

ANCS



INC DTIM

**Institutul Național
de Cercetare–Dezvoltare
pentru Tehnologii
Izotopice și Moleculare
Cluj-Napoca**

**RAPORT ANUAL
DE ACTIVITATE**

2012



**INSTITUTUL NATIONAL DE CERCETARE– DEZVOLTARE PENTRU
TEHNOLOGII IZOTOPICE SI MOLECULARE**

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Raport anual de activitate



Raport anual de activitate

Director General
Dr. Ing. Adrian BOT

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1.1. Denumirea: Institutul Național de Cercetare Dezvoltare pentru Tehnologii Izotopice și Moleculare

1.2. Actul de înființare cu modificările ulterioare:

Hotărâre nr. 408/1999 privind înființarea Institutului Național de Cercetare-Dezvoltare pentru Tehnologii Izotopice și Moleculare – I.N.C.D.T.I.M. Cluj-Napoca

Hotărâre nr 1401/2005 pentru aprobarea Regulamentului de organizare și funcționare a Institutului Național de Cercetare-Dezvoltare pentru Tehnologii Izotopice și Moleculare – I.N.C.D.T.I.M. Cluj-Napoca

1.3. Numărul de înregistrare în Registrul potențialilor contractori: J12/773/2000

1.4. Adresa: Cluj-Napoca str. Donath 65-103

1.5. Telefon: 0264-584037, fax: 0264-420042, pagina web: <http://www.itim-cj.ro>, e-mail: itim@itim-cj.ro

2. Scurtă prezentare a INCDTIM

2.1. Istoric:

1949 - la București se înființează Secția de fizică a Academiei Române;

1950 - la Cluj-Napoca ia naștere Secția de fizică a Filialei Academiei Române;

1956 - la București Măgurele se fondează Institutul de Fizică Atomică (IFA), iar Secția de Fizică din Cluj a Academiei devine filială a IFA București;

1970 - Secția IFA din Cluj devine unitate de gestiune economică proprie sub denumirea de *Institutul de Izotopi Stabili*, având ca obiect de activitate efectuarea de cercetări și dezvoltarea de tehnologii privind producerea de apă grea, izotopi stabili, proiectarea și producerea de aparatură științifică pentru aplicațiile izotopilor stabili;

1977 - *Institutul de Izotopi Stabili* își schimbă denumirea în *Institutul de Tehnologie Izotopică și Moleculară ITIM Cluj-Napoca*, unitate cu personalitate juridică, în subordinea Comitetului de Stat pentru Energie Nucleară;

1999 - prin reorganizarea ITIM Cluj-Napoca ia ființă ***Institutul Național de Cercetare Dezvoltare pentru Tehnologii Izotopice și Moleculare INCDTIM Cluj-Napoca*** (HG 408/1999);

2005 - INCDTIM Cluj-Napoca este reacreditat ca Institut Național de Cercetare Dezvoltare (HG 1401/2005);

2008 - INCDTIM Cluj-Napoca este reacreditat și atestat ca Institut Național de Cercetare-Dezvoltare (Decizia ANCS NR. 9634/2008).

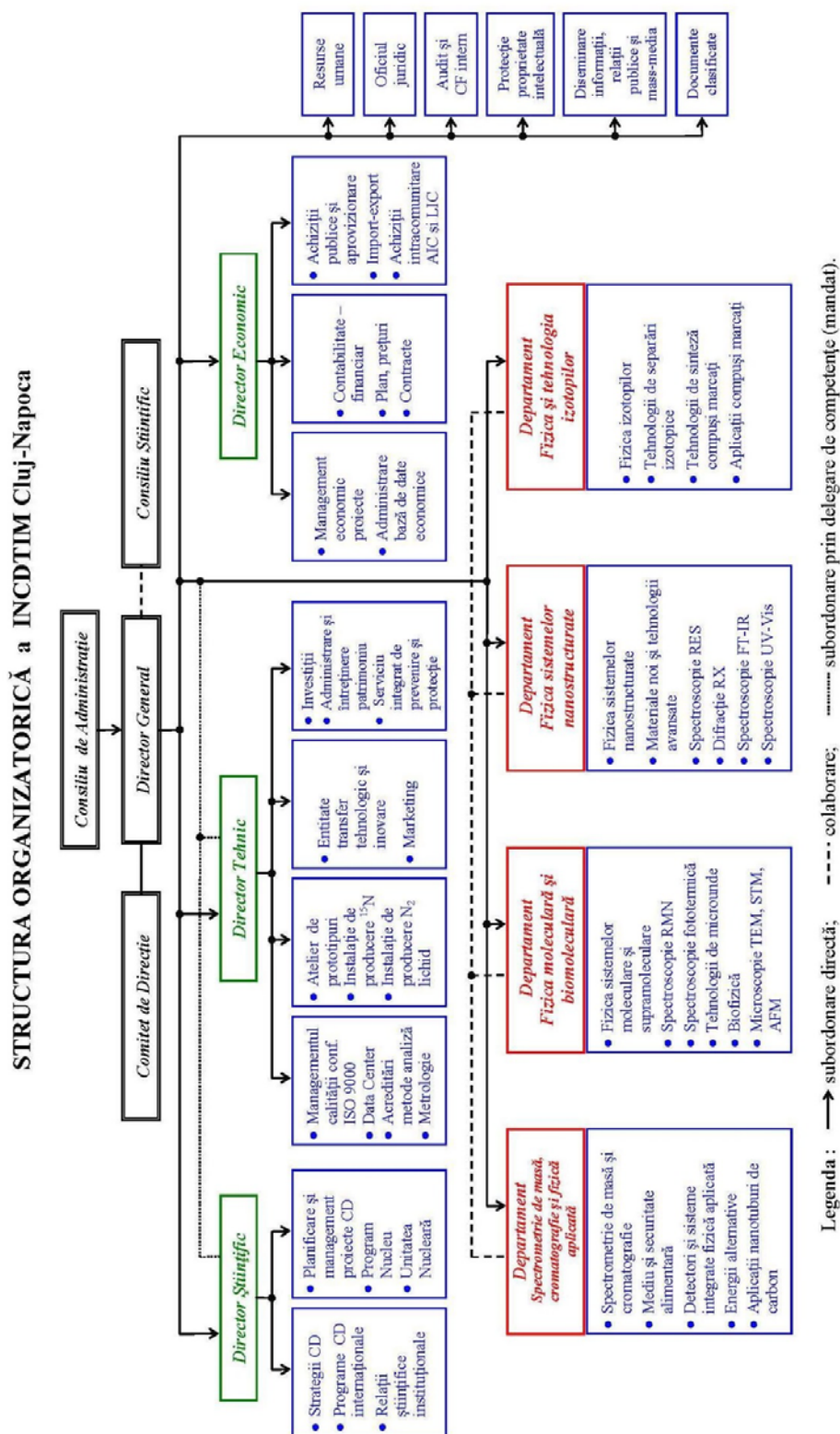
2009—INCDTIM *Certificat conform SR EN ISO/9001/2008* și Departamentul de Spectrometrie de Masa, Cromatografie și Fizica Aplicata -*Acreditat conform SR EN ISO/CEI 17025/2005, Certificat Acreditare Nr. LI 823/19.10.2009* emis de Asociația de Acreditare din România— RENAR

2010 – sărbătoarea a 60 ani de existență

2011 – evaluarea instituțională, se obține calificativ A+

2.2. Structura organizatorică

Organigrama



2.3. Domeniul de specialitate al INCDTIM

a. conform clasificării UNESCO: **2207 (Fizică Atomică și Moleculară)**

b. conform clasificării CAEN: **7219 (Cercetare Dezvoltare în alte științe naturale și inginerie)**

2.4. Direcții de cercetare-dezvoltare

a. domenii principale de cercetare-dezvoltare

Activitatea de cercetare, dezvoltare, inovare în INCDTIM este împărțită în 4 domenii principale și se desfășoară în 4 departamente de cercetare: Departamentul Spectrometrie de Masă, Cromatografie și Fizică Aplicată, Departamentul Fizica și Tehnologia Izotopilor, Departamentul Fizica Sistemelor Nanostructurate, Departamentul Fizică Moleculară și Biomoleculară.

b. domenii secundare de cercetare sunt abordate de 13 echipe de cercetare cu următoarele tematici:

1. Determinări structurale și cantitative la compuși moleculari prin spectrometrie de masă și cromatografie: determinări structurale și cantitative la compuși organici din mediu, alimente și tesuturi biologice, investigații pe baze moleculare a obiectelor de artă în vederea autentificării și punerii lor în valoare, determinări de urme de metale grele pentru studii de distribuție în matrici de mediu și biotă; determinări de compusi organici și anorganici prin metode acreditate utilizând tehnici cromatografice și spectrometrice de masă.
2. Aplicații ale izotopilor stabili: siguranța alimentară, hidrologie izotopică, ciclul global al carbonului, fiziologia plantelor.
3. Nanostructuri de carbon și stocare de hidrogen: stocare hidrogen, structuri metal-organice, nanotuburi de carbon, grafene.
4. "High-Tech Engineering in ATLAS Experiment at LHC CERN Geneva": contribuții la construcția și comisionarea Calorimetrului Hadronic parte a detectorului ATLAS, contribuții la mentenanța Calorimetrului Hadronic ATLAS, upgradarea Calorimetrului Hadronic ATLAS, dezvoltare sistem Grid pentru prelucrarea datelor furnizate de experimentul ATLAS.
5. Nanocompozite magnetice cu proprietăți ajustabile: nanocompozite magnetice având caracteristici magnetice ajustabile precum și arhitectura, compoziție și biofuncționalități predeterminate, nanoparticule pe bază de semiconductori oxidici diluați magnetic, caracterizare, testare și aplicații ale nanosistemelor oxidice cu potențial foto-electrocatalitic, metode și materiale utilizate în studiul dispersiei agenților poluanți în natură.
6. Materiale hibride functionalizate pe bază de polimeri și nanoparticule anorganice: materiale hibride inteligente pe bază de nanofluid magnetic și polimeri cu răspuns la stimuli externi, microgeluri magnetice multifuncționale cu arhitectură controlată: sinteză, caracterizare, aplicații în biotehnologii, nanostructuri hibride biocompatibile pe bază de nanoparticule magnetice și polimeri/copolimeri cu funcționalitate specifică pentru aplicații în nanomedicină, noi organocatalizatori reciclabili pe baza de nanostructuri magnetice functionalizate

7. Spectroscopia sistemelor moleculare, supramoleculare și nanostructurate multifuncționale: forme polimorfe și încapsularea de substanțe bioactive în ciclodextrine, structura locală și globală la catalizatori de nichel, biocompozite cu chitosan în PDT pentru cancer, chitosan cu hidroxiapatita pentru endodonție.
8. Modelare numerică: modelarea generării radiației XUV și raze X moi, modelarea fenomenelor de migrație în sisteme multistrat, investigarea benzilor energetice și a stărilor electronice excitate cu radiație coerentă, studiul adsorbției moleculelor pe suprafețe metalice prin intermediul DFT.
9. Cercetare aplicativă în domeniul microundelor și fototermiei: calorimetrie fototermică de contact și noncontact aplicată pentru studiul materialelor compozite, caracterizarea și procesarea materialelor cu ajutorul microundelor, calorimetrie fototermică de mare precizie aplicată pentru studiul nanofluidelor magnetice, cercetare fundamental privitoare la interacțiunea microundelor de înaltă frecvență (50GHz – 325GHz) cu sisteme biologice complexe.
10. Analiza structurală în solide: studiul adsorbției moleculelor pe suprafețe metalice prin intermediul DFT, implementarea de tehnologii moderne de tip high-throughput pentru obținerea de noi forme solide ale compușilor farmaceutici, elaborarea de tehnici avansate de determinare a structurii cristaline în pulberi prin combinarea RX pe pulberi, RMN pe solide, și modelări moleculare.
11. Sisteme moleculare și biomoleculare autoasamblate: interacțiuni intra și intermoleculare, interacțiuni proteină–ligand, complecși de incluziune ai ciclodextrinelor cu biomolecule de interes farmaceutic, recunoaștere moleculară și procese de autoasamblare, fabricarea și caracterizarea de structuri supramoleculare cu arhitectura controlată.
12. Tehnologii izotopice și compuși marcați: producere izotopi stabili și sinteze compuși marcați, tehnologie producere ^{15}N la presiune pentru producere combustibil nuclear , tehnologie de separare a ^{14}C prin schimb chimic CO_2 -carbamit pentru tratare deșeurilor nucleare, sinteza și caracterizarea unor aminoacizi marcați cu ^{15}N .
13. Sisteme metalice nanostructurate cu aplicații în cataliză/electrocataliză, microelectronică și medicină: producerea de H_2 prin reformarea catalitică a reziduurilor de biomasă, aplicații ale schimbului izotopic H/D pentru sinteza compușilor deuteriați și pentru studii de reactivitate a catalizatorilor, nanostructuri hibride pe bază de nanoparticule metalice și biomolecule/grafene, reacții catalitice pentru procese de depoluare: delignificare, denoxificare.

c. servicii/microproducție

INCDTIM este dotat cu un centru de calcul Data Center INCDTIM care are un site Grid denumit RO-14-ITIM, de tipul Tier2 integrat în Federația Tier 2 România. Acesta realizează prelucrare și achiziție de date în organizația virtuală ATLAS, fiind asociat cu centrul Tier1 de la Lyon din Franța. Site-ul pune la dispoziția publicului larg, certificate Grid, spațiu de stocare și capacitate de procesare de date.

Există un Atelier de Prototipuri și o Instalație pentru producerea izotopului ^{15}N prin schimb izotopic.

2.5. Modificări strategice în organizarea și funcționarea INCDTIM

3. Structura de conducere a INCDTIM

3.1. Consiliul de administrație

Dr. Ing. Adrian BOT, președinte, Director General al INCDTIM

Ec. Lucia MOISE, vicepreședinte, Ministerul Educației, Cercetării, Tineretului și Sportului

Ing. Ion GIBESCU, membru, Ministerul Muncii, Familiei și Protecției Sociale

Ec. Mariana MAN, membru, Ministerul Finanțelor

Dr. Zaharie MOLDOVAN, membru, INCDTIM

Prof. Dr. Ing. Mihail ABRUDAN, membru, Prorector Universitatea Tehnică Cluj

Dr. Nicolae ALDEA, membru, INCDTIM

3.2. Directorul General

Dr. Ing. Adrian BOT

3.3. Consiliul Științific

Dr. Zaharie Moldovan	Președinte
Dr. Nicolae Aldea	Vicepreședinte
Dr. Valer Almășan	Membru
Dr. Attila Bende	Membru
Dr. Gheorghe Borodi	Membru
Dr. Ing. Adrian Bot	Membru
Dr. Ioan Bratu	Membru
Dr. Ovidiu Pană	Membru
Dr. Valer Toșa	Membru
Dr. Diana Lazăr	Membru supleant
Dr. Cristina Munteanu	Membru supleant

3.4. Comitetul Director

Dr. Ing. Adrian BOT – Director General

Dr. Ing. Valer ALMĂȘAN – Director Științific

Ing. Gabriel POPENECIU – Director Tehnic

Ec. Diana NICOARĂ – Director Economic

Dr. Zaharie MOLDOVAN - Șef Departament Spectrometrie de Masă, Cromatografie și Fizică Aplicată

Dr. Ovidiu PANĂ – Șef Departament Fizica Sistemelor Nanostructurate

Dr. Ioan TURCU – Șef Departament Fizica Moleculară și Biomoleculară

Ing. Mihai GLIGAN - Șef Departament Fizica și Tehnologia Izotopilor

Ing. Nicolae GLIGAN – Șef Atelier Microproducție

Ing. Dumitru CHINCIȘAN – Șef Departament Mecano-Energetic

4. Situația economico-financiară a INCDTIM

4.1. Patrimonial stabilit pe baza situației financiare anuale la 31 decembrie

2011	211.086
2012	211.086

4.2. Venituri totale, din care:

	2011	2012
Venituri realizate prin contracte de cercetare-dezvoltare finanțate din fonduri publice	33,122,025	33,892,889
Venituri realizate prin contracte de cercetare-dezvoltare finanțate din fonduri private	0	0

4.3. Cheltuieli totale

2011	39,280,741
2012	42,475,869

4.4. Profit brut

2011	262,403
2012	147,028

4.5. Pierdere brută

2011	0
2012	0

4.6. Situația arieratelor – nu este cazul

4.7. Evoluția performanței economice

	2011	2012
Profit din exploatare	-173,505	-44.373
Profit financiar	435,908	191.401
Profit brut	262,403	147.028

5. Structura resursei umane de cercetare – dezvoltare

5.1. Total personal în anul 2012

Indicator/an	2011	2012
Total personal, din care:	170	199
a. Personal C-D atestat cu studii superioare	109	125
b. Număr conducători de doctorat	2	2
c. Număr de doctori	59	80

5.2. Informații privind activitățile de perfecționare a resursei umane (personal implicat în procese de formare – stagii de pregătire, cursuri de perfecționare)

1	Instruire operare microscop AFM/STS
2	Tehnici fotopiroelectrice - Termografie
3	Tehnici fototermice de contact si non-contact pentru studiul materiei condensate
4	Litografie laser Istanbul Technical University
5	Litografie laser INFLPR Bucuresti
6	Winter College on Optics: Advanced in Nano-Optics and Plasmonics
7	Tehnici de scriere prin DipPenNanolithography
8	Calcul paralel de inalta performanta cu aplicatii in stiinta materialelor
9	Spectroscopia Raman TERS pe suprafete functionalizate cu molecule organice
10	Doctoranzi
11	Asistent Relatii publice si comunicare
12	Limbi straine: engleza
13	Manager de proiect

5.3. Informații privind politica de dezvoltare a resursei umane de cercetare-dezvoltare

Obiectivul general: Creșterea și întinerirea resurselor umane, coroborată cu creșterea continuă a expertizei și abilității tehnologice sunt obiectivele majore ale INCDTIM, cu scopul de a obține rezultate noi și inovative și de a crește nivelul de încredere în INCDTIM. Acest țel poate fi atins doar cu cercetători înalt calificați, capabili să aducă idei noi și teme de cercetare care să fie transformate în propuneri de proiecte în viitoarele competiții naționale și internaționale.

Prioritățile INCDTIM privind politica de resurse umane sunt:

1. Asigurarea fluxului normal continuu de angajări tineri specialiști, pentru păstrarea unei medii de vârstă 40-45 de ani;
2. Atragerea de cercetători cu înaltă experiență științifică
3. Optimizarea și menținerea unei distribuții echilibrate pe categorii de vârstă
4. Utilizarea unui sistem bine definit și transparent de evaluare a personalului, în funcție de performanța științifică și capacitatea de a atrage finanțare prin proiecte
5. Asigurarea unui sistem de salarizare care să aibă funcția de motivare
6. Asigurarea unui mediu de muncă motivant
7. Facilitarea și asigurarea accesului la programe de pregătire și formare profesională a personalului

6. Infrastructura de cercetare-dezvoltare, facilități de cercetare

6.1. Laboratoare de cercetare-dezvoltare

a. Departamentul de Spectrometrie de Masă, Cromatografie și Fizică Aplicată

Identificări și cuantificări de compuși organici prin Spectrometrie de masă de înaltă rezoluție și sistem cuplat de tip GC-MS și HPLC-MS

Măsurători cantitative de gaze și compuși ușori prin Cromatografie Gazoasă

Laboratorul de analize fizico chimice din apă (apă reziduală, industrială, de suprafață și potabilă) prin spectrofotometrie

Analize de metale grele prin spectrometrie de masă ICP-MS

Analize izotopice prin Spectrometrie de Masă (rapoarte $^{13}\text{C}/^{12}\text{C}$ și $^{18}\text{O}/^{16}\text{O}$)

Nanotuburi de carbon

Materiale și dispozitive pentru stocare gaze (H_2 , CH_4 , CO_2)

Surse neconvenționale de energie

b. Departamentul de Fizica Sistemelor Nanostructurate

Laborator de preparare a materialelor hibride

Laborator de preparare materiale anorganice

Laborator de analize fizico-chimice

Laborator de preparare și caracterizare spectroscopică (FTIR, spectroscopie de fluorescență) a materialelor multifuncționale compozite

Laborator de rezonanță electronică paramagnetică

Laborator de spectroscopie de fotoelectroni (XPS)

Laborator de analiză cristalografică prin difracție de raze X

Laborator de caracterizare magnetică a materialelor

Laborator de microscopie și spectroscopie de scanare

c. Departamentul de Fizică Moleculară și Biomoleculară

Laborator destinat nanofabricației și caracterizării structurilor supramoleculare

Laborator de microscopie de scanare (STM și AFM)

Laborator de procesare și caracterizare a sistemelor moleculare cu pulsuri laser ultrascurte (femtosecunde)

Laborator de modelare moleculară și simulări numerice

Laborator destinat sintezelor și analizelor chimice și biochimice:

sinteze moleculare

analize fizico-chimice

biochimie

Laborator de spectroscopie RMN

Laborator de difractometrie de raze X

Laborator de spectroscopie vibrațională

Laborator de spectroscopie și calorimetrie fototermică

Laborator destinat aplicațiilor - tehnici de microunde

d. Departamentul de Fizică și Tehnologia Izotopilor

Cataliză eterogenă

Sinteze compuși organici marcați izotopic

Nanostructuri aplicate în electrochimie

Analiză heterogenă și compuși marcați cu deuteriu

Proiectare instalații de separare izotopică

Gaze pure și amestecuri etalon

Experimente separări izotopice

Analize fizico chimice

Conversie compuși anorganici marcați izotopic

6.2. Laboratoare de încercări acreditate/neacreditate

Laborator de Spectrometrie de Masă, Cromatografie și Fizica Ionilor și Laborator de Spectroscopie RMN, **acreditat conform SR EN ISO/CEI 17025/2005**

Certificat Acreditare Nr. LI 823/19.10.2009 emis de Asociația de Acreditare din România – RENAR (recunoscută ca Organism de Acreditare prin OMIR 354/12.06.2003)

a. METODE PRIN GC:

1. Determinare vapori de hidrocarburi aromatice (benzen, toluen, O-xilen, M-xilen, P-xilen, etilbenzen, n-butyl benzen) din aer;
2. Identificare hidrocarburi aromatice policiclice din aer
3. Determinare continut de paration, metil-paration, etil-paration din ape (de suprafață, uzată, subterană);
- 4-5. Determinarea unor insecticide organoclorurate (aldrin, α -BHC, β -BHC, lindan, δ -BHC, 4,4'-DDD, DDE, 4,4'-DDT, dieldrin, α -endosulfan, β -endosulfan, endosulfan sulfate, endrin, endrin aldehydă, heptaclor, heptaclor-exo-epoxide, methoxycloer) din ape (de suprafață, uzată, subterană) și sol;
6. Determinare erbicide fenoxialcanoice (2,4,5-trichlorophenoxyacetic acid) din ape (de suprafață, uzată, subterană);
7. Determinare compuși organici halogenați adsorbabili (hexachlorobenzen, diuron) din ape (de suprafață, uzată, subterană);
8. Determinare ftalați (bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, di-n-butylphthalate, diethyl phthalate, di-n-octyl phthalate) din ape (de suprafață, uzată, subterană);
9. Determinarea indicelui de hidrocarburi din ape (de suprafață, uzată, subterană);
10. Determinarea conținutului de hidrocarburi C_1 - C_{40} din sol

b. METODE PRIN ICP-MS:

11. Determinări de metale grele prin spectrometrie de masă cu plasmă cuplată inductiv (Al, Ba, Cd, Cr, Cu, Ni, Mn, Pb, Zn) din ape (de suprafață, uzată, subterană);

c. METODE PRIN SPECTROMETRIE DE MASA

12. Determinarea rapoartelor izotopice ($^{18}O/^{16}O$, $^{13}C/^{12}C$) din vin

d. METODE PRIN SPECTROMETRIE RMN

13. Determinarea rapoartelor izotopice D/H din vin

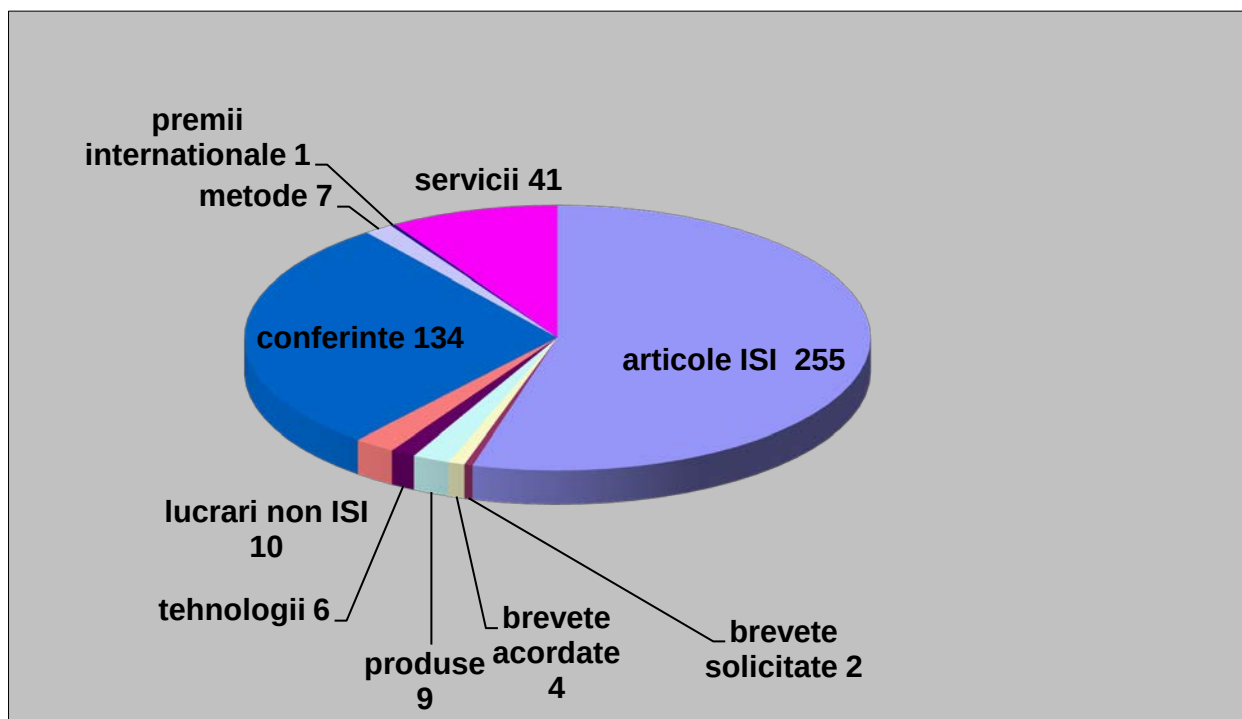
6.3. Instalații și obiective speciale de interes național**6.4. Măsurile de creștere a capacității de cercetare-dezvoltare corelat cu asigurarea unui grad de utilizare optim**

Gradul de utilizare al unor echipamente de cercetare a crescut de la 60% la 100%. Un număr considerabil de cercetători au urmat cursuri de perfecționare pentru utilizarea optimă și eficientă a aparaturii.

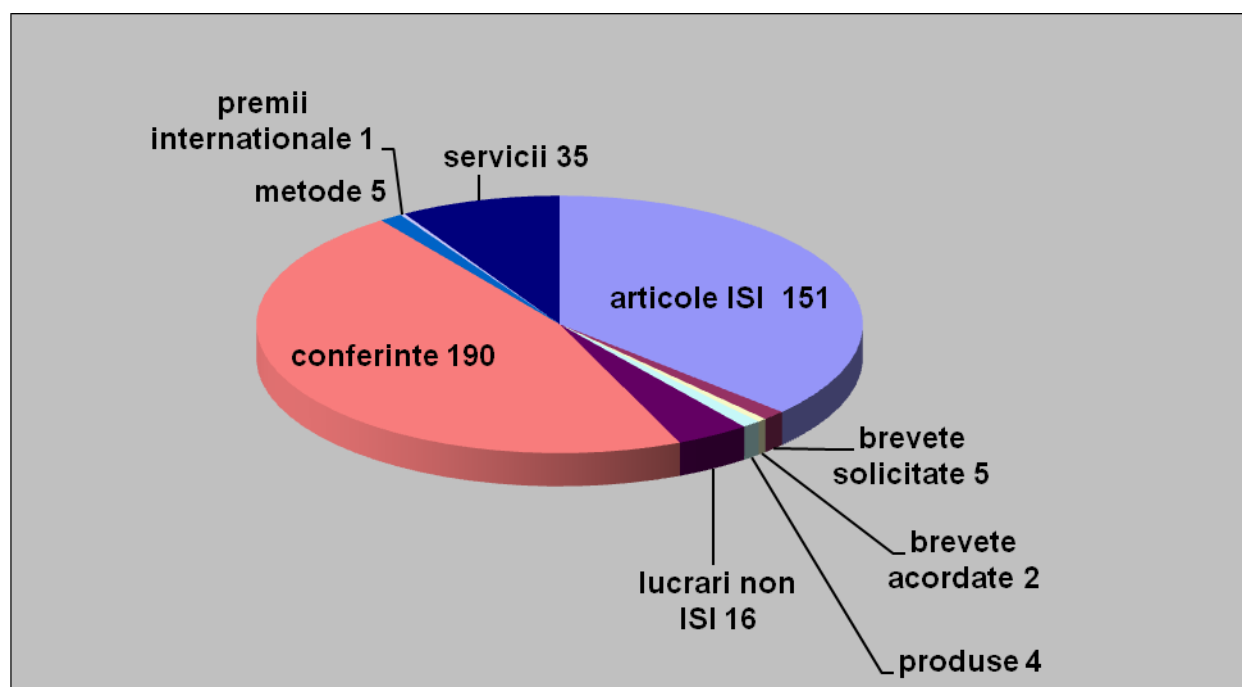
7. Rezultatele activității de cercetare-dezvoltare**7.1. Structura rezultatelor de cercetare realizate (conform tabel)**

		Nr.
7.1.1	Lucrări științifice/tehnice în reviste de specialitate cotate ISI	255
7.1.2	Factor de impact cumulat al lucrărilor cotate ISI	1767
7.1.3	Citări în reviste de specialitate cotate ISI	793
7.1.4	Brevete de invenție (solicitate/acordate)	2/4
7.1.5	Citări în sistemul ISI ale cercetărilor brevetate	-
7.1.6	Produse/servicii/tehnologii rezultate din activități de cercetare, bazate pe brevete, omologări sau inovații proprii	9/41/6
7.1.7	Lucrări științifice/tehnice în reviste de specialitate fără cotație ISI	10
7.1.8	Comunicări științifice prezentate la conferințe internaționale	134
7.1.9	Studii prospective și tehnologice, normative, proceduri, metodologii și planuri tehnice, noi sau perfecționate, comandate sau utilizate de beneficiar	-
7.1.10	Drepturi de autor protejate ORDA sau în sisteme similare legale	10

Distribuția rezultatelor CDI pe anul 2012



Distribuția rezultatelor CDI pe anul 2011



7.2. Rezultate de cercetare-dezvoltare valorificate și efectele obținute**7.3. Oportunități de valorificare a rezultatelor de cercetare****7.4. Măsurile privind creșterea gradului de valorificare socio-economică a rezultatelor cercetării****8. Măsurile de creștere a prestigiului și vizibilității INCDTIM****8.1. Prezentarea activității de colaborare prin parteneriate**

Dezvoltarea de parteneriate la nivel național și internațional: 11 parteneriate la nivel național și 8 internaționale

Participarea în comisii de evaluare concursuri naționale și internaționale

Dr. Rodica Turcu – evaluator proiecte europene “National Science Foundation” – Cehia și Polonia

Membri în colectivele de redacție recunoscute ISI (sau incluse în baze internaționale de date) și în colective editoriale internaționale și/sau naționale – 4 cercetători din INCDTIM

Turcu Rodica - Membru în colectivul de redacție al revistei ISRN Nanomaterials, Hindawi Publishing Corporation

Pruneanu Stela - Membru în Editorial Board al ISRN Nanomaterials, Hindawi Publishing Corporation

Munteanu Cristina - Membru în colectivul de redacție al revistei Biomedical Spectroscopy and Imaging

Surducan Vasile - Membru al colectivului de editori al revistei: International Journal of Engineering and Technology, Germania

8.2. Prezentarea rezultatelor la târgurile și expozițiile internaționale

Târguri și expoziții internaționale – participarea la **Salonul Internațional al Cercetării, Inovării și Inventicii “Pro Invent” de la Cluj-Napoca**, cu un număr de 6 lucrări.

8.3. Premii obținute prin proces de selecție/distincții

Salonul Internațional de Inventica Proinvent, ediția a-X-a, 2012

Diploma de excelență și medalia de argint

autori: Dr. ing V. Surducan, Dr. ing E. Surducan, Dr. fiz C. Neamțu

8.4. Prezentarea activității de mediatizare

Octombrie Web Releases / Știință Cercetare

9. Sursele de informare și documentare din patrimoniul științific și tehnic al INCDTIM

Baze de date cu reviste și resurse electronice de documentare științifice

ScienceDirect, SpringerLink, American Institute of Physics

Thomson ISI – Web of Science Thomson – Derwent Innovation Index

Materiale existente în bibliotecă

Numărul total de titluri de cărți și reviste existente în bibliotecă: cărți 11.049 titluri, reviste 21.163 titluri.

10. Concluzii

În concluzie, activitatea INCDTIM în anul 2012 a fost îndreptată spre îndeplinirea obiectivelor de cercetare-dezvoltare inovare. S-a reușit:

- Susținerea programelor de cercetare dezvoltare inovare
- Promovarea unor proiecte noi în competițiile anului 2012
- Susținerea și dezvoltarea activităților cu potențial economic
- Consolidarea patrimonială a INCDTIM
- Creșterea vizibilității INCDTIM pe plan național și internațional pentru consolidarea poziției pe piața cercetării

11. Perspective/priorități pentru perioada următoare de raportare

- Pregătirea pentru propunerea de noi proiecte în competițiile anului 2013.
- Dezvoltarea activităților cu potențial economic.
- Angajarea unor cercetători de prestigiu în colectivul INCDTIM.

Anexa 1.

Raport al Consiliului de Administrație al INCDTIM pentru anul 2012

Discutarea și aprobarea Bugetului de venituri și cheltuieli al institutului

Discutarea și aprobarea Planului de investiții

Aprobarea organizării concursului pentru ocuparea posturilor de cercetător științific, frezor, sudor, instalator și electrician, câte un post

Aprobarea planului de cercetare științifică pentru anul 2012 propus de către Consiliul Științific

Prezentarea Raportului final de evaluare al INCDTIM prin care institutul a fost apreciat cu media 4,6 urmând a fi certificat în categoria A+

Evaluarea rezultatelor și perspectivele celor două proiecte din fonduri structurale

Aprobarea implementării Standardului de Control Intern Managerial, cf Ordinului 946/2009

Aprobarea desfășurării Concursului de promovare

Organizarea festivității de încheiere a proiectului Capacități MDFMOL BIO

Analiza efectuată de Management conform ISO 9001/2012

Anexa 2. Lista contractelor

Nr crt	Program	Nr contract	Denumire proiect	valoare
Venituri realizate prin contracte de cercetare-dezvoltare nationale finantate de la bugetul de stat				30,428,418
1	CAPACITATI	CTR 8/2012	Contributia nationala la dezvoltarea gridului de calcul LCG pentru fizica particulelor elementare	168,014
		CTR 7/2012	Experimentul atlas de la lhc	417,781
		2PM/I/07.10.2008	Modernizarea Departamentului de Fizica Moleculara si Biomoleculara	11,434,911
		CB 1-RO-FR/2012	Experimente de convecție cu încălzire internă, non-contact, generată cu microunde, pentru studii de dinamică a mantalei Pământului	560,000
		CB 543/2012	Determinarea originii geografice a vinului aplicand metode avansate: comparatie între vinurile din Austria si cele din Romania	838
		64 EU/03.12.2009	FACET - Flavors, Additives and Food Contact Materials	18,807
		90EU/30.07.2010	ATLAS - Development of Laser-Based Technologies and Prototype Instruments for Genome-Wide Chromatin ImmunoPrecipitation Analyses	6,400
		CTR 83EU/2010	Producere de nanoparticule magnetice avansate in procese si produse inteligente pentru viata (Advanced Magnetic nano-particles deliver smart Processes and Products for Life	88,364
		CTR 169EU/2012	Combustibili avansati pentru reactori de generatia IV: reprocesare, dizolvare”, ASGARD	76,183
	NUCLEU	44N/2009	Procese Izotopice si Moleculare	9,045,420
	IDEI COMPLEXE	CTR 106/2010	Efectele dopajului si ale dimensionalitatii asupra proprietatilor magnetice, structurale si morfologice si dinamicii de spin in micro si nanostructuri oxidice feromagnetice	350,000
		CTR 76/2010	Stiinta suprafetelor si interfetelor: fizica, chimie, biologie, aplicatii	305,650
		CTR 1/2012	Detectia si separarea ionica prin intermediul peptidelor ciclice, al ciclodextrinelor si al porilor proteici	1,020,000
	RESURSE UMANE	TE 120/2010	Autentificarea si trasabilitatea sucurilor de fructe cu ajutorul metodelor izotopice	244,444
		TE 75/2011	Dinamica starilor moleculare excitate prin interactie cu pulsuri de radiatie corelata	306,621
		TE 87/2011	Modelarea First Principles a oxizilor bazati pe SRTI03 pentru aplicatii Termoelectrice	260,700
		TE 100/2011	Noi Nanoparticule magnetice si aplicatiile acestora in organocataliza	229,950
		TE 76/2011	Efectul campurilor de microunde aasupra uleiurilor esentiale si a metabolitilor secundari ai unor plante indigene	255,000

IDEI PARTENERIATE	RU 173/2010	Sinteza si caracterizarea unor l-amino acizi marcati cu 15n in scopul determinarii structurii nanoparticulelor de aur functionalizate cu amino acizi	62,700
	RU 107/2010	Aplicarea 2h rmn pentru autentificarea vinurilor si sucurilor naturale. Implementarea legislatiei europene eec 2676/90	72,223
	PD 14/2011	Obtinerea de pulsuri de attosecunde prin generare de armonice superioare cu pulsuri laser IR asistate de radiatie THz	32,400
	PD 53/2011	Abordari moderne pentru screening-ul de noi forme solide ale unor compusi farmaceutic activi si caracterizarea lor structurala pe pulberi	152,328
	PD 54/2011	Nanoparticule compozite cu structura core-shell pe baza de magnetita si semiconductori cu proprietati predeterminate	145,036
	CTR 7/2011	Calorimetrie fotopiroelectrica de inalta acuratete pentru nanofluidice magnetice	510,000
	CTR 11/2011	Probleme si provocari pentru stocarea hidrogenului in compozite cu structuri metal-organice	587,441
	CTR 10/2011	Electrozi pe baza de graphene-nanoparticulemetice pentru detectia poluantilor farmaceutici	600,410
	CTR 9/2011	Sinteza de grapheme de inalta puritate prin metoda CCVD-IH pe catalizatori de metale nobile prin studiul oxidarii AND-ului	536,617
	CTR 119/2011	Nanoparticule composite core-shell bazate pe Fe si PT avand proprietati magnetice, dispersive si functionale	551,966
	CTR 8/2011	Interactiuni intermoleculare de tip bioligand-macromolecula, investigate prin tehnici spectroscopice si calorimetrice	492,225
	CTR 147/2012	Produse dermatologice pe baza de biomateriale hibride obtinute din antociani si nanoparticule metalice	497,479
	CTR 43/2012	Producerea de hidrogen din compusi hidroxicili rezultati ca deseu la prelucrarea biomasei	730,000
	CTR 171/2012	Dezvoltarea unor noi implanturi si composite inteligente bazate pe nanotehnologie avansata cu multiple aplicatii medicale	70,000
	CTR 155/2012	Cascada de separare criogenica pentru 13C	210,000
	CTR 152/2012	Celule de evaporare pentru epitaxia in fascicul molecular de temperature ridicata, inertie termica scazuta si cost redus	70,000
	CTR 189/2012	Noi biomateriale avansate, inteligente de tip giomer cu diverse aplicatii in stomatologie	30,000

		CTR 98/2012	Tehnica imunochimica de analiza in faza omogena bazata pe nanoparticule functionalizate. Aplicatie pentru detectia contaminantului pesticidic acid 2,4-diclofenoxiacetic din probe alimentare si de mediu	0
		CTR 123/2012	Generarea si investigarea unor noi peptide antimicrobiene, cu dimensiune redusa. Corelarea structurii peptidelor cu functia lor	100,000
		CTR 212/2012	Scoala Deschisa pentru Autoperfectionare. Cercetare, Scriere Academica, si Managementul Carierei	0
		CTR 169/2012	Disc optic de 1 PB (Petabyte)	98,510
		CTR 1/2012	Ultrafast laser Facility with Optimized high order harmonics UltraViolet sources	90,000
Venituri realizate prin contracte de cercetare-dezvoltare internaționale finanțate din fonduri publice				3,467,208
2	FP7	295825/2012	Combustibili avansati pentru reactori de generatia IV: reprocesare, dizolvare”, ASGARD	152,368
		FACET	FACET - Flavors, Additives and Food Contact Materials	44,268
		ATLAS	ATLAS - Development of Laser-Based Technologies and Prototype Instruments for Genome-Wide Chromatin ImmunoPrecipitation Analyses	79,467
		229335/2010	Producere de nanoparticule magnetice avansate in procese si produse inteligente pentru viata (Advanced Magnetic nano-particles deliver smart Processes and Products for Life	84,964
	DUBNA	63/05-6-1048-2003-2013	Optimization investigation of the GRID facilities at LIT-JINR and INCDTIM-Cluj	10,119
		41/04-4-1069-2009/2014	Development of the biological laboratory for multifunction use at the beginning of the experiments at IBR-2M reactor	1,686
		26/04-4-1069-2009/2014	Metal supported catalyst structure investigation using neutron scattering techniques	3,373
	POS CCE	234/16.08.2010	Metodologii moderne de tip high-throughput pentru obtinerea si caracterizarea de noi forme solide ale compusilor farmaceutici	1,588,830
		235/16.08.2010	Metode avansate de sinteza a materialelor hibride	1,502,133
3	TOTAL			33,895,626

Anexa 3. Lista lucrărilor publicate în reviste cotate ISI

- 1 Supported nickel catalysts for low temperature steam reforming: comparison between metal additives and support modification, *Reac Kinet Mech Cat*, 105, 173-193, 2012, Monica Dan, Maria Mihet, Al.R. Biris, P. Marginean, V. Almasan, G-he Borodi, F. Watanabe, Al. S. Biris, M. Lazar
- 2 Measurement of the isolated di-photon cross-section in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector, *Physical Review D*, Volume 85, Issue , 012003 (2012), Gabriel Popeneciu, The Atlas Collaboration
- 3 One-step ligand exchange reaction as an efficient way for functionalization of magnetic nanoparticles, *Journal Nanopart Res*, 2012, 14:985,
- 4 Measurement of the top quark pair production cross section in pp collisions at $\sqrt{s} = 7$ TeV in dilepton final states with ATLAS, *Physics Letters B Volume 707* (2012), issue 5, pages 459-477, Gabriel Popeneciu, The Atlas Collaboration
- 5 Measurement of the W to tau nu Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV with the ATLAS experiment, *Physics Letters B Volume 706* (2012), issue 4-5, pages 276-294, Gabriel Popeneciu, The Atlas Collaboration
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- 7 Performance of Missing Transverse Momentum Reconstruction in Proton-Proton Collisions at 7 TeV with ATLAS, *European Physical Journal C*, (2012) Volume 72, Number 1, 1844, Gabriel Popeneciu, The Atlas Collaboration
- 8 Measurement of the pseudorapidity and transverse momentum dependence of the elliptic flow of charged particles in lead-lead collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the ATLAS detector, *Physics Letters B Volume 707* (2012), issue 3-4, pages 330-348, Gabriel Popeneciu, The Atlas Collaboration
- 9 Measurements of the electron and muon inclusive cross-sections in proton-proton collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector, *Physics Letters B Volume 707* (2012), issue 5, pages 438-458, Gabriel Popeneciu, The Atlas Collaboration
- 10 Measurement of the cross-section for b-jets produced in association with a Z boson at $\sqrt{s}=7$ TeV with the ATLAS detector, *Physics Letters B Volume 706* (2012), issue 4-5, pages 295-313, Gabriel Popeneciu, The Atlas Collaboration
- 11 Measurement of the cross section for the production of a W boson in association with b-jets in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector, *Physics Letters B Volume 707* (2012), issue 5, pages 418-437, Gabriel Popeneciu, The Atlas Collaboration
- 12 Search for displaced vertices arising from decays of new heavy particles in 7 TeV pp collisions at ATLAS, *Physics Letters B Volume 707* (2012), issue 5, pages 478-496, Gabriel Popeneciu, The Atlas Collaboration
- 13 Search for New Phenomena in $t\bar{t}$ Events with Large Missing Transverse Momentum in Proton-Proton Collisions at $\sqrt{s}=7$ TeV with the ATLAS Detector, *Physical Review Letters*, Volume 108, Issue 4, 041805 (2012), Gabriel Popeneciu, The Atlas Collaboration
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- 15 Measurement of the ZZ Production Cross Section and Limits on Anomalous Neutral Triple Gauge Couplings in Proton-Proton Collisions at $\sqrt{s}=7$ TeV with the ATLAS Detector, *Physical Review Letters*, Volume 108, Issue 4, 041804 (2012), Gabriel Popeneciu, The Atlas Collaboration
- 16 A measurement of the material in the ATLAS inner detector using secondary hadronic interactions, *JINST(Journal of Instrumentation) Volume 7* (2012) P01013, Gabriel Popeneciu, The Atlas Collaboration
- 17 Ks0 and Λ production in pp interactions at $\sqrt{s} = 0.9$ and 7 TeV measured with the ATLAS detector at the LHC, *Physical Review D*, Volume 85, Issue 1, 012001 (2012), Gabriel Popeneciu, The Atlas Collaboration
- 18 Adsorption of zwitterionic assemblies on Si(111)-7 x 7: A joint tunneling spectroscopy and ab initio study, *Physical Review B* 85, 035425(1-5), 2012, M. El Garah, F. Palmino, F. Cherioux, S. Melinte, B. Hackens, M. S. Rodrigues, D. Bogdan, E. Duverger
- 19 Structure functions and multifractal detrended fluctuation analysis applies to the coding sequences: case study-escherichia coli, *U.P.B. Sci. Bull., Series A*, 74 (1), 109-114, C. Stan, T. Minea, T. Cristescu, L. Buimaga-larinca, C. Cristescu

- 20 The influence of PEG/PPG and of the annealing temperature on TiO₂-based layers properties, *Revue Roumaine de Chimie*, 57(1), 15-21, 2012, M. Rosu, R. Suci, S. Dreve, D. Silipas, I. Bratu, E. Indrea
- 21 Magnetite-poly(lactic acid) core-shell nanoparticles by ring-opening polymerization under microwave irradiation, *Journal of Polymer Science Part A: Polymer Chemistry*, 50, 1485-1490, 2012, Nan Alexandrina, Turcu Rodica, Liebscher Jurgen
- 22 ¹H double quantum NMR at ultra fast MAS: analytical and numerical investigations, *Romanian Reports in Physics*, 64, 1, 127-134, 2012, C. Tripon, X. Filip, M. Aluas, C. Filip
- 23 Synthesis of few-layer graphene over gold nanoclusters supported on MgO, *Carbon*, 50(6), 2252-2263, 2012, Al.R. Biris, S. Ardelean, M. Lazar, E. Dervishi, F. Watanabe, A. Ghosh, A. Biswas, Al. S. Biris
- 24 Raman spectroscopy as a detection and analysis tool for in vitro specific targeting of pancreatic cancer cells by EGF-conjugated, single-walled carbon nanotubes, *Journal of Applied Toxicology*, 32(5), 365-375, 2012, A. Karmakar, C. Iancu, D. Bartos, M. Mahmood, A. Ghosh, Y. Xu, E. Dervishi, S. Collom, M. Khodakovskaya, T. Mustafa, F. Watanabe, Al. R. Biris, Y. Zhang, S. Ali, D. Casciano, S. Hassen, Z. Nima, Al. S. Biris
- 25 New versatile polydopamine coated functionalized magnetic nanoparticles, *Materials Chemistry and Physics xxx*, 2012, 1-8, Radoslaw Mrowczynski, Rodica Turcu, Cristian Leostean, Holger Scheidt, Jurgen Liebscher
- 26 Effect of Fe Concentration in ZnO Powders on Ferromagnetic Resonance Spectra, *Applied Magnetic Resonance*, vol 40, 245-250, 2012, O. Raita, A. Popa, M. Stan, R. Suci, A. Biris, L. Giurgiu
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- 34 Possible role of Cl⁻ ions in DNA protein interactions in the nucleosomes, *Chemical Physics Letters*, 525-526, 115-119, 2012, Attila Bende, Ferenc Bogar, Janos Ladik
- 35 A measurement of the ratio of the W and Z cross sections with exactly one associated jet in pp collisions at $\sqrt{s} = 7$ TeV with ATLAS, *Physics Letters B Volume 708* (2012), issue 3-5, pages 221-240, Gabriel Popeneciu, The Atlas Collaboration
- 36 Measurement of the transverse momentum distribution of W bosons in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector, *Physical Review D, Volume 85, Issue , 012005* (2012), Gabriel Popeneciu, The Atlas Collaboration
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- 41 Nanostructures Based On Metallic Nanoparticles And Biomolecules, *AIP Conference Proceedings 1425, 144-147*, Stela Pruneanu, Liliana Olenic, Florina Pogacean, Lucian Barbu Tudoran, Valentin Canpean, Adriana Vulcu, Camelia Grosan And A.S. Biris
 - 42 Investigation Of Heat And Mass Transfer Process In Metal Hydride Hydrogen Storage Reactors, Suitable For A Solar Powered Water Pump System, *AIP Conference Proceedings 1425, 61-64*, I. Coldea, G. Popeneciu, D. Lupu, I. Misan, G. Blanita, O. Ardelean
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 - 44 The Use Of Stable Isotopes In Quantitative Determinations Of Exogenous Water And Added Ethanol In Wines, *AIP Conference Proceedings 1425, 175-177*, D.A. Magdas, Z. Moldovan, G. Cristea
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 - 46 H₂-SCR At Low Temperatures On Noble Metal Supported Catalysts, *AIP Conference Proceedings 1425, 73-76*, Maria Mihet, Mihaela Diana Lazar, V Almasan, And V Mirel
 - 47 Hydrogen Production By Ethanol Steam Reforming On Ni/oxide Catalysts, *AIP Conference Proceedings 1425, 131-134*, Mihaela D. Lazar, Monica Dan, Maria Mihet, George Borodi And Valer Almasan
 - 48 The Study Of The Local Sources Of CO₂ Using Stable Isotopes, *AIP Conference Proceedings 1425, 165-167*, Gabriela Cristea, Dana A. Magdas, Stela Cuna, Edina Dordai And V. Mirel
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 - 51 Spectroscopic Investigation Of Hemoglobin Adsorbed Onto Gold Nanoparticles, *AIP Conference Proceedings 1425, 124-126*, Sorina Garabagiu And Gheorghe Mihailescu
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 - 54 Preparation And Characterization Of Ambazone Salt With Nicotinic Acid, *AIP Conference Proceedings 1425, 30-34*, I. Kacsó, M. Muresan-Pop, Gh. Borodi, I. Bratu
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- 224 Search for the Standard Model Higgs boson in association with a vector boson and decaying to a b-quark pair with the ATLAS detector, *Physics Letters B* Volume 718 (2012), Issue 2, pag 369-390, Gabriel Popeneciu, The Atlas Collaboration
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- 228 Search for Supersymmetry in Events with Large Missing Transverse Momentum, Jets, and at Least One Tau Lepton in 7 TeV Proton-Proton Collision Data with the ATLAS detector, *The European Physical Journal C*, 2012, vol 72, 2211, Gabriel Popeneciu, The Atlas Collaboration
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- 238 Search for a heavy top-quark partner in final states with two leptons with the ATLAS detector at the LHC, *Journal of High Energy Physics*, 11, 094, 2012, Gabriel Popeneciu, The Atlas Collaboration
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- 240 ATLAS search for a heavy gauge boson decaying to a charged lepton and a neutrino in pp collisions at $\sqrt{s}=7$ TeV, *The European Physical Journal C*, 2012, vol 72, 2241, Gabriel Popeneciu, The Atlas Collaboration
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- 243 A Massive Particle Consistent with the Standard Model Higgs Boson observed with the ATLAS Detector at the Large Hadron Collider, *SCIENCE*, Vol. 338, 6114, 1576-1582, Gabriel Popeneciu, The Atlas Collaboration
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- 254 Novel 1,3-thiazolidines. Synthesis of 2-aryl-4,4-bis(hydroxymethyl)-1,3-thiazolidines by direct thioaminalisation, *Studia UBB, Chemia*, 4, 2012, 145-156, C. Morar, C. Sacalis, P. Lameiras, I. Bratu, O. Moldovan, Y. Ramondenc, M. Darabantu
- 255 Physical-chemical and structural characterization of ambazone and its synthesis secondary product, *Studia UBB, Chemia*, 4, 2012, 135-144, H. Mocuta, Marieta Pop, I. Kacso, G-he Borodi, S. Simon, I. Bratu

Anexa 4. Lista brevetelor de invenție solicitate/acordate

- 1 Dispozitiv de reducere a pierderilor in rețelele de apa cu defectiuni aflate in imposibilitate momentana e remediere, Dispozitiv De Reducere A Pierderilor In Rețelele De Apa Cu Defectiuni Aflate In Imposibilitate Momentana E Remediere
 - 2 Dispozitiv pentru conectarea unui aparat fotografic la o incinta de tratament in camp de microunde de putere pentru preluarea in timp real a imaginilor probei procesate, Dispozitiv Pentru Conectarea Unui Aparat Fotografic La O Incinta De Tratament In Camp De Microunde De Putere Pentru Preluarea In Timp Real A Imaginilor Probei Procesate
-
- 1 Procedeu si instalatie pentru stimularea dezvoltarii plantelor in camp de microunde, Procedeu si Instalatie pentru stimularea dezvoltarii plantelor in camp de microunde
 - 2 Prepararea nanostructurilor magnetice pe baza de polipirol functionalizat la atomul de azot cu peptide, Prepararea Nanostructurilor Magnetice Pe Baza De Polipirol Functionalizat La Atomul De Azot Cu Peptide
 - 3 Procedeu de sinteza a structurilor metal-organice prin activare cu microunde, Procedeu De Sinteza A Structurilor Metal-Organice Prin Activare Cu Microunde
 - 4 Procedeu de micro/nano-structurare si autoasamblare simultana de chitosan si substante active antiinflamatoare, Procedeu De Micro/Nano-Structurare Si Autoasamblare Simultana De Chitosan Si Substante Active Antiinflamatoare

Anexa 5. Lista produselor, serviciilor și tehnologiilor rezultate din activități de cercetare

- 1 Instalatie experimentală pentru studii de dinamica a sistemelor lichide, neomogene(mantaua Pamantului) prin tratament in camp de microunde de putere, Surducan Emanoil, Surducan Vasile, Neamtu Camelia
- 2 Procedura pentru automatizarea prelucrării datelor experimentale de migrație, Hojbota Calin, Tosa Valer
- 3 Procedura pentru paralelizarea executiei calcului procesului de difuzie in sisteme multistrat, C/C++, Hojbota Calin, Tosa Valer
- 4 Nanoparticule de aur functionalizate cu leucina, Camelia Grosan , Vulcu Adriana
- 5 Compozit pe baza de nanoparticule de argint si extract natural din calin, Olenic Liliana, Vulcu Adriana, Dreve Simina, Kacso Irina
- 6 Compozit pe baza de nanoparticule de aur si extract natural din calin, Olenic Liliana, Vulcu Adriana, Dreve Simina, Kacso Irina
- 7 Ketoconazole adipat, forma cristalina noua a Ketoconazolului, Martin Flavia, Grosu Ioana, Miclaus Maria, Muresan Marieta, Kacso Irina, Filip Claudiu, Bratu Ioan, Borodi G-he, Pop Mihaela
- 8 Ketoconazole succinat, forma cristalina noua a Ketoconazolului, Martin Flavia, Grosu Ioana, Miclaus Maria, Muresan Marieta, Kacso Irina, Filip Claudiu, Bratu Ioan, Borodi G-he, Pop Mihaela
- 9 Ketoconazole oxalat, forma cristalina noua a Ketoconazolului, Martin Flavia, Grosu Ioana, Miclaus Maria, Muresan Marieta, Kacso Irina, Filip Xenia, Bratu Ioan, Borodi G-he, Pop Mihaela
- 1 Tehnologia de cocrystalizare prin activare mecanica si din solutie urmata de determinarea structurii cristaline, Pop Mihaela, Irina Kacso, Ioana Grosu, Flavia Martin, Maria Miclaus, Marieta Muresan, Borodi

- G-he, Filip Claudiu, Filip Xenia, Tripon Carmen
- 2 Tehnologie de cristalizare prin difuzie de vapori urmata de determinarea structurii cristaline, Borodi G-he, Pop Mihaela, Grosu Ioana, Martin Flavia, Miclaus Maria, Marieta Muresan, Irina Kacso
- 3 Tehnologie de micopilot pentru obtinerea de forme cristaline noi ale Ketoconazolului cu acizi dicarboxilici, Martin Flavia, Grosu Ioana, Miclaus Maria, Muresan Marieta, Kacso Irina, Filip Xenia, Filip Claudiu, Bratu Ioan, Borodi G-he, Pop Mihaela
- 4 Tehnologie de stimulare a dezvoltarii plantelor prin aplicarea unui camp electromagnetic de mica putere, Surducan Emanoil, Surducan Vasile
- 5 Tehnologie fotopiroelectrica selfconsistenta de masura a parametrilor termici statici si dinamici ai lichidelor, Dorin Dadarlat, Mircea Pop
- 6 Tehnologie de microunde pentru determinarea concentratiei unui constituent dintr-un amestec lichid, Surducan Emanoil, Surducan Vasile, Neamtu Camelia

Anexa 6. Lista lucrărilor științifice publicate în reviste fără cotație ISI

- 1 Implementation of an Additional Monitoring Device to Prevent Failures of the Cooling Systems, *IEEE AQTR 2012*, Trusca Radu, Albert Stefan, Farcas Felix, Soran Loredana, Mihail Abrudan
- 2 Comparative study between phosphate glass systems containing different ratios of cooper and vanadium oxides, *Studia UBB Physica*, 57(1), 2012, pp 35-40, A. Magdas, N. Vedeau, O. Cozar, I. Ardelean
- 3 Structural and EPR investigations of Mn-Doped ZnO fine ceramics, *Studia UBB Physica*, 57(1), 2012, pp 101-106, D. Toloman, A. Popa, O. Raita, M. Stan, A. Darabont, L. Giurgiu
- 4 Power consumption monitoring in ITIM Datacenter, *Romania Tier 2 Federation " Grid, Cloud & High Performance Computing Science" - RO-LCG 2012 Conference*, 25-27 Oct, Cluj-Napoca, Trusca Mihail, S. Albert, F. Farcas, L. Soran, M. Abrudean
- 5 The role of the internal rotation on the 5-benzyluracil excited states, *Romania Tier 2 Federation " Grid, Cloud & High Performance Computing Science" - RO-LCG 2012 Conference*, 25-27 Oct, Cluj-Napoca, Attila Bende, Valer Tosa
- 6 Modeling Impurity Migration in Multilayer Systems Using Parallelization, *Romania Tier 2 Federation " Grid, Cloud & High Performance Computing Science" - RO-LCG 2012 Conference*, 25-27 Oct, Cluj-Napoca, Tosa Valer, Hojbota Calin
- 7 The scalling of computational time as a function of number processors for Quantum Monte Carlo study of CO molecule, *Romania Tier 2 Federation " Grid, Cloud & High Performance Computing Science" - RO-LCG 2012 Conference*, 25-27 Oct, Cluj-Napoca, Luiza Buimaga, Adrian Calborean
- 8 ITIM activity in Grid and High Performance Computing, *Romania Tier 2 Federation " Grid, Cloud & High Performance Computing Science" - RO-LCG 2012 Conference*, 25-27 Oct, Cluj-Napoca, Felix Farcas, Radu Trusca, Stefan Albert, Loredana Soran, Gabriel Popeneciu
- 9 Research Project Evaluation, *Revista de Management si Inginerie Economica*, 11, 4, 2012, Mihaela Suarasan, Diana Nicoara, Andreea Maier
- 10 FEM analysis of billet and roll velocity evolution during the press-rolling process of spur gear or round ribber bars, *Metalurgia*, nr. 8, 2012, Ionut Marian, Dan Noveanu, Monica Sas, Ramona Suciu, Liviu Nistor

Anexa 7. Lista lucrărilor prezentate la conferințe internaționale

- 1 Frequency versus thickness scanning as self-consistent procedures in the photopyroelectric calorimetry, *41th Winter School on Wave and Quantum Acoustics*, Szczyrk, Poland, 27Feb-03 March, Dorin Dadarlat
- 2 2nm Quantum Optical Lithography, *SPIE Advanced Lithography*, 12-16 Feb, San Jose, California, USA, Eugen Pavel, S. Jinga, E. Andronescu, B. Vasile, G. Kada, A. Sasahara, N. Tosa, A. Matei, F. Jipa, M. Dinescu, A. Dinescu, O. Vasile
- 3 Laser Induced Photochemistry for Metallic nanoparticles and Micro/nanostructures Fabrication, *Winter College on Optics: Advances in Nano-Optics and Plasmonics*, 6-17 Feb 2012, Trieste, Italy, Tosa Nicoleta
- 4 Functionalization of magnetic nanoparticles by acrylates derivatives, *11th European Symposium on Polymer Blends in Donostia-San Sebastian*, Nan Alexandrina, Turcu Rodica, Izabell Craciunescu, Liebscher Jurgen
- 5 Modeling laser-induced dynamics in benzyluracil, *4th annual meeting of the COST Action CUSPFEL*,

- Bende Attila, Tosa Valer
- 6 Core-Shell nanoparticles with Targeted Magnetic Properties, *International Conference on Surfaces, Coating and Nanostructured Materials NANOSMAT-USA Tampa, Florida, 27-30 martie, 2012*, Ovidiu Pana
 - 7 Modeling laser-induced dynamics in benzyluracil, *Advanced Methods and Applications in Quantum Chemistry (AMAQC2012)*, 26-30 martie, Germany, Bende Attila, Tosa Valer
 - 8 Basic Aspects of the Photopyroelectric Method, *Second Mediterranean International Workshop on Photoacoustic and Photothermal Phenomena, Erice, Italia, 19-26 Aprilie, 2012*, Dorin Dadarlat
 - 9 Recent Development in the Photopyroelectric Calorimetry of Condensed Matter, *Second Mediterranean International Workshop on Photoacoustic and Photothermal Phenomena, Erice, Italia, 19-26 Aprilie, 2012*, Dorin Dadarlat
 - 10 Neonatal early exposure screening as a reflection of mothers habit applying GC-MS technique, *2nd International Conference on Analytical and Nonanalytical Methods for Biomedical and Environmental Science (IC-ANMBES)*, Kovacs Melinda, Voica Cezara, Ristoiu Dumitru, Moldovan Zaharie
 - 11 Ecotoxicological assessment of home grown foodstuffs with GC-qMS for inhabitants dietary exposure estimation, *30th Informal Meeting on Mass Spectrometry, 29 aprilie-3 mai, Olomouc-Cehia*, Kovacs Melinda, Moldovan Zaharia, Ristoiu Dumitru, Kovacs Eموke
 - 12 Multi-Shell Nanoparticles with Controlled Properties, *E-MRS 2012 Spring Meeting, Strasbourg, France, 14-18 mai, 2012*, O. Pana, M. Soran, C. Leostean, M. Stefan, S. Macavei, E. Gautron, O. Chauvet
 - 13 New pharmaceutical solid forms: a photothermal and structural approach, *2nd Mediterranean Workshop on Photoacoustics & Photothermal Phenomena, Erice, Italia*, Tripon Carmen, Irina Kacso, Marieta Muresan Pop, G-he Borodi, Ioan Bratu, Dorin Dadarlat
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- 133 Characterization of organic pollutants in River Water by GC/MS ion profiles, *19 th International Mass Spectrometry Conference, IMSC2012, Japan, sept 15-22, 2012*, Moldovan Zaharie, Olivian Marincas, Veronica Avram, Florina Tusa
- 134 Specific organic pollutants detected in Prut River Basin, *International Conference ELSEMIDA, oct, Cluj-Napoca*, Moldovan Zaharie, Marincas Olivian, Avram Veronica, Florina Tusa, Gabriela Schmutzer

Anexa 8. Nu e cazul

Anexa 9. Lista cărților (capitolelor de carte) publicate

- Aspects on Fundamentals and Applications of Conducting Polymers, capitol: Conducting polypyrrole shell as a promising covering for magnetic nanoparticles, Editor: Artur De Jesus Motheo, ISBN 979-953-307-696-5, pp.159-182
- Complecsi Moleculari de Incluziune, Ed. Grinda, Cluj-Napoca, ISBN: 978-973-126-341-0
- Applied Biological Engineering - Principles and Practice, capitol: Modern Methods Used in the Complex Analysis of the Phonocardiography Signal, ISBN: 978-953-51-0412-4
- Carte: Novel Approach and Their Application in Risk Assessment, capitol: Non-invasive matrices use in pollution evaluation at nanoscale levels - a way forward in ecotoxicological studies, ISSN: 978-953-51-0519-0, pp 168-184
- Carte: Structural and Optical Behavior of Vanadate-Tellurate Glasses Containing PbO or Sm₂O₃, ISBN: 978-953-51-0537-4, pp 63-76
- Carte: Foutier Transform - Materials Analysis, Capitol: Fourier Series and Fourier Transform with Applications in Nanomaterials Structure, ISSN: 987-953-51-0594-7
- Cartea: Recent Research Development in Material Science, Capitol: New hybrid materials with applications in microelectronics
- Carte: Risk Assessment and Management, Capitol: Surveys of living organisms exposure profile to " regional and non-regional" organic pollutants , ISBN: 978-0-9835850-0-8, pp 506-519
- Grid Computing - de la teorie la practica
- Carte: Medicina si Teologie, Capitol: Investigarea materialelor picturale la icoana pe sticla Iisus Pantocrator de la Manastirea Nicula, ISBN: 978-973-494-9, 467-475