1	Taiere cu laser in chipuri a unor fragmente de plachete de GAN/SI procesate.	Contract: 1854/21.10.2014, executant INFLPR, Beneficiar: Institutul National pentru Microtehnologie IMT Bucuresti. Valoare: 3500 lei	Optica, Nanofotonica
2	Metode de masurare in timp real al ariei efective si duratei	Contract 7/01.11.2013, executant INFLPR, Beneficiar: Ophir Optics SRL din Bucuresti	Servicii efectuate de Laboratorul ISOTEST pentru

	efective a spotului laser implementate in cadrul statiei automate de testare a componentelor optice in camp laser intens, Autori: Stratan A., Nemes G.,Zorila A., Dumitrache I., Rusen L.	(producatorul componentelor optice testate). aproximativ 7000 euro pe anul 2014.	companii producatoare de optica (Ophir Optics SRL, subsidiar Newport Corp. USA; Ophir Optronix Israel**)**
3	- Studiu tehnologic privind comportarea componenelor optice in camp laser intens conform standardului ISO privind masurarea PDCL prin testul S-on-1 (standard ISO 21254-2). Autori: Stratan A., Nemes G.,Zorila A., Dumitrache I., Rusen L.	Contract 7/01.11.2013, executant INFLPR, Beneficiar: Ophir Optics SRL din Bucuresti (producatorul componentelor optice testate). aproximativ 7000 euro pe anul 2014.	Servicii efectuate de Laboratorul ISOTEST pentru companii producatoare de optica (Ophir Optics SRL, subsidiar Newport Corp. USA; Ophir Optronix Israel**)**
4	Tehnologii debitare placi aluminiu cu fante de 160 μm	Contract 12/11.12.2013, Factura nr. 200001/09.01.2014, valoare 496 lei	Institutul National de Cercetare-Dezvoltare Aerospatiala (INCAS)
5	Tehnologii debitare placi aluminiu cu grosime de 0,8 mm	Contract 2/9.07.2014, Factura nr. 200157/14.07.2014, valoare 496 lei	Institutul National de Cercetare-Dezvoltare Aerospatiala (INCAS)
6	Studiu tehnologic privind obtinerea sticlelor fosfatice dopate prin topire in creuzete din alumina	Temperaturi de topire 1200 -1300^{0}C Temperaturi de recoacere 470-500^{0}C	Sticle optice pentru comutatoare opto-electronice
7	Studiu tehnologic privind obtinerea sticlelor boro-fosfatice dopate, prin topire in creuzete din alumina	Temperaturi de topire 1280 -1300^{0}C Temperaturi de recoacere 490-500^{0}C	Sticle optice pentru rotator Faraday
8	Studiu tehnologic privind obtinerea peliculelor boro-fosfatice dopate, prin metoda PLD	Grosime pelicula 0,5-1microni, Fluenta peste 2,5J/cm2, 12500-25000 pulsuri, Presiune 10-4mbar	Pelicule vitroase pentru rotator Faraday
9	Studiu tehnologic privind obtinerea peliculelor boro-fosfatice dopate cu Bi si Pb, prin metoda MS	Grosime pelicula 0,5-1 micron Putere activa 100 W Presiune 10-3 mbar Argon	Pelicule optice pentru rotator Faraday
10	Cresterea prin metoda Czochralski a doua cristale de tip $Ba_{1-x}Sr_xTiO_3$	Contract: 3/24.04.2014 Executant: INCDFLPR - Laboratorul ECS Beneficiar: Institutul National de Cercetare-Dezvoltare pentru Fizica Materialelor, Str. Atomistilor 105 bis, 077125 magurele, Ilfov Valoare: 9.000 lei / 2014	Feroelectricitate
11	Proiectare, executie, testare si reglare a unor componente necesare functionarii unui echipament laser (consultanta stiintifica si tehnica)	Contract: 9/14.11.2013 Executant: INCDFLPR - Laboratorul ECS Beneficiar: S.C. Cvintall Enterpises S.R.L., Str. Atomistilor 407, Bloc Turn IFA, cam. 511, Magurele, Ilfov Valoare: 4.000 lei / 2014	Medicina
12	Platforma educationala colaborativa	Permite dezvoltarea de proiecte educationala in format colaborativ (http://81.181.130.13/ibest/module/vremea/index.php) Peste 8500 de vizitatori	Educatie in domeniul stiintelor in invatamantul preuniversitar
13	Feasibility Study for the Use of the Romanian CETAL Infrastructure	Studiu privind aplicaţiile spaţiale ale infrastructurii CETAL	European Space Agency

Valorificarea în producţie a rezultatelor obţinute (2014):

Denumirea proiectului	**Tipul rezultatului**	**Utilizatori**	**Efecte socio-economice la utilizator**
Contract 2/9.07.2014 Institutul National de Cercetare-Dezvoltare Aerospatiala (INCAS)	Debitare placi aluminiu cu fante de 160 µm	Contract 2/9.07.2014, Factura nr. 200157/14.07.2014, valoare 496 lei	Dezvoltarea capabilitatii tehnologice in industria aerospatiala
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Elaborarea si aplicarea unei tehnologii de durificare superficiala in plasma a suprafetelor interioare la cilindrii lungi (l<2,3 m) de la masinile de injectie material plastic;	*SC ELUR SRL,* Braila Contract Factura 200005/29.01.2014, valoare 19218.03 lei	Cresterea duratei de viata a componenetelor destinate echipamentelor pt injectia de mase plastice
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Tehnologie gaurire laser pt. tabla ol inox	Executant INFLPR, Beneficiar: *Inst. Nat. de CD Turbomotoare COMOTI* Contract nr. 90/2014, Factura 200052/03.06.2014, valoare 25141.25 lei	Dezvoltarea capabilitatilor tehnologice in Industria Aerospatiala
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Tehnologie gaurire laser 3 D pt. placi TiAlV	Executant INFLPR, Beneficiar: *Inst. Nat. de CD Turbomotoare COMOTI* Contract nr. 105/2014, Factura 200150/23.07.2014, valoare 29800 lei	Dezvoltarea capabilitatilor tehnologice in Industria Aerospatiala
Cercetari avansate de fizica si tehnologia plasmelor privind: plasme fierbinti si fuziune nucleara, ingineria suprafetelor, nanometrologie si depoluarea mediului	Tehnologie debitare laser pt. elemente injectie mase plastice	Executant INFLPR, Beneficiar: *SC Videli*; Contract nr. 01/05.05.2014, Factura 200061/17.06.2014, valoare 17100 lei	Cresterea duratei de viata a componenetelor destinate echipamentelor pt injectia de mase plastice
Tematica 6	Producţia pentru experimentul CBM planificată în 2015	Consorţiul FAIR	O parte semnificativă a siste-mului de detecţie pentru experi-mentul CBM se va realiza la IFIN–HH.
Tematica 11	Studiu, aplicaţie software	Utilizare interna	Dezvoltarea in-house a unui produs software care sa permita modelarea zborului in formatie si determinarea unor orbite relativ stabile pentru nano sateliti

Participarea la colaborări internaţionale (2014):

Nr. crt.	Denumirea programului internaţional	Ţară şi/sau CE unităţi colaboratoare	Denumire proiect
1	SILMI-Super-intense laser-matter interactions	17 tari participante din Europa, Israel	Super-intense laser-matter interactions
2	COST MP1203	25 tari participante din Europa, Tunisia, SUA, Australia	Advanced X-ray spatial and temporal metrology
3	EUROfusion Consortium	CE	Participarea Romaniei la EUROfusion WPCD si cercetari complementare
4	Modulul III – Cooperari bilaterale Romania Italia	INFLPR – CNR – IENI Genova, Italy	Laser beam interaction with microdroplets having controlled content
5	COST MP1106	35 tari participante din Europa	Smart and green interfaces - from single bubbles and drops to industrial, environmental and biomedical applications
6	COST MP1205	35 tari participante din Europa	Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics
7	COST BM1003	35 tari participante din Europa	Microbial cell surface determinants of virulence as targets for new therapeutics in Cystic Fibrosis
8	FP7-REGPOT	Bulgaria, Romania, Germania, Suedia, Polonia, Italia	FP7-REGPOT-2012-2013-1 - 316309: INERA - Research and Innovation Capacity Strengthening of ISSP-BAS in Multifunctional Nanostructures; 2013 - 2018
9	COST	Belgia, Bulgaria, Cehia, Danemarca, Franta, Grecia, Ungaria, Israel, Italia, Polonia, Portugalia, Romania, Serbia, Spania, Elvetia, Marea Britanie si Croatia, Germania, Lituania si Irlanda	COST MP1208 "Developing the Physics and the Scientific Community for Inertial Fusion at the time of NIF ignition "
10	FP7-REGPOT	Bulgaria, Romania, Germania, Suedia, Polonia, Italia	FP7-REGPOT-2012-2013-1 - 316309: INERA - Research and Innovation Capacity Strengthening of ISSP-BAS in Multifunctional Nanostructures; 2013 - 2018
11	M-ERA.NET	Portugalia, Moldova	MAGPHOGLAS
12	Materiale perovskitice nanostructurate cu banda interzisa mica pentru aplicatii fotovoltaice si generare de hidrogen prin fotocataliza, 18 RO-CH	Elvetia	Materiale perovskitice nanostructurate cu banda interzisa mica pentru aplicatii fotovoltaice si generare de hidrogen prin fotocataliza, 18 RO-CH

13.	Capacitati, Modulul III - Cooperari bilaterale ”Brancusi”; Romania-Franta	INFLPR & Laboratoire de Chimie de la Matière Condensée de Paris - LCMCP de l’École Nationale Supérieure de Chimie de Paris (ENSCP) - Chimie ParisTech, France	Research and development of pure and Yb^{3+}- activated nonlinear optical borate type crystals for the realization of new compact and tunable high-power visible solid-state laser sources based on frequency conversion processes
14.	Capacitati, Modulul III - Cooperare bilaterala Romania - Republica Moldova	INFLPR & Institutul de Inginerie Electronica si Nanotehnologii “D. GHIŢU”, Str. Academiei, 3/3, MD-2028, Chisinau, Republica Moldova	Emitatoare si receptoare matriciale de radiatie THz pentru circuite integrate hibride
15.	LASERLAB3 (Contract no. 284464)	30 institutii in 16 tari in Europa http://www.laserlab-europe.net/	LASER LAB EUROPE - The Integrated Initiative of European Laser Research Infrastructures III WP32-INREX WP33-EUROLITE
16.	COST CM1006		European F-Element Network
17.	COST CM1104		Reducible oxide chemistry, structure and functions
18.	COST MP1204		COST - MP1204, ”TERA - MIR Radiation: Materials, Generation, Detection and Applications
19	IFA-CEA C4_01/2014	Romania-Franta	Caracterizarea si modelarea 3D de inalta acuratete a cablurilor supraconductoare prin micro-tomografie si imbunatatirea modelelor multifizice ale acestora
20	COST MP1001 6.12.2010-5.12.2014	35 ţari UE şi asociate	Ion Traps for Tomorrow's Applications (IOTA)
21	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Code developement for ITER disruption simulations
22	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPJET1 si cercetari complementare /WPJET1-RO
23	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPJET2 si cercetari complementare /WPJET2-RO
24	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPMAG si cercetari complementare /WPMAG-RO
25	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPJET4_GSU si cercetari complementare /WPJET4_GSU-RO
26	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPENR si cercetari complementare /WPENR-RO
27	CAPACITATI/ EURATOM FUZIUNE	27 tari UE / 29 laboratoare nationale	Participarea Romaniei la EUROfusion WPMST1 si cercetari complementare/ WPMST1-RO
28	IFA-CEA C4_07/2014	Romania-Franta	Cresterea duratei de viata a placilor din CFC,grafit si CuCrZr acoperite cu W pentru utilizarea de lunga duratala interfata cu plasma de fuziune pentru proiectul WEST / PFCCOAT
29	European Framework Programme (FP7)	Belgia, Polonia, Italia, Ungaria, Suedia, Austria, Finlanda, Germania	Solar system plasma turbulence: observations, intermittency and

			multifractals
30	Colaborarea FCAL	DESY(Germania), CERN, TAU (Israel) etc.	Colaborarea FCAL
31	Colaborarea CLIC	CERN, U. Oxford etc.	Colaborarea CLICdb
32	FAIR	10 ţări, v. site FAIR	CBM
33	FP7/Hadron Physics 3	17 ţări, v. site HP3	ADAMAS
34	H2020/Hadron Physics Horizon (propunere)	10 ţări	DIADEM

Carti, lucrari, manifestări ştiinţifice (2014):

Nr. crt.	Manifestări ştiinţifice	Număr de manifestări	Număr de comunicări
	a) congrese internaţionale:	**20**	**60**
	b) simpozioane:	**6**	**12**
	c) seminarii, conferinţe;	**60**	**160**
	d) workshop	**8**	**12**
	Carti	**In tara**	**In strainatate**
			14
	Lucrari	**In tara**	**In strainatate**
	228	**35**	**193**

Brevete rezultate din tematica de cercetare (2014):

Nr. crt.	Brevete înregistrate in tara (nr.)	Brevete acordate in tara (nr.)
	8	6
	Brevete înregistrate in strainatate (nr.)	**Brevete acordate in strainatate (nr.)**
	2	

2015

Rezultate concretizate în studii, proiecte prototipuri (produse), tehnologii, alte rezultate

Nr. Crt.	Produs/serviciu/tehnologie	Date tehnice	Domeniu de utilizare
1	Serviciu	Debitare 40 discuri cu diametrul de 100 +/-0,1 mm	Industria aeronautica
2	Tehnologie de laborator pentru generare de microjeturi, nanopicaturi si aerosoli continand medicamente prin interactia unui fascicul laser pulsat cu micropicaturi generate din solutii apoase de medicament	Lungimea de unda de iradiere / 532 nm; Domeniu de energii / 1 – 7 mJ; Densitati de putere / 3.5 - 13 GW/cm^2; Volumele picaturilor – tinta / 3.5 – 7 µl; Domeniul de concentratii ale solutiilor: 9 – 60 mg/ml.	Optofluidica, Biofizica, Stiintele vietii, Protectia Mediului
3	Tehnologii de laborator pentru determinarea dimensiunilor liniare si volumetrice ale microjeturilor, nanopicaturilor si aerosolilor generati prin interactia unui fascicul laser pulsat cu solutii apoase	(a) microjeturi; nanopicaturi / ordinul de marime al dimensiunilor ~10µm (volume ~ nL) / tehnica utilizata: analiza formei picaturii utilizand o camera ultra-rapida; (b) aerosoli / domeniul de valori ale dimensiunilor ~ 11 – 50nm (volume	Optofluidica, Biofizica, Stiintele vietii, Protectia Mediului

		~pl) / tehnica utilizata: analiza diferentiala a mobilitatii aerosolilor.	
4	Metode de masurare in timp real al ariei efective si duratei efective a spotului laser implementate in cadrul statiei automate de testare a componentelor optice in camp laser intens	- Opt. Eng. 53(12), doi:10.1117/1.OE.53.12.1225131 - Opt. Eng. 52(5), doi: 10.1117/1.OE.52.5.05420	Teste privind comportarea componentelor optice in camp laser intens conform Standardului ISO 21254-2
5	Contract 7/01.11.2013	Studiu tehnologic privind comportarea componenelor optice in camp laser intens conform standardului ISO privind masurarea PDCL prin testul S-on-1 (standard ISO 21254-2).	Ophir Optics SRL
6	Elaborarea si livrarea unei surse jet de plasma cu simetrie axiala	Alimentare RF, Putere 8-20 W, functionare la presune atmosferica, jet dec plasma rece Livrat la NCSR "Democritos", Aghia Paraskevi, Attiki, GREECE 15310 (Institute of Nanoscience and Nanotechnology) Total valoare: 10875 lei	Biologie, medicina, nanotehnologie, modificarea suprafetelor

Valorificarea în producţie a rezultatelor obţinute (2015):

Denumirea proiectului	**Tipul rezultatului**	**Utilizatori**	**Efecte socio-economice la utilizator**
Contract Prestari Servicii Nr. 2 din 29.07.2015	- Cresterea de cristale de tip $Ba_{1-x}Sr_xTiO_3$ - Prestator: Laboratorul de Electronica Cuantica a Solidului	Institutul National de Cercetare-Dezvoltare pentru Fizica Materialelor (INCDFM), Magurele, Romania	Realizarea unor faze de contract. Includerea cristalelor realizate la INFLPR in produse noi cu valoare adaugata sporita.
Contract nr. 8/14.12.2014; Factura nr. 200005/28.01.2015	Debitare discuri cu diametrul de 100 +/-0,1 mm	INCAS, Institutul National Cercetare-Dezvoltare Aerospatiale	Realizarea unor produse noi.
Total comenzi 2015 32724RON TVA inclus	Certificate ISO a comportarii componentelor optice / materialelor sub actiunea fasciculelor laser de mare puter.e	Ophir Optics SRL	Imbunatatirea acoperilor componentelor optice/obtinera de compoennte optice cu prag de distrugere imbunatatit.
Producerea si livrarea de nanoparticule de tungsten de dimensiuni nanometrice	Particule cu distributie de marime usta, in domeniul 80-150 nm, produse prin metodele plasmei	Livrat la Universitatea Aix-Marsilia, Franta Total valoare: 66375 lei:	elucidarea fenomenelor de retentie a tritiului
Contract: 1/10.03.2015, executant INFLPR,	Executare depunere straturi subtiri aderente pe materiale furnizate de beneficiar	Beneficiar Luxurymanagement24 – Germania, 1400 EUR	Dezvltarea de produse noi in domeniul fuziunii nucleare

Contract economic	Producerea de filme de beriliu pentru caracterizari de rezistenta mecanica	CEA Cadarache, ITER Total valoare: 60.000 euro	Dezvltarea de produse noi in domeniul fuziunii nucleare

Produs/serviciu/tehnologie	Date tehnice	Domeniu de utilizare
Module Software – tip model funcțional	Identifică şi urmăreşte în mod dinamic faţa umană; Identifică şi măsoară trăsăturilor faciale în punctele de interes; Determină valenţa emoţională (pozitiv/negativ/neutru) şi intensitatea emoţională.	Potenţial de utilizare în diverse aplicaţii integrate (în proiecte naționale /internaţionale) în domeniul contramăsurilor la afectaţii neuro-psihologice ale astronauţilor in cadrul zborului spaţial prelungit.
Nivelmetrie industriala prin atenuarea radiației cosmice secundare: demonstrator – CORANIV	Au fost efectuate teste in diferite conditii de geometrie a detectorului si cu diferite setari ale sistemului de coincidenta.	Nivelmetrie industriala
Simulari Monte Carlo cu GEANT4 ale prototipurilor de calorimetre forward de la sistemele de detectie pentru aceleratoarele liniare	Elaborarea de software pe baza codului de simulare Geant4 pentru studiul trecerii e^- prin senzori de GaAs si simulari ale prototipuiui de calorimetru BeamCal de la viitoare acceleratoare liniare	Institutul de Stiinte Spatiale

Participarea la colaborări internaţionale (2015):

Nr. crt.	Denumirea programului internaţional	Ţară si/sau CE unităti colaboratoare	Denumire proiect
1.	LASERLAB – EUROPE The integrated Initiative of European Laser Research Infrastructures	30 de institutii din 16 tari.	2012-2015: - Innovative radiation sources at the extremes (INREX); - European Research Objectives on Laser for Innovation, Technology and Energy (EURO-LITE)
2.	COST European Cooperation in Science and Technology	32 de tari	Materials, Physics and Nanosciences (MPNS) **Action MP1204**: Tera-MIR Radiation: Materials, Generation, Detection and Applications
3.	COST European Cooperation in Science and Technology	22 de tari	Chemistry and Molecular Sciences and Technologies (CMST); **Action CM1006:** European F-Element Network (EUFEN)
4.	COST European Cooperation in Science and Technology	23 de tari	Chemistry and Molecular Sciences and Technologies (CMST); **Action CM1104** Reducible oxide chemistry, structure and functions
5	Capacitati - Modulul III, Cooperare bilaterala Romania-Turcia 2013-2014	Turcia –Universitatea Hacettepe din Ankara, Polimer Chemistry Devision	Identification of optimum processing conditions for the preparations of Xanthan based super absorbent polymers by ionizing radiations
6	COST MP1203		Advanced X-ray spatial and temporal metrology”
7	FAIR_SPARC	Germania	Studiul interactiunilor atomice in campuri supercritice
8	Romania - JINR-Dubna 2015, Protocol Nr.4400-415/17; Investigation of	Rusia/JINR/FNLP	Investigation of the interaction, structure and phase transitions of the lipid and macromolecular complexes in presence of the polar aprotic

	Nanosystems and Novel Materials by Neutron Scattering Methods 04-4-1121-2015/2017		solvents and cations using Small Angle Scattering and Electron Microscopy techniques
9	COST MP 1205	43 institutii din 26 tari participante	Advances in Optofluidics
10	COST MP 1106	55 institutii din 32 tari participante	Smart and green interfaces
11	ANR	Franta	DYLIPSS
12	CAPACITATI, Modul III	Japonia	Advanced pulsed laser technologies for creation of functional materials
13	CAPACITATI, Modul III, Brancusi	Franta	Sinteza si functionalizarea laser de materiale nanostructurate pe baza de carbon
14	CAPACITATI, Modul III, Brancusi	Franta	Nanocompozite biomimetice obtinute prin biotehnologii laser avansate pentru vindecarea rapida si regenerarea tesuturilor osoase (CHITOBONE)
15	Programul de Cercetare Romania – Elvetia (RSRP)	Elvetia	Materiale perovskitice nanostructurate cu banda interzisa mica pentru aplicatii fotovoltaice si generare de hidrogen prin fotocataliza
16	PICS (Programmes Internationalles de Collaboration Scientifique)	Franta, Anglia, Romania	Mecanique statistique des cumulus : investigation fondamental du probleme de la prametrisation de la convection

Carti, lucrari, manifestări ştiinţifice(2015) :

Nr. crt.	Manifestări ştiinţifice	Număr de manifestări	Număr de comunicări
1	a) congrese internaţionale:	9	13
2	b) simpozioane:	10	19
3	c) seminarii, conferinţe;	150	320
4	d) workshop	10	20
	carti	In tara	In strainatate
			9
	Lucrari	**In tara**	**In strainatate**
	369	**82**	**287**

Brevete rezultate din tematica de cercetare:

Nr. crt.	Brevete depuse in tara	Aprobate in tara
1	22	5

In urma activitatilor derulate in perioada 2009-2015, au fost publicate 300 lucrari stiintifice publicate in reviste cu factor de impact ISI in tara si 1055 lucrari publicate in reviste cu factor de impact ISI in strainatate, lucrari stiintifice generate si ca urmare directa a finantarii primite prin programul NUCLEU, LAPLAS.

Articole publicate in perioada 2009 – 2015

Articole (numai cele publicate în reviste cu referenţi de specialitate)

2009

1.	Journal of Optoelectronics and Advanced Materials	Growth dynamics of pulsed-laser-deposited AlN thin films, 11 (10), 1479 - 1482, 2009
2.	Journal of Optoelectronics and Advanced Materials	Optical properties of pulsed-laser deposited ZnO thin films, 11 (4), 425 - 428, 2009
3.	Journal of Optoelectronics and Advanced Materials	Bioglass –polymer thin coatings obtained by MAPLE for a new generation of implants, 11(9), 1170 – 1174 (2009)
4.	Journal of Optoelectronics and Advanced Materials	The deep level influence on the admittance of AlN/Si structures with pulsed laser deposited AlN films, 11(9), 1292 – 1295 (2009)
5.	Journal of Optoelectronics and Advanced Materials	T. Bazaru, V. I. Vlad, A. Petris, P. S. Gheorghe, Study of the third-order nonlinear optical properties of nano-crystalline porous silicon using a simplified Bruggeman formalism, 11 (6), 820-825, 2009;
6.	Journalof Laser Micro Nanoengineering,	Femtosecond Laser Induced Periodic Surface Structures on ZnO Thin Films, Zamfirescu M, Ulmeanu M, Jipa F, et al., Volume: 4, Issue: 1, Pages: 7-10, Published: 2009
7.	Romanian Reports in Physics, Vol. 62, No. 1, 2009	Chemical activation of the high voltage pulsed, cold atmospheric plasma jets, N. Georgescu, C. P. Lungu, Andreea Lupu
8.	Rom. J. Phys. 54,919(2009).	A. Lupei, A. Achim, V. Lupei, C. Gheorghe, L. Gheorghe, S. Hau, "RE^{3+} doped $SrWO_4$ as laser and nonlinear active crystals"
9.	Rom. J. of Phys. (acceptata spre publicare)	O. Toma, S. Georgescu, "850 nm emission in Er:YLiF4 upconversion lasers
10.	Romanian Journal of Physics. (trimisa spre publicare)	T.Dascalu, N. Pavel, Progress in Passive Q-switched Lasers
11.	Optoelectr.Adv.Mat,-Rapid Communication	A.Surmeian, A.Groza, C.Diplasu, C.M.Teodorescu, P.Chapon, M.Ganciu "Photonic molecular effects associated to the sputtering process in a Glow Discharge Optical Emission Spectrometer" Optelectron.Adv.Mat-Rapid Communication, 1, 3 (2009
12.	JOAM	Electron Beam Diagnosis on DIADYN Using a Plasma Source" Dorina Toader, Silvia Marghitu, Gabriela Craciun, Elena Manaila, Constantin Oproiu (in curs de aparitie)
13.	Romanian Astronomical Journal,	C. CUCU-DUMITRESCU, M. DATCU, F. SERBAN, M. BUICAN "Data Mining in Satellite Images using the PRDC Technique" vol. 19, 1 (2009), 63
14.	Advancements of Medical Bioengineering and Informatics, Special Issue 2009	Valeanu V, de Hillerinn P.J., Hasegan D, Marin M., Vasiliu V., Costache C, Vizitiu A., " Using Virtual Milieu Modeling for Astronauts Training"
15.	Ingimed x 2009	Mihaela marin1), Andreea Vizitiu2), Cristina Ciurea3), Cristina Botezatu3) "Factori de influenţă în măsurători cu platforma de echilibru în domeniul performanţei umane"
	Strainatate	
16.	Sensor Letters, 2009	Laser-Induced Forward Transfer: An Approach to Single-Step Polymer Microsensor Microfabrication, V. Dinca, R. Fardel, F. Di Pietrantonio, D. Cannatà, E. Verona, A. Palla-Papavlu, A. Matei, M. Dinescu, T.Lippert – in curs de publicare
17.	Applied Physics A, 2009	Polymer pixel enhancement by laser induced forward transfer for sensor application", V. Dinca, A. Palla-Papavlu, A. Matei, M. Dinescu, J. Shaw-Stewart, R. Fardel, T. Tippert, F. Di Pietrantonio, D. Cannatà, M. Benetti, E. Verona – submis spre publicare
18.	Applied Physics A, 2009	A comparative study of DRL-LIFT and LIFT on integrated polyisobutilene polymer matrices, V. Dinca, A. Palla-Papavlu, A. Matei, M. Dinescu, J. Shaw-Stewart, T. Tippert, F. Di Pietrantonio, D. Cannatà, M. Benetti, E. Verona – submis spre publicare
19.	APPLIED SURFACE SCIENCE Vol.: 255(10), 5491-5495, 2009	Multifunctional thin films of lactoferrin for biochemical use deposited by MAPLE technique, Constantinescu, C; Palla-Papavlu, A; Rotaru, A, et al.
20.	Journal of Optolelectronics and Advanced Materials	ZnO Nanowire Morphology Control in Pulsed Laser Deposition, A.Marcu, M.Goyat, T.Yanagida and T.Kawai, pp. 421-426 (2009)
21.	Solid State Science(2009)	Nanochannels Fabrication using Kikendal Effect, A.Marcu, T.Yanagida and T.Kawai, online
22.	Applied Surface Science	Laser Processing of Polyethylene Glycol Derivative and Block Copolymer Thin Films,255 (2009), 5605–5610

23.	Journal of Optoelectronics and Advanced Materials	Growth dynamics of pulsed-laser-deposited AlN thin films, 11 (10), 1479 - 1482, 2009
24.	Journal of Optoelectronics and Advanced Materials	Optical properties of pulsed-laser deposited ZnO thin films, 11 (4), 425 - 428, 2009
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26.	Journal of Optoelectronics and Advanced Materials	The deep level influence on the admittance of AlN/Si structures with pulsed laser deposited AlN films, 11(9), 1292 – 1295 (2009)
27.	Journal of Optoelectronics and Advanced Materials	T. Bazaru, V. I. Vlad, A. Petris, P. S. Gheorghe, Study of the third-order nonlinear optical properties of nano-crystalline porous silicon using a simplified Bruggeman formalism, 11 (6), 820-825, 2009;
28.	Journalof Laser Micro Nanoengineering,	Femtosecond Laser Induced Periodic Surface Structures on ZnO Thin Films, Zamfirescu M, Ulmeanu M, Jipa F, et al., Volume: 4, Issue: 1, Pages: 7-10, Published: 2009
29.	Romanian Reports in Physics, Vol. 62, No. 1, 2009	Chemical activation of the high voltage pulsed, cold atmospheric plasma jets, N. Georgescu, C. P. Lungu, Andreea Lupu
30.	Rom. J. Phys. 54,919(2009).	A. Lupei, A. Achim, V. Lupei, C. Gheorghe, L. Gheorghe, S. Hau, "RE^{3+} doped $SrWO_4$ as laser and nonlinear active crystals"
31.	Rom. J. of Phys. (acceptata spre publicare)	O. Toma, S. Georgescu, "850 nm emission in Er:YLiF4 upconversion lasers
32.	Romanian Journal of Physics. (trimisa spre publicare)	T.Dascalu, N. Pavel, Progress in Passive Q-switched Lasers

33.	Applied Surface Science	Functionalized Polyvinyl Alcohol Derivatives Thin Films for Controlled Drug Release and Targeting Systems: MAPLE Deposition and Morphological, Chemical and In Vitro Characterization,255 (2009), 5600–5604
34.	Applied Surface Science	Functional polyethylene glycol derivatives nanostructured thin films synthesized by matrix-assisted pulsed laser evaporation,255 (2009), 9873–9876
35.	Applied Surface Science	Thin Films of Polymer Mimics of Cross-Linking Mussel Adhesive Proteins Deposited by Matrix Assisted Pulsed Laser Evaporation, 255 (2009) 5496–5498
36.	Applied Surface Science	Bioglass thin films for biomimetic implants, 255 (10), 5476 - 5479
37.	Applied Surface Science	Biocompatible and bioactive nanostructured glass coatings synthesized by pulsed laser deposition: In vitro biological tests, 255 (2009) 5486–5490
38.	Applied Surface Science	Characterization of pulsed laser deposited chalcogenide thin layers, 255 (10), 5318 - 5321, 2009
39.	Applied Surface Science	Spectroscopic studies of (AsSe)100–xAgx thin films, 255 (2009) 9691–9694

40.	Applied Surface Science	Structural investigations of ITO-ZnO films grown by the combinatorial pulsed laser deposition technique, 255 (10), 5288 - 5291, 2009
41.	Applied Surface Science	Chemical composition of ZrC thin films grown by pulsed laser deposition, 255 (10), 5260 - 5263, 2009
42.	Applied Surface Science	MAPLE prepared polymeric thin films for non-linear optic applications, 255 (10), 5611-5614, 2009
43.	Applied Surface Science	Shallow Hydroxyapatite coatings pulsed laser deposited on Al2O3 substrates with controlled porosity: correlation of morphological characteristics with in vitro testing results, 255 (2009) 5312–5317
44.	Applied Surface Science	AlN:Cr thin films synthesized by pulsed laser deposition: studies by X-ray diffraction and spectroscopic ellipsometry, 255 (2009) 5271–5274
45.	Applied Surface Science	Subpicosecond Laser Ablation of Copper and Fused Silica: Initiation Threshold and Plasma Expansion, 255 (2009) 9734–9737
46.	Thin Solid Films	Biofunctional alendronate–Hydroxyapatite thin films deposited by Matrix Assisted Pulsed Laser Evaporation Biomaterials, Volume 30, Issue 31, October 2009, Pages 6168-6177
47.	Ceramics International	Processing of dense nanostructured HAP ceramics by sintering and hot pressing, 35 (2009) 1407–1413
48.	Journal of Biomedical Materials Research	Immobilization of urease by laser techniques: synthesis and application to urea biosensors,89A: 186–191, 2009
49.	Journal of Materials Science: Materials in Medicine	Specific biofunctional performances of the hydroxyapatite-sodium maleate copolymer hybrid coating nanostructures evaluated by in vitro studies, 20, 2305-2316, 2009
50.	Surface and Coatings Technology	High-Repetition Rate Pulsed Laser Deposition of ZrC thin films, 203 (8), 1055-1058, 2009
51.	Thin Solid Films	Comparative study on Pulsed Laser Deposition and Matrix Assisted Pulsed Laser Evaporation of urease thin films, 517 (15), 4299-4302 , 2009
52.	Lasers in Engineering	The general model of the thermal field distributions in solids under multiple laser irradiation, Mihai Oane, Ion N. Mihailescu, Rares V. Medianu, Constantin Oproiu, Andrei Popescu, Geo Georgescu, Germany 2009 / in press
53.	Lasers in Engineering	„The Fourier equation applied to beam-water phantom interaction", Mihai Oane, Constantin Oproiu, Rares V. Medianu, Aaron Peled, Ion N. Mihailescu, Andrei Popescu, Geo Georgescu, Germany 2009 / in press
54.	Applied Surface Science	Controlled manufacturing of nanoparticles by the laser pyrolysis: Application to cementite iron carbide, I. Morjan, R. Alexandrescu, M. Scarisoreanu, C. Fleaca, F. Dumitrache, I. Soare, E. Popovici, L. Gavrila, E. Vasile, V.Ciupina and N.C. Popa, 255 (2009) 9638–9642
55.	Applied Surface Science	Magnetic properties of core-shell catalyst nanoparticles for carbon nanotube growth , C.T. Fleaca, I. Morjan, R. Alexandrescu, F. Dumitrache, I. Soare, L. Gavrila-Florescu, F. Le Normand and A. Derory, Volume 255 (2009) 5386-5390
56.	Journal of Nanoscience and Nanotechnology	Iron Oxide - Based Nanoparticles with Different Mean Sizes Obtained by the Laser Pyrolysis: Structural and Magnetic Properties, I. Morjan, R. Alexandrescu, F. Dumitrache, R. Birjega, C. Fleaca, I. Soare, C. R.Luculescu, G. Filoti, V. Kuncer, L. Vekas, N. C. Popa, G. Prodan, 2010, vol.10, doi:10.1166/jnn.2010.1863 (in press)
57.	Applied Surface Science	Heterogeneous atoms in laser-induced synthesis of carbon black, E. Popovici, L. Gavrila Florescu, I. Soare, M. Scarisoreanu, I. Sandu, G. Prodan, C.T. Fleaca, I. Morjan, I. Voicu, 255 (2009) 5511-5514
58.	Journal for Optoelectronics and Advanced Materials	Laser-synthesized carbon black for polymer-based composites reinforced by carbon fibers,L. Gavrila Florescu, I. Dinca, E. Popovici, L. Dumitrache, R. Ianchis, A. Stan, I. Sandu, A. Stefan, Z. Vuluga, D. Donescu, I. Voicu , in press, 2010
59.	Lasers in Engineering2009	Mihai Oane, Rares V. Medianu, Ion N. Mihailescu, Constantin Oproiu, Geo Georgescu, Florea Scarlat, Monica Nemtanu, Mirela Brasoveanu „Lasers calorimetry in action: classical physics versus quantum phyiscs",
60.	Lasers in Engineering, 2009	Mihai Oane, Mirela Pacala[1], Rares V. Medianu, Ovidiu Pacala, Ion N. Mihailescu, Florea Scarlat, Geo Georgescu, Monica Nemtanu, Mirela Brasoveanu, Constantin Oproiu, „The thermal effects in laser in motion-solid interraction"
61.	Journal of Macromolecular Science Part B-Physics	G. I. Rusu, A. Airinei, V. Hamciuc, G. G. Rusu, P. Rambu, M. Diciu, P. Garoi, M. Rusu, „Electronic and Optical Properties of Some Polysulfone-Polydimethylsiloxane Copolymers in Thin Films", v.48 nr. 2 p.238-253, 2009

62.	Optical Materials 31 (2009) 701–706	V. Lupei Ceramic laser materials and the prospect for high power lasers
63.	Opt. Mat. 31 (5), 744-749 (2009).	A.Lupei, V. Lupei, C. Gheorghe, A. Ikesue, E. Osiac, "Upconversion emission of RE^{3+} in Sc_2O_3 ceramic under 800 nm pumping,"
64.	J. Lumin. 129 (2009) 1862–1865	V. Lupei, A.Lupei, C.Gheorghe, A.Ikesue, E.Osiac, "Energy transfer-driven infrared emission processes in rare earth-doped Sc2O3 ceramics"
65.	EUROPEAN PHYSICAL JOURNAL D 54 (2009) 575-583	Popa A Geometrical symmetry of atoms with applications to semiclassical calculation of energetic values
66.	JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS42,(2009) 025601	Popa A Modelling properties of hard x-rays generated by the interaction between relativistic electrons and very intense laser beams
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81.	Laser synthesized nanopowders for polymer-based composites	Applied Surface Science, 258, 9260-9262, 2012	Lavinia Gavrila-Florescu, Ion Sandu, Ana Stan, Elena Dutu, Ion Voicu	2.103
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91.	Spectroscopic ellipsometry investigations of Eu-doped oxy-fluoride glass and glass-ceramics	Optical Materials, Volume 34, Issue 8, June 2012, Pages 1493-1496, ISSN 0925-3467, 10.1016/j.optmat.2012.03.015. (http://www.sciencedirect.com/science/article/pii/S0925346712001498)	A.C. Galca, N. Preda, C.E. Secu, C.R. Luculescu, M. Secu,	2,023
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111.	Infra-excited bright green and red luminescence in $La_3Ga_{5.5}Ta_{0.5}O_{14}$ doped with erbium and ytterbium	Physica B: Condensed Matter 407,(2012), 1124-1127 doi:10.1016/j.physb.2012.01.091	S.Georgescu, O.Toma. A.M.Voiculescu, C. Matei, R. Birjega, L.Petrescu,	1,063
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132.	Spectroscopic features and laser performance at 1.06 μm of Nd^{3+} doped $Gd_{1-x}Lu_xCa_4O(BO_3)_3$ single crystal	Journal of Applied Physics, **111** (1), 013102 (2012)	C. Gheorghe, L. Gheorghe, P. Loiseau, and G. Aka	2.168
133.	A comparative study of Nd^{3+} and Sm^{3+} ions doped into oxide host materials; correlation between structure	Optoelectronics and Advanced Materials - Rapid Communications,**6** (1-2), 44-48 (2012)	C. Gheorghe, A. Lupei, V. Lupei, and L. Gheorghe	0.304

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135.	Energy level scheme of Eu^{3+}:$La_3Ga_5SiO_{14}$ (langasite)	Optoelectronics and Advanced Materials - Rapid Communication, **6** (2), 22-24 (2012)	S. Georgescu, O. Toma, A. M. Voiculescu, L. Gheorghe, and A. Achim	0.304
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137.	Infrared-excited bright green and red luminescence in $La_3Ga_{5.5}Ta_{0.5}O_{14}$ doped with erbium and ytterbium	Physica B - Condensed Matter, **407** (7), 1124-1127 (2012)	S. Georgescu, O. Toma, A. M. Voiculescu, C. Matei, and R. Birjega	1.063
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141.	Effect of aluminum substitution on the phase stability and luminescence properties of Eu-doped langanite nano-powders synthesized by a citrate sol-gel method	Rom. Rep. Phys. **64** (3), 737-742 (2012)	S. Georgescu, A. M. Voiculescu, O. Toma, S. Nastase O. Toma, C. Matei, and R. Birjega	0.5
142.	Judd-Ofelt analysis and laser investigations of Nd^{3+}-doped $Gd_{1-x}Sc_xCa_4O(BO_3)_3$ single crystal	Optoelectronics and Advanced Materials - Rapid Communications **6** (3-4), 374-382 (2012)	L. Gheorghe and C. Gheorghe	0.304
143.	Order and disorder effects in nano-ZrO_2 investigated by micro-Raman and spectrally and temporarily resolved photoluminescence	Phys. Chem. Chem. Phys. **14** (37), 12970-12981 (2012).	C. Tiseanu, B. Cojocaru, V. Parvulescu, M. Sanchez Dominguez, P. A. Primus and M. Boutonnet	3.573
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150.	Interaction of $NaYF_4$:Er:Yb Nanoparticles with Phospholipid Monolayers as Models of Biological Membranes	Revista de Chimie **63** (9), 956-961 (2012)	L. Petrescu, O. Cinteza, A.M. Voiculescu, T. Rosu, I. Enculescu, E. Matei, S. Georgescu, R. Birjega, S. Avram, and D. Mihailescu	0.599
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156.	From ZnF_2 to ZnO thin films using pulsed laser deposition. Optical and electrical properties	Solar Energy Materials & SolarCells **107** 136–141 (2012)	Y. Thimont, J.Clatot, **M.Nistor**, C.Labrugere, A.Rougier,	4.542
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158.	Dielectric properties of Ba(Zn1/3Ta2/3)O3 thin films on Pt-coated Si substrates	Thin Solid Films 522 112–116 (2012)	L. Nedelcu, **N.B. Mandache**, M.I. Toacsan, A.M. Vlaicu, M.G. Banciu, A. Ioachim**, F. Gherendi**, C.R. Luculescu, **M. Nistor**	1.89
159.	On the physical interpretation of the electromagnetic coupling constant α	Rom.Rep.Phys., 64, supplement, 1307-1312 (2012)	**N. B. Mandache**	0.5
160.	Doped zinc oxide thin films as transparent conductive electrodes	Rom.Rep.Phys., 64, supplement, 1313-1322 (2012)	**M. Nistor**	0.5
161.	Neutron field parameter measurements on the JET tokamak by means of super-heated fluid detectors	Review of Scientific Instruments, **83,** 10E124, 2012	**M. Gherendi,V. L. Zoita, T.Craciunescu,** M. Gatu Johnson, A. Pantea, I. Baltog, T. Edlington, C.Hellesen, V. Kiptily, S. Conroy, A. Murari, S. Popovichev	1.367
162.	Structural characterization and electrochemical behavior of titanium carbon thin films	Surface & Coatings Technology 211, 192–195, (2012)	**E. Grigore,** C. Delacote, A.A. El Mel, M. Boujtita, A. Granier, P.Y. Tessier	1.867
163.	The influence of Ni content on the characteristics of C–Ni thin films	Surface & Coatings Technology 211, 188–191, (2012)	**E. Grigore**, A.A. El Mel, A. Granier, P.Y. Tessier	1.867
164.	Shape control of nickel nanostructures incorporated in amorphous carbon films: From globular nanoparticles toward aligned nanowires	Journal of Applied Physics 111, 114309, (2012)	A. A. El Mel, N. Bouts, **E. Grigore,** E. Gautron, A. Granier, B. Angleraud, P. Y. Tessier	2.168
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183.	Sequential PECVD/PVD technique used for the synthesis of copper-polypyrrole nanocomposites with surface plasmon resonance effect	Romanian Reports in Physics, Vol. 64, Supplement, pp 1345–1353, 2012	V. Satulu, C. Stancu, V. Ion, M. Filipescu, B. Mitu, G. Dinescu	0.500
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1	Exposure of Chlorpromazine to 266 nm Laser Beam Generates New Species with Antibacterial Properties: Contributions to Development of a New Process for Drug Discovery	PLoS ONE, 8, e55767 (2013) doi: 10.1371/annotation/1ba396af-ad78-4740-b9f8-93cf03661b35	M.L. Pascu, B. Danko, A. Martins, N. Jedlinszki, T. Alexandru, V. Nastasa, M. Boni, A. Militaru, I. R. Andrei, A. Staicu, A. Hunyadi, S. Fanning, L. Amaral	3.73
2	The In Vitro Activityof Products Formed from Exposure of Chlorpromazine to a 266nm LASER Beam Against Species of Mycobacteria of Human Interest	In Vivo; 27(5):605-10. (2013)	Armada AM, Alexandru T, Machado D, Danko B, Hunyadi A, Dinache A, Nastasa V, Boni M, Ramos J, Viveiros M, Molnar J, Pascu ML, Amaral L	1.264
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4	Optimal and safe treatment of spider leg veins measuring less than 1.5 mm on skin type IV patients, using repeated low-fluence Nd:YAG laser pulses after polidocanol injection	LASERS IN MEDICAL SCIENCE Volume: 28 Issue: 3 Pages: 925-933 DOI: 10.1007/s10103-012-1180-6 Published: MAY 2013	Moreno-Moraga, J ; Hernandez, E; Royo, J ; Alcolea, J ; Isarria, MJ] ; Pascu, ML ; Smarandache, A ; Trelles, M	2.402
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9	Electron collisions with Fe-peak element Co IV: A computational grand challenge	Romanian Reports in Physics, Vol. 65 (2013) 745-756	Stancalie V	1.123
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15	*SAW Sensor Based on Highly Sensitive Nanoporous Palladium Thin Film for Hydrogen Detection*	Microelectronic Engineering, vol. 108, 218-221, DOI: 10.1016/j.mee.2012.12.001 (2013)	Cristian Viespe, Constantin Grigoriu,	1.224
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23	Experimental investigation of the output mode profile of soliton waveguides recorded at 405 nm wavelength in lithium niobate	Rom. Rep. Phys. **65** (3), 915-924 (2013)	S.T. Popescu, A. Petris, V.I. Vlad	1.123
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38	Silicon bump arrays by near-field enhanced femtosecond laser irradiation in fluorine liquid precursors	APPLIED SURFACE SCIENCE 278, 301-304 (2013)	M. Ulmeanu; I. Anghel, F. Jipa; M. Filipescu; C. Luculescu; M. Enculescu; M. Zamfirescu	2.112
39	Periodical structures induced by femtosecond laser on metals in air and liquid environments	APPLIED SURFACE SCIENCE 278, 347-351 (2013)	Catalina Albu; Adrian Dinescu; Mihaela Filipescu; Magdalena Ulmeanu; Marian Zamfirescu	2.112
40	Periodic arrays of nanostructures in silicon and gallium arsenide by near-field enhanced laser irradiation in liquid precursors	COLLOIDS AND SURFACES A 418, 47-51 (2013)	M. Ulmeanu; I. Anghel, M. Filipescu; C. Luculescu; M. Enculescu; M. Zamfirescu	2.108
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48	Dependence of Harmonic Spectrum Shape on Laser Beam Intensity in Interaction With Atoms	IEEE JOURNAL OF QUANTUM ELECTRONICS 49, 522-527	Alexandru Popa	1.83
49	Electro-optic and dielectric properties of epitaxial Ph1-3X/2LaxZr0.2Ti0.8O3 thin films obtained by pulsed laser deposition	THIN SOLID FILMS Volume: 541 Pages: 127-130 (2013).	Scarisoreanu, ND; Craciun, F ; Andrei, A ; Ion, V ; Birjega, R ; Moldovan, A ; Dinescu, M ; Galassi, C	1.604
50	E-MRS Symposium V: "Laser materials processing for micro and nano applications" 14-18 May 2012, Strasbourg (France) Preface	APPLIED SURFACE SCIENCE Volume: 278 Pages: 1-1 (2013)	Dinescu, M ; Champeaux, C ; Ossi, PM ; Zimmer, K	2.112
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54	Structural and dielectric properties of Ba(X1/3Ta2/3)O-3 thin films grown by RF-PLD	APPLIED SURFACE SCIENCE Volume: 278 Pages: 158-161 (2013)	Nedelcu, L ; Scarisoreanu, ND ; Chirila, C ; Busuioc, C ; Banciu, MG ; Jinga, SI ; Dinescu, M	2.112
55	Pulsed laser deposition of lead-free (Na0.5Bi0.5)(1-x)BaxTiO3 ferroelectric thin films	APPLIED SURFACE SCIENCE Volume: 278 Pages: 162-165 (2013)	Andrei, A ; Scarisoreanu, ND ; Birjega, R ; Dinescu, M ; Stanciu, G ;	2.112

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59	Protein-resistant polymer coatings obtained by matrix assisted pulsed laser evaporation	APPLIED SURFACE SCIENCE **Volume:** 278 **Pages:** 198 -202 (2013)	Rusen, L ; Mustaciosu, C ; Mitu, B; Filipescu, M ; Dinescu, M ; Dinca, V	2.112
60	Functionalized ormosil scaffolds processed by direct laser polymerization for application in tissue engineering	APPLIED SURFACE SCIENCE **Volume:** 278 **Pages:** 357 -361 (2013)	Matei, A ; Schou, J ; Canulescu, S ; Zamfirescu, M; Albu, C ; Mitu, B ; Buruiana, EC ; Buruiana, T ; Mustaciosu, C ; Petcu, I ;Dinescu, M	2.112
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62	LACTOFERRIN-CISPLATIN-EMBEDDED BIODEGRADABLE POLYMERIC THIN FILMS WITH ANTITUMORAL ACTIVITY IN VITRO	AMERICAN JOURNAL OF HEMATOLOGY **Volume:** 88 **Pages:** E 74-E74 (2013)	Florian, P ; Dinca, V ; Sima, L ; Rusen, L ; Dinescu, M ; Evans, R ; Roseanu, A	4.003
63	Synthesis and Photostructuring of Hybrid Photopolymers with Cinnamate and Anil Moieties by using UV Light and Femtosecond Laser Pulses	SOFT MATERIALS **Volume:** 11 **Pages:** 16 5-172 (2013)	Buruiana, EC ; Jitaru, F ; Matei, A ; Dinescu, M ;Buruiana, T	1.429
64	2 nm Quantum Optical Lithography	OPTICS COMMUNICATIONS **Volume:** 291 **P ages:** 259-263 (2013)	Pavel, E ; Jinga, S ; Andronescu, E ; Vasile, BS ; Kada, G ;Sasahara, A ; Tosa, N ; Matei, A ; Dinescu, M ; Dinescu, A ; Vasile, OR	1.438
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66	Antibacterial polymeric coatings grown by matrix assisted pulsed laser evaporation	APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING **Volume:** 110 **Pages:** 895-902 (2013)	Paun, IA ; Moldovan, A ; Luculescu, CR; Dinescu, M	1.545
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68	Microstructure-related magnetic properties in Co-implanted ZnO thin films	JOURNAL OF PHYSICS D-APPLIED PHYSICS **Volume:** 46 **Article Number:** 065003 (2013)	Nistor, LC ; Ghica, C ; Kuncser, V ; Pantelica, D ; Grob, JJ ;Epurescu, G ; Dinescu, M	2.528
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70	STRUCTURE AND MORPHOLOGY OF INDIUM NITRIDE THIN FILMS GROWN BY PLASMA ASSISTED PLD: THE IMPACT OF NITROGEN FLOW AND SUBSTRATE TEMPERATURE	ROMANIAN REPORTS IN PHYSICS **Volume:** 65 **Pages:** 213-218 (2013)	Stokker-Cheregi, F ; Nedelcea, A ; Voicu, FM ; Marin, DM; Birjega, R ; Dinescu, M	1.123
71	Carbonaceous spheres-an unusual template for solid metal oxide mesoscale spheres: Application to ZnO spheres	JOURNAL OF SOLID STATE CHEMISTRY **Volume:** 202 **Pages:** 291-299 (2013)	Patrinoiu, G ; Calderon-Moreno, JM ; Culita, DC ; Birjega, R ; Ene, R ; Carp, O	2.040
72	Hierarchical nanostructures of ZnO obtained in the presence of water soluble polymers	POWDER TECHNOLOGY **Volume:** 239 **Pages:** 56-58 (2013)	Miculescu, F ; Rusen, E ; Mocanu, A ; Diacon, A ;Birjega, R	2.024
73	Alumina versus Zirconia Comparative Survey of Thermic Influence During Dental Ceramic Core Manufacturing Process	PARTICULATE SCIENCE AND TECHNOLOGY **Volume:** 31 **Pages:** 156-161 (2013)	Gatin, E.; Luculescu, CR ; Birjega, R ; Ciobanu, L ; Patrascu, I	0.435
74	On the properties of aluminium doped zinc oxide thin films deposited on plastic substrates from ceramic targets	APPLIED SURFACE SCIENCE **Volume:** 274 **Pages:** 306-313 (2013)	M. Girtana, A. Vlad, R. Mallet, M.A. Bodea, J.D. Pedarnig, A. Stanculescu, D. Mardare, L. Leontie, S. Antohe	2.112
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78	MAPLE deposition of PLGA micro-and nanoparticles embedded into polymeric coatings	Digest Journal of Nanomaterials and Biostructures, 8 (2), pp. 621-630 (2013)	Socol, G., Preda, N., Socol, M., Sima, L., Luculescu, C.R., Sima, F., Miroiu, M., Axente, E., Visan, A., Stefan, N., Cristescu, R., Dorcioman, G., Stanculescu, A., Radulescu, L., Mihailescu, I.N.	1.092
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80	Functionalized magnetite silica thin films fabricated by MAPLE with antibiofilm properties	Biofabrication, 5 (1), art. no. 015007 (2013)	Mihaiescu, D.E., Cristescu, R., Dorcioman, G., Popescu, C.E., Nita, C., Socol, G., Mihailescu, I.N., Grumezescu, A.M., Tamas, D., Enculescu, M., Negrea, R.F., Ghica, C., Chifiriuc, C., Bleotu, C., Chrisey, D.B.	3.705
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83	Functionalized porphyrin conjugate thin films deposited by matrix assisted	Applied Surface Science, 278, pp. 207-210 (2013)	Iordache, S., Cristescu, R., Popescu, A.C., Popescu, C.E., Dorcioman, G.,	2.112

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84	Nanoprofiles evaluation of ZnO thin films by an evanescent light method	Microscopy Research and Technique, DOI: 10.1002/jemt.22259 (2013)	Mirchin, N., Peled, A., Duta, L., Popescu, A.C., Dorcioman, G., Mihailescu, I.N.	1.593
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87	Novel doped hydroxyapatite thin films obtained by pulsed laser deposition	Applied Surface Science, 265, pp. 41-49 (2013)	Duta, L., Oktar, F.N., Stan, G.E., Popescu-Pelin, G., Serban, N., Luculescu, C., Mihailescu, I.N.	2.112
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89	A simple continuous-wave diffuse optical tomography system for parametric investigation of different tissue phantoms	Journal of Optoelectronics and Advanced Materials Vol.15, Issue: 3-4, PP: 155-163 (2013)	M. Patachia	0.516
90	Carbon dioxide and water vapors detection from surgical smoke by laser photoacoustic spectroscopy	U.P.B. Sci. Bull., Series A, Vol. 75, Iss. 2, p. 139, 2013	A.M. Bratu, M. Petrus, M. Patachia, D.C. Dumitras	0.3
91	Calibration and artefact minimization in a two wavelength CW diffuse optical tomography system	U.P.B. Sci. Bull., Series A, Vol. 75, Iss. 2, p. 161, 2013	M. Patachia	0.3
92	Ethylene concentration at fruits under aerobic vs. Anaerobic conditions	U.P.B. Sci. Bull., Series A, Vol. 75, Iss. 3, p. 217, 2013	S. Banita , C. Popa, M. Patachia, D.C. Dumitras	0.3
93	Exertion in Kangoo Jumps Aerobic: Evaluation and Interpretation Using Spectroscopic Technique Determinations	Journal of Spectroscopy, Vol. 2013, Article ID 602434, http://dx.doi.org/10.1155/2013/602434	C. Popa, M. Patachia, Stefan Banita, D.C. Dumitras	0.53
94	High Vortex Depinning Temperatures in YBCO Films with BZO Nanorods	JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM Volume: 26 Issue: 4 Special Issue: SI Pages: 1167-1173 DOI: 10.1007/s10948-012-2019-x Published: APR 2013	Miu, L ; Ivan, I ; Miu, D ; Mele, P ; Matsumoto, K ; Mikheenko, P; Dang, VS ; Crisan, A	0.702

95	Inhibition of the detrimental double vortex-kink formation in thick YBa2Cu3O7 films with BaZrO3 nanorods	SUPERCONDUCTOR SCIENCE & TECHNOLOGY Volume: 26 Issue: 4 Article Number: 045008 DOI: 10.1088/0953-2048/26/4/045008 Published: APR 2013	Miu, D; Ivan, I. ; Crisan, A. ;Mele, P. ; Jakob, G. ;Miu, L.	2.758
96	Single shot interferometric method for measuring the nonlinear refractive index	Opt. Express 21 (25), 31303-31308 (2013)	I. Dancus, S.T. Popescu, A. Petris	3.546
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98	Influence of a hydrophobin underlayer on the structuring and antimicrobial properties of ZnO films	Journal of Materials Science 48 (23) , pp. 8329-8336 (2013)	A. C. Popescu, G. E. Stan, L. Duta, G. Dorcioman, O. Iordache, I. Dumitrescu, I. Pasuk, I. N. Mihailescu	2.163
99	Multi-layer haemocompatible diamond-like carbon coatings obtained by combined radio frequency plasma enhanced chemical vapor deposition and magnetron sputtering	Journal of Materials Science: Materials in Medicine 24 (12) , pp. 2695-2707	A. C. Popa, G. E. Stan, M. A. Husanu, I. Pasuk, I. D. Popescu, A. C. Popescu, I. N. Mihailescu	2.141
100	A general model for multi-mode laser processing of solids	Romanian Reports in Physics 64 (4), 1053-1062, 2013	G. Florescu, M.Oane, A. Peled, I. N. Mihailescu	1.123
101	Multiple nano-second laser ablation of metals based upon a new two-temperature approach	Romanian Reports in Physics, Vol. 65, No. 3, P. 979–983, 2013	N. Serban, M. Oane, I. N. Mihailescu	1.123
102	Effect of thermal annealing on the structural and optical properties of Ag/As2S3 multilayers	Chalcogenide Letters 10 (11) , pp. 467-472 (2013)	Sava, F. , Lorinczi, A., Velea, A., Simandan, I.D., Preda, N., Socol, G., Mih ă ilescu, I.N., Zamfir, C.S., Creţu, N.-C, Popescu, M.	0.934
103	Biological hydroxyapatite thin films synthesized by pulsed laser deposition	Optoelectronics and Advanced Materials, Rapid Communications 7 (11-12) , pp. 1040-1044 (2013)	Duta, L., Serban, N., Oktar, F.N., Mihailescu, I.N.	0.402
104	Processing and immobilization of chondroitin-4-sulphate by UV laser radiation	Colloids and Surfaces B: Biointerfaces 104 , pp. 169-173 (2013)	György, E., Pérez del Pino, A., Roqueta, J., Sánchez, C., Oliva, A.G.	3.554
105	Effect of laser radiation on multi-wall carbon nanotubes: Study of shell structure and immobilization process	Journal of Nanoparticle Research 15 (8) , art. no. 1852 (2013)	György, E., Pérez Del Pino, A., Roqueta, J., Ballesteros, B., Cabana, L., Tobias, G.	2.175
106	State selective photo-recombination cross	European Physical Journal D: At. Mol. Opt. Plasma Phys. 2013, 67:223	V Stancalie	1.513

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107	The level of ethylene biormarker in renal failure ofelderly patients analyzed by photoacoustic spectroscopy	Laser Physics, Vol. 23, No. 12, doi:10.1088/1054-660X/23/12/125701, Article id 125701 (2013)	C. Popa, S. Banita, A. M. Bratu, M. Patachia, C. Matei, D. C. Dumitras	2.545
108	Spectroscopic study of ammonia molecules at subjects with kidney failure: a case control study	Rev. Roum. Chim, Vol. 58, No. 9, (2013)	C. Popa, M. Patachia, S Banita, D. C. Dumitras	0.331
109	Spatio-temporal analysis of the distorted chirped pulse amplification laser beam in focus	OAM-RC, Vol. 7-8, p. 481-484 (2013)	L.Ionel	0.402
110	An alternative method for the compensation of laser beam spatial distortions based on computer generated holograms	Rom. Rep. Phys., Vol 65, No.3, pp. 984-996, (2013)	L.Ionel	1.123
111	Above-threshold ionization of hydrogen and hydrogen-like ions by X-ray pulses	CENTRAL EUROPEAN JOURNAL OF PHYSICS, 11, 1091-1098 (2013)	H. Bachau, O. Budriga, M. Dondera, V. Florescu	0.905
112	Laser beam evaluation methods to study changes in 12 MeV energetic protons irradiated glasses	Journal of Optoelectronics and Advanced Materials, 15 (11-12) , pp. 1403-1411	Ioan, M.-R., Gruia, I. , Ioan, G.-V., Rusen, L., Ioan, P., Zorila, A.	0.516
113	MAPLE-based method to obtain biodegradable hybrid polymeric thin films with embedded antitumoral agents	Biomedical Microdevices DOI: 10.1007/s10544-013-9801-9; Print ISSN 1387-2176	V.Dinca, P.E.Florian, L.E.Sima, L.Rusen, C.Constantinescu, R.W.Evans, M.Dinescu, A.Roseanu	2.718
114	Real-time detection of optical damage induced by high-power laser pulses	U.P.B. Sci. Bull., Series A, 75, Iss. 4, 2013	Alexandru ZORILA, Sandel SIMION, Laurentiu RUSEN, Aurel STRATAN, Paul SCHIOPU	0.3
115	Investigation and control of ultrafast laser-induced isotropic and anisotropic nanoscale-modulated index patterns in bulk fused silica	Optical Materials Express, vol 3, pp. 1755-1768, 2013	R. Stoian, K. Mishchik, G. Cheng, C. Mauclair, C. D'Amico, J. P. Colombier, and M. Zamfirescu	2.616
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117	On the Synthesis and Physical Properties of Iron Doped SnO2 Nanoparticles	JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY Volume: 12 Issue: 12 Pages: 9299-9301 DOI: 10.1166/jnn.2012.6784 Published: DEC 2012	Wei, X ; Georgescu, R ; Ali, N ; Morjan, I ; George, TA ; Dumitrache, F ; Birjega, R ; Chipara, M; Skomski, R ; Sellmyer, DJ	1.149
118	Recent progress in the synthesis of magnetic titania/iron-based, composite nanoparticles	Applied Surface Science, Available online 30 October 2013, http://dx.doi.org/10.1016/j.apsusc.2013.10.138	C.T. Fleaca, M. Scarisoreanu, I. Morjan, R. Alexandrescu, F. Dumitrache, C.	2.112

	manufactured by laser pyrolysis		Luculescu, I.P. Morjan, R. Birjega, A.-M. Niculescu, G. Filoti, V. Kuncser, E. Vasile, V. Danciu, M. Popa	
119	Effect of the manufacturing parameters on the structure of nitrogen-doped carbon nanotubes produced by catalytic laser-induced chemical vapor deposition	Journal of Nanoparticle Research, (2013), 15:2045 DOI10.1007/s 11051-013-2045-z	I. P. Morjan, R .Alexandrescu, I. Morjan, C. Luculescu, E. Vasile, P. Osiceanu, M. Scarisoreanu, G. Demian	2.175
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121	Magnetic properties of iron-carbon nanocomposites obtained by laser pyrolysis in specific configurations	APPLIED SURFACE SCIENCE vol. 278 , pg: 305-312 DOI: 10.1016/j.apsusc.2012.12.094 Published: AUG 1 2013	Schinteie, G; Kuncser, V; Palade, P; Dumitrache, F; Alexandrescu, R; Morjan, I; Filoti, G	2.112
122	The determination of two photon thermal fields in laser-two-layer solids weak interaction using Green function method	Romanian Reports in Physics 65, 3, 997-1005, 2013	Oane, M., Medianu, R., Georgescu, G., Toader, D., Peled, D.	1.123
123	Sputtered zinc oxide thin films deposited on polyimide substrate and annealing effect on the physical characteristics	Thin Solid Films, 545, 564-570	Prepelita, P., Craciun, V., Filipescu, M., Garoi, F.	1.604
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125	Eu^{3+} luminescence in aluminophosphate glasses	Journal of Luminescence, 145, 582–587	Nico, C., Fernandes, R., Graca, M. P. F., Elisa, M., Sava, B. A., Monteiro, R. C. C., Rino, L., Monteiro, T.	2.144
126	Effects of ultraviolet excitation on the spectroscopic properties of Sm3+and Tb3+ doped aluminophosphate glasses	Optical Materials, 35,12, 2382-2388, 2013	Nico, C., Graca, M. P. F., Elisa, M., Sava, B. A., Monteiro, R. C. C., Rino, L., Monteiro, T.	1.918
127	Preparation method and thermal properties of samarium and europium-doped alumino-phosphate glasses	Materials Science and Engineering B, 178, 1429– 1435, 2013	Sava, B. A., Elisa, M., Boroica, L., Monteiro, R. C. C.	1.846
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129	Studies about phthalocyanine photosensitizers to be used in photodynamic therapy	*Rom. Rep. Phys.,* Vol. 65, No. 3, p. 1032–1051, 2013	A. Staicu, A. Pascu, A. Nuta, A. Sorescu, V. Raditoiu, M. L. Pascu	1.123
130	1064 nm Nd:YAG long pulse laser after polidocanol microfoam injection dramatically improves the result of leg vein treatment: A randomized controlled trial on 517 legs with a three-year follow- up	Phlebology, published online 29 August 2013	Javier Moreno-Moraga, Adriana Smarandache, Mihail L Pascu, Josefina Royo and Mario A Trelles	1.458
131	Laser processing of organic materials: applications in tissue engineering and chemical sensing	ROMANIAN REPORTS IN PHYSICS 65 (3) 1019-1031, (2013)	Dinescu, M; Matei, A; Dinca, V; Papavlu, AP; Di Pietrantonio, F; Cannata, D; Benetti, M; Verona, E;Lippert, T	1.123
132	Pulsed laser deposition of lysozyme: the dependence on shot numbers and the angular distribution	APPLIED PHYSICS B-LASERS AND OPTICS 113 (3) 367-371 (2013)	Constantinescu, C; Matei, A; Schou, J; Canulescu, S; Dinescu, M	2.112
133	Layered double hydroxides/polymer thin films grown by matrix assisted pulsed laser evaporation	THIN SOLID FILMS 543, 63-68, (2013)	Birjega, R; Matei, A; Mitu, B; Ionita, MD; Filipescu, M; Stokker-Cheregi, F; Luculescu, C; Dinescu, M ; Zavoianu, R; Pavel, OD ; Corobea, MC	1.604
134	Pulsed Laser Deposition of Yttria Stabilized Zirconia Based Heterostructure	Thin Solid Films, DOI: doi: 10.1016/j.tsf.2013.11.130, accepted Manuscript, 2013	R. Pascu, S. Somacescu, G. Epurescu, M. Filipescu, C. Luculescu, D. Colceag, P. Osiceanu, R. Birjega, B. Mitu	1.604
135	Carbon nanowalls as suitable layers for lubricity improvement	Digest Journal of Nanomaterials and Biostructures 8, No. 3, 1145 – 1156 (2013)	S. Vizireanu, A. Lazea Stoyanova, M. Filipescu, D. Cursaru, G. Dinescu,	1.092
136	Retention of heavy metals on layered double hydroxides thin films deposited by pulsed laser deposition	Applied Surface Science http://dx.doi.org/10.1016/j.apsusc.2013.10.181 (2013)	A. Vlad, R. Birjega, A. Matei, C. Luculescu, B. Mitu, M. Dinescu, R. Zavoianu, O.D. Pavel	2.112
137	LASER PROCESSING OF ORGANIC MATERIALS: APPLICATIONS IN TISSUE ENGINEERING AND CHEMICAL SENSING	ROMANIAN REPORTS IN PHYSICS 65 (3), 1019-1031 (2013)	Dinescu, M; Matei, A; Dinca, V ; Papavlu, AP; Di Pietrantonio, F ; Cannata, D; Benetti, M ; Verona, E ; Lippert, T	1.123
138	Eco-friendly synthetic route for layered zinc compound and its conversion to ZnO with photocatalytical properties	SOLID STATE SCIENCES 23, 58-64 (2013)	Greta Patrinoiu , Jose Maria Calderón-Moreno , Daniela C. Culita, Ruxandra Birjega , Ramona Ene , Oana Carp	1.671
139	Layered double hydroxides/polymer	THIN SOLID FILMS 543, 63–68 (2013)	R. Birjega , A. Matei , B. Mitu M.D. Ionita	1.604

	thin films grown by matrix assisted pulsed laser evaporation		M. Filipescu , F. Stokker-Cheregi , C. Luculescu ,M. Dinescu , R. Zavoianu , O.D. Pavel , M.C. Corobea	
140	Optical, morphological and thermal behaviour of NdFeB magnetic thin films grown by radiofrequency plasma-assisted pulsed laser deposition	CURRENT APPLIED PHYSICS 13 (9) 2019-2025 (2013)	Constantinescu, C ; Ion, V ; Codescu, M; Rotaru, P; Dinescu, M	1.814
141	Optical, morphological and thermal behaviour of NdFeB magnetic thin films grown by radiofrequency plasma-assisted pulsed laser deposition	CURRENT APPLIED PHYSICS 13 (9) 2019-2025 (2013)	Constantinescu, C ; Ion, V ; Codescu, M ; Rotaru, P ; Dinescu, M	1.814
142	Luminescent Eosin Y-SiO2 hybrid nano and microrods prepared by sol-gel template method	JOURNAL OF LUMINESCENCE 143, 89-92 (2013)	Secu, M ; Secu, CE ; Sima, M ; Negrea, RF ; Bartha, C ; Dinescu, M ; Damian, V	2.144
143.	Violet and near-ultraviolet upconversion luminescence in $La_3Ga_{5.5}Ta_{0.5}O_{14}$ codoped with Er^{3+} and Yb^{3+}	Physica B **413**, 55-58 (2013).	S. Georgescu, A. M. Voiculescu, C. Matei, A. G. Stefan, and O. Toma	1.327
144.	Novel laterally pumped by prism laser configuration for compact solid-state lasers	Laser Physics Letters **10** (5), 05580 (2013).	T. Dascalu, G. Salamu, O. Sandu, F. Voicu, and N. Pavel	7.714
145.	Infrared-excited red, green, violet and UV luminescence from langasite crystal doped with erbium and ytterbium	Rom. J. Phys. **58** (1-2), 136-142 (2013).	A. M. Voiculescu, S. Georgescu, C. Matei, A. G. Stefan, L. Gheorghe, A. Achim, and F. Voicu	0.526
146.	Ultraviolet and visible up-conversion luminescence of Er^{3+}/Yb^{3+} co-doped CaF_2 nanocrystals in sol-gel derived glass-ceramics	Journal of Luminescence **143**,150-156 (2013).	S. Georgescu, A. M. Voiculescu, C. Matei, C. E. Secu, R. F. Negrea, and M. Secu	2.144
147.	Selectively excited Er^{3+} luminescence in calcium lithium niobium gallium garnet	Rom. J. Phys. **58** (3-4), 365-372 (2013)	O. Toma and S. Georgescu	0.526
148.	Isolated centres versus defect associates in Sm^{3+} doped CeO_2: A spectroscopic investigation	J. Phys. D: Appl. Phys. **46** (27), 275302 (2013)	C. Tiseanu, B. Cojocaru, D. Avram, V. I. Parvulescu, A. V. Vela-Gonzalez and M. Sanchez-Dominguez	2.528
149.	Efficient laser emission in diode-pumped Nd:YAG buried waveguides realized by direct femtosecond-laser writing	Laser Physics Letters **10** (9), 095802 (2013)	N. Pavel, G. Salamu, F. Voicu, F. Jipa, M. Zamfirescu, and T. Dascalu	7.714

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151.	Spectroscopic investigation of iron sustitution in $EuCoO_3$ on the catalytic properties in the high-temperature N_2O decomposition	J. Phys. Chem. C **117** (27), 13989-13999 (2013)	Y. Wu, C. Dujardin, P. Granger, C. Tiseanu, S. Sandu, V. Kuncser, and V. I. Parvulescu	4.814
152.	A new synthetic route towards binuclear 3d-4f complexes, using non-compartmental ligands derived from *o*-vanillin. Syntheses, crystal structures magnetic and luminescent properties	New. J. Chem. **37**, 2280-2292 (2013)	M. Sarwar, A. M. Madalan, C. Tiseanu, G. Novitchi, C. Maxim, G. Marinescu, D. Luneau, and M. Andruh	2.966
153.	Thermal shifts of Sm^{3+} lines in YAG and cubic sesquioxide ceramics	Opt. Mat. Express **3** (10), 1641-1646 (2013)	A. Lupei, V. Lupei, and C. Gheorghe	2.616
154.	Electronic structure of Sm^{3+} ions in YAG and cubic sesquioxide ceramics	Opt. Mat. **36** (2), 419-424 (2013).	A. Lupei, V. Lupei, and C. Gheorghe	1.918
155	Influence of Si concentration on electrical and optical properties of room temperature ZnO:Si thin films Thin Solid Films, Volume 531, 15 March 2013, Pages 197-202 J. Clatot, M. Nistor, A. Rougier	Thin Solid Films, Volume 531, Pag 197-202 , (2013),	J. Clatot, M. Nistor, A. Rougier	1.604
156	In2O3 Thin Film Paper Transistors,	J. Display Technol. 9, 760-763 (2013)	F. Gherendi, M. Nistor, and N. B. Mandache	1.663
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159	Self-assembled homojunction In2O3 transparent thin-film transistors	Sci. Technol. 28 085002 (2013), doi:10.1088/0268-1242/28/8/085002	F.Gherendi, M.Nistor, S.Antohe, L.Ion, I.Enculescu and N. B. Mandache	1.921
160	The mechanism of plasma destruction of enalapril and related metabolites in water	Plasma Processes and Polymers 10 (5) , pp. 459-468, 2013	M. Magureanu, D. Dobrin, N.B. Mandache, C. Bradu, A. Medvedovici, V.I. Parvulescu	3.73
161	Pulsed corona discharge for degradation of methylene blue in water	Plasma Chemistry and Plasma Processing 33 (1) , pp. 51-64, 2013	M. Magureanu, C. Bradu, D. Piroi, N.B. Mandache, V.I. Parvulescu	1.728
162	Degradation of diclofenac in water	Chemical Engineering Journal, in press,	D. Dobrin, C. Bradu, M. Magureanu, N.B.	3.473

	using a pulsed corona discharge	http://dx.doi.org/10.1016/j.cej.2013.08.114	Mandache, V.I. Parvulescu	
163	Ion stochastic trapping and drift turbulence evolution	**Physical Review E87** 053105 (2013)	M. Vlad	2.313
164	A Model for the Error Field Effect on Resistive Wall Modes	Contrib. Plasma Phys. **53**, 214-233 (2013)	I. G. Miron	0.934
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166	A Model for the Neoclassical Toroidal Viscosity Effect on Edge Plasma Toroidal Rotation	Contributions to Plasma Physics 53, 653 – 661, 2013	I.G. Miron	0.934
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168	Definition of the radiation fields for the JET gamma-ray spectrometer diagnostics	Fusion Engineering and Design, 88 (6-8), pp. 1366-1370	Zoita, V., Soare, S., Craciunescu, T., Curuia, M., Kiptily, V., Balshaw, N., Blanchard, P., Croft, D., Murari, A., Syme, B. Definition of the radiation fields for the JET gamma-ray spectrometer diagnostics	0.842
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170	Radiation Dosimeter Using an Extrinsic Fiber Optic Sensor	Sensors Journal, IEEE, Volume 14, Issue 3, pg 673-685	McCarthy, D. , O'Keeffe, S. ; Lewis, E. ; Sporea, D.G. ; Sporea, A. ; Tiseanu, I. ; Woulfe, P. ; Cronin, J.	1.52
171	Positive effect of non-thermal plasma treatment on radish seeds	Romanian Reports in Physics (acceptata)	A.L. Mihai, D. Dobrin, M. Magureanu, M.E. Popa	1.123
172	Evaluation of submillimeter electromagnetic waves scattering on dust particles in plasma	Journal of Optoelectronics and Advanced Materials 15, 294-298 (2012)	D. Toader, M.L. Munteanu , N. Banu, A. Scurtu , C. M. Ticos	0.516
173	High Speed Imaging of Dust in Plasmas	Journal of Plasma Physics 79, 273–285 (2013)	C. M. Ticos, D. Toader, L. M. Munteanu, N. Banu, A. Scurtu	0.755

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176	E-Beam SO2 and NOx removal from flue gases in the presence of fine water droplets	Radiation Physics and Chemistry, 85 , 130-138, 2013	Ioan Calinescu; Diana Martin; Andrezj Chmielewski; Daniel Ighigeanu	1.375
177	Radiation vulcanization of natural rubber with polyfunctional monomers	Polymer Bulletin (in press) 71, Nr.1, 57-82 (2013)	E. Manaila, G. Craciun, M. D. Stelescu, D. Ighigeanu, M. Ficai	1.332
178	PHYSICOCHEMICAL PROPERTIES OF CORN STARCH PROCESSED WITH ACCELERATED ELECTRON BEAM	Brazilian Journal of Chemical Engineering (in press)	Mirela Braşoveanu, Monica R. Nemţanu and Denisa Duţă	0.8940
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180	A 1-D Dusty Plasma Photonic Crystal	Journal of Applied Physics 114, 113305-1/10 (2013)	M. L. Mitu, D. Toader, N. Banu, A. Scurtu, C. M. Ticos	2.21
181	Bandgaps in the dispersion of waves on a string of dust particles floating in plasma	U.P.B. Sci. Bull., Series A (in press, 2013)	C. M. Ticos	0.3
182	Survey of plasma crystal symmetry	Journal of Optoelectronics and Advanced Materials 15, Nr. 9-10, 976-981 (2013).	N. Banu, D. Toader, M.L. Munteanu, A. Scurtu, C. M. Ticos	0.516
183	MULTIPLE NANO-SECOND LASER ABLATION OF METALS BASED UPON A NEW TWO-TEMPERATURE APPROACH	Romanian Reports in Physics, Vol. 65, No. 3, P. 979–983, (2013)	N. SERBAN, M. OANE, I. N. MIHAILESCU*	1.123
184	THE DETERMINATION OF TWO PHOTON THERMAL FIELDS IN LASER-TWO-LAYER SOLIDS WEAK INTERACTION USING GREEN FUNCTION METHOD	Romanian Reports in Physics, Vol. 65, No. 3, P. 997–1005, (2013)	M. OANE , R. MEDIANU , G. GEORGESCU , D. TOADER, A. PELED	1.123
185	Two temperature model for metals: A new radical approach	Lasers in Engineering, Vol. 24, No. 1-2, P. 105-113, (2013)	M. Oane, M. Taca, S.L. Tsao	0.469
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187	Volume fraction dependent magnetic behaviour of ferrofluids for rotating seal applications	Journal of Physics D: Applied Physics46, 395501 (2013)	G Schinteie, P Palade, L Vekas , N Iacob, C Bartha and V Kuncser	2.528
188	Evaluation of submillimeter electromagnetic waves scattering on dust particles in plasma	Journal of Optoelectronics and Advanced Materials 15, 294-298 (2012)	D. Toader, M.L. Munteanu , N. Banu, A. Scurtu , C. M. Ticos	0.516
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196	Study of optical fiber as a new radiation dosimeter	Romanian Reports in Physics, Vol. 65, No. 4, 1438 – 1442 (2013)	E. Badita, E. Stancu, F. Scarlat, A. Scarisoreanu	1.123
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198	Absorbed dose distributions using the isodensitometric method for exposures with filter employed for mammographies	Rom. Reports in Physics **65** (1), 168 - 177 (2013)	F. Scarlat, A. Scarisoreanu, N. Verga	1.123

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201	Electrochemical anodic oxidation of nitrogen doped carbon nanowall films	Applied Surface Science, 273(2013)49-57 (DOI: 10.1016/j.apsusc.2013.01.112)	A. Achour, S. Vizireanu, G. Dinescu, Le Brizoual, M.-A. Djouadi and M. Boujtita	2.112
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204	Layered double hydroxides/polymer thin films grown by matrix assisted pulsedlaser evaporation	Thin Solid Films (2013) http://dx.doi.org/10.1016/j.tsf.2013.02.120	R. Birjega, A. Matei, B. Mitu, M.D. Ionita, M. Filipescu, F. Stokker-Cheregi, C. Luculescu, M. Dinescu, R. Zavoianu, O.D. Pavel, M.C. Corobea	1.604
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214	Ferrocene, an old molecule with a bright future: Thin films grown by matrix-assisted pulsed laser evaporation for nonlinear optical applications	Original Research Article Journal of Organometallic Chemistry, In Press, Corrected Proof http://dx.doi.org/10.1016/j.jorganchem.2013.10.056	Andreea Matei, Catalin Constantinescu, Valentin Ion, Bogdana Mitu, Iulian Ionita, Maria Dinescu, Cristina Vasiliu, Ana Emandi Bogdana Mitu	
215	Ferrocene carboxaldehyde thin films grown by matrix-assisted pulsed laser evaporation for non linear optical applications	Original Research Article Applied Surface Science, In Press, Corrected Proof http://dx.doi.org/10.1016/j.apsusc.2013.11.147	Catalin Constantinescu, Andreea Matei, Valentin Ion, Bogdana Mitu, Iulian Ionita, Maria Dinescu, Catalin. R. Luculescu, Cristina Vasiliu, Ana Emandi Bogdana Mitu	
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232	Stability of carbon nanowalls against chemical attack with acid solutions	Physica E: Low-Dimensional Systems and Nanostructures, 47, 59, 2013, http://dx.doi.org/10.1016/j.physe.2012.09.027	**S. Vizireanu, G. Dinescu**, L.C. Nistor, M. Baibarac, G. Ruxanda, M. Stancu, D. Ciuparu,	1.522
233	Entanglement between electronic and vibrational degrees of freedom in a laser-driven molecular system	Physical Review A, 88, 063415, 2013	M. Vătășescu	2.991
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1.	Study on the effects of proton irradiation on the dc characteristics of AlGaN/GaN high electron mobility transistors with source field plate	JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 32, Article Number: 022202, Published: MAR 2014	Liu L, Hwang YH, Xi YY, Ren F, Craciun V, Pearton S, Yang G, Kim H-Y, Kim J	1.3580
2.	Relevance of annealing on the stoichiometry and morphology of transparent thin films,	APPLIED SURFACE SCIENCE Volume: 306 Pages: 47-51 Published: JUL 1 2014	Prepelita P, Craciun V, Sbarcea G, Garoi F	2.5380
3.	Optical properties of amorphous indium zinc oxide thin films synthesized by pulsed laser deposition	APPLIED SURFACE SCIENCE Volume: 306 Pages: 52-55 Published: JUL 1 2014	Craciun V, Martin C, Socol G, Tanner D, Swart HC, Becherescu N, Craciun D	2.5380
4.	Band Offsets in YSZ/InGaZnO4 Heterostructure System	JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY Volume: 14 Issue: 5 Pages: 3925-3927 Published: MAY 2014	Kim JK, Kim K–W, Douglas EA, Gila BP, Craciun V, Lambers ES, Norton, DP, Ren F, Pearton SJ, Cho H	1.3390
5.	Crystallization and microstructure of Eu3+-doped lithium aluminophosphate glass	Journal Non-Crystalline Solids, 403, 9-17, 2014	Roque S. Soares, Regina C. C. Monteiro, Andreia A. S. Lopes, Maria M. R. A. Lima, Bogdan A. Sava, Mihail Elisa	1.716
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8.	Eu3+ luminescence in aluminophosphate glasses	Journal of Luminescence 2014	C. Nico, R. Fernandes, M.P.F. Graça, M. Elisa, B.A. Sava, R.C.C. Monteiro, L. Rino, T. Monteiro	2.367

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10.	Measuring very low optical powers with a common camera	APPLIED OPTICS 53 (24), 5460-5464 (2014)	Popescu, S. T.; Gheorghe, P; Petris, A	1.649
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15.	Surface properties of Vancomycin after interaction with laser beams	Colloids and Surfaces A: Physicochemical and Engineering Aspects, Available online 21 September 2014, DOI:10.1016/j.colsurfa.2014.08.023.	A. Dinache, M. Boni, T. Alexandru , E. Radu, A. Stoicu, I. R. Andrei, A. Staicu, L. Liggieri, V. Nastasa, M. L. Pascu, M. Ferrari	2.354
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19.	"Correlation between irradiation conditions and nanoparticles obtained in case of laser ablation of aluminum targets in liquids	OPTICS AND LASER TECHNOLOGY Volume: 59 Pages: 93-98 DOI: 10.1016/j.optlastec.2013.11.015 Published: JUL 2014	Damian, V; Apostol, I.; Apostol, D; Bojan, M; Iordache, I; Manoiu, S; Militaru, A; Udrea, C,	1.694
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30.	Spectroscopic assessment of ethylene Hormone production at strawberry fruits	U.P.B. Sci. Bull., Series A, Vol. 76, Iss. 3, pp 219-224(2014)	Ş Băniţă	0.28
31.	"A simple approach for the magnetic relaxation in systems of weakly-interacting, dispersive nanoparticles in applied magnetic field"	J. Superconductivity Nov. Magnetism 27(3), 781-785 (2014)	Miu, Dana; Sima, C.; Jinga, S.I., Vasile, B.S.; Miu, L;	0.930
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33.	Increased Diffusion Coefficient of Polymeric Nanocomposite Layer for Gas Sensing Applications	Sensors Letters, Vol 11, Number 12, pp.2327-2332, Decembrie 2013 (nu a fost prin in fisa de evaluare 2013)	Ionut Nicolae, Cristian Viespe, Natalia Serban, Constantin Catalin Negrila,Valentin Serban Teodorescu, Lucian Trupina	0.558
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148	Plasma functionalization of carbon nanowalls and its effect on attachment of fibroblast-like cells	JOURNAL OF PHYSICS D-APPLIED PHYSICS, Vol. 47, Issue 26, Article no. 265203, 2014	Stancu, E. C.; Stanciuc, A. M.; Vizireanu, S; Luculescu, C; Moldovan, L; Achour, A; Dinescu, G	2,521
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248	New Operational Matrices for Solving Fractional Differential Equations on the Half-Line	PLOS ONE (vol 10, e0126620, 2015)	Bhrawy, Ali H.; Taha, Taha M.; Alzahrani, Ebraheem O.; Baleanu, Dumitru; Alzahrani, Abdulrahim A.	3.234
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253	Measurement of charged jet production cross sections and nuclear modification in p-Pb collisions at root s(NN)=5.02 TeV	PHYSICS LETTERS B, 749, 68-81 (2015)	Adam, J. et al	6.131
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347	On the 60th Anniversary of Professor Jordan Yankov Hristov	THERMAL SCIENCE, 19, SXI-SXII (2015)	Baleanu, Dumitru; Yang, Xiao-Jun; Xie, Gongnan	1.222

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