

**Contractor: Institutul national de Cercetare-Dezvoltare pentru  
Tehnologii Izotopice si Moleculare Cluj-Napoca**

**C.U.I :13221445**

## **Raport final**

privind desfasurarea Programului Nucleu

“PROCESE IZOTOPICE SI MOLECULARE” –COD PN09-44

**perioada 2009-2015**

**1.Scopul programului: Dobandirea de noi cunostiinte, obtinerea de rezultate stiintifice noi, fundamentale si aplicative, care sa permita abordarea de aplicatii noi prin proiecte din cadrul Planului national sau in programe internationale.**

**2.Modul de derulare a programului:**

**2.1. Descrierea activitatilor**

In cadrul acestui Program Nucleu al *Institutului National de Cercetare-Dezvoltare pentru Tehnologii Izotopice si Moleculare (INCDTIM) Cluj-Napoca*, au fost desfasurate activitati de cercetare fundamentala si aplicativa in domeniul separarii izotopilor stabili, aplicatii ale izotopilor stabili, fizicii moleculare si a proceselor specifice sistemelor moleculare. Activitatile de cercetare au fost desfasurate pe urmatoarele teme:

**Obiectiv 1: Separari de izotopi, compusi marcati cu izotopi stabili; aplicatii cod obiectiv: PN09- 44 01**

1.PN09-44 01 01 Investigarea structurii electronice si a efectelor izotopice asupra cuplajului electron-fonon in ADN. Aplicatii in tehnologia de secventarea a ADN

2.PN09-44 01 02 Reactii de oxido-reducere catalizate, cu aplicatii in procese de depoluare

3.PN09-44.01 03 Cercetari privind elaborarea, validarea si implementarea de metode bazate pe spectrometria de masa cu plasma cuplata inductiv, pentru determinarea de urme in matrici omogene

4.PN09-44 01 04 Cercetari asupra materialelor avansate absorbante de hidrogen si aplicatii in stocarea si comprimarea hidrogenului

5.PN09-44 01 05 Cercetari privind separarea izotopilor prin schimb chimic si controlul automat al instalatiilor de separare prin metode numerice avansate

6.PN09-44 01 06 Trasori izotopici naturali utilizati in studiul proceselor si componentelor hidrosferei si biosferei.

7.PN09-44 01.07 Cercetari privind elaborarea de tehnologii pentru obtinerea de compusi marcati cu izotopi stabili:  $^{15}\text{N}$ ,  $^{13}\text{C}$

8.PN09-44 01 08 Metode de inalta sensibilitate pentru determinari de aditivi alimentari si identificari de surse de poluare in mediu

9.PN09-44 01 09 Elaborarea de metode izotopice noi in domeniu securitatii si calitatii alimentelor si bauturilor

10.PN09-44 01 10 Catalizatori nanostructurati activi in reactiile cu participarea hidrogenului: producere de hidrogen, schimb izotopic H/D

11. PN09-44 01 12 Cercetari privind separarea izotopilor carbonului prin schimb izotopic

12.PN09-44 01 13 Sisteme avansate de recuperare a energiei din vibrațiile parazite ale infrastructurii rutiere și feroviare

13.PN09-44 01 14 Metode avansate aplicate la caracterizarea alimentelor , produselor industriale si a calitatii mediului

11. PN09-44 01 15 Cercetări privind metodele de producere a izotopilor stabili și a electrozilor modificați cu grafene și nanoparticule metalice

15. PN09-44 01 16 Studiul poluantilor din atmosfera si biosfera in zona Transilvaniei

16.PN09-44 01 17 Determinarea hartii insolatiei in platoul Transilvan pentru eficientizarea surselor alternative de energie

17. PN09-44 01 18 Tehnologii pe baza de hidrogen - alternativa sustenabila surselor conventionale de energie

18.PN09-44 01 19 Noi metode de sinteza a unor materiale cu aplicatii in senzorii chimici/ electrochimici si in tehnologia izotopilor stabili.

**Obiectivul 2: Investigarea proceselor specifice sistemelor moleculare si supramoleculare**  
**cod obiectiv: PN09- 44 02**

1.PN09-44 02 01 Sisteme supramoleculare de incapsulare si cedare controlata de principii bioactive

2.PN09-44 02 02 Metode de investigare a sistemelor nanostructurate cu structura core-shell si a clusterilor metalici prin difractia si spectroscopia de absorbtie de raze X, XPS si spectroscopia de tunelare

3.PN09-44 01 03 Calorimetrie fotopiroelectrica de inalta rezolutie pentru studiul unor materiale compozite

4.PN09-44 02 04 Investigarea proceselor de recunoastere si autoorganizare moleculara

5.PN09-44 02.05 Caracterizarea structurala a unor compusi biologic activi

6.PN09-44 02 06 Determinarea structurii locale a sistemelor oxidice puternic dezordonate cu aplicatii in fotocataliza

7.PN09-44 02 07 Investigarea polimerilor conductori si a nanoparticulelor magnetice functionalizate prin spectroscopie de fotoelectroni si tehnici microscopice

8.PN09-44 02 08 Caracterizarea structurala si dinamica a compusilor intermoleculari de tip "ligant-receptor" prin tehnici spectroscopice (UV/VIS, fluorescenta, RMN) si calorimetrie (DSC si ITC)

9.PN09-44 02 09 Investigarea si procesarea unor sisteme moleculare si biomoleculare complexe in camp de microunde de mica putere

10.PN09-44 02 10 Studiul structurilor supramoleculare cu nanoparticule bio-functionalizate

11.PN09-44 02 11 Dinamica electronului in interactia pulsurilor laser ultracurte cu sisteme atomice si moleculare

12.PN09-44 02 12 Caracterizarea prin spectroscopie RES in multifrecventa (banda X si Q) a semiconductorilor magnetici diluati, micro si nanostructurati

13.PN09-44 02 13 Metabolsim si interactiuni intermoleculare in celula rosie umana caracterizate prin microcalorimetrie

14.PN09-44 02 14 Tehnici moderne de fabricare si caracterizare nedistructiva a sistemelor moleculare si biomoleculare cu aplicatii in imbunatatirea calitatii vietii si protectia mediului

15.PN09-44 02 15 Aplicatii ale sistemelor nanostructurate in depoluare, cataliza si stocare de informatie de ultra inalta densitate

16.PN09-44 02 16 Evaluarea biochimica si biofizica a unor proteine cu rol cheie in metabolismul oxidativ

17.PN09-44 02 17 Nanoparticule magnetice pe baza de pamanturi rare cuplate prin schimb

18.PN09-44 02 18 Investigarea interactiunilor intermoleculare in sisteme de interes biologic cu aplicatii in biologie, medicina, farmacie si imbunatatirea calitatii vietii

19.PN09-44 02 19 Sisteme nanostructurate compozite: preparare, caracterizate si aplicati

(Activitatile desfasurate pe fiecare proiect sunt descrise in rapoartele anuale)

## 2.2 Poiecte contractate:

Cod obiectiv	Nr. proiecte contractate	Nr. proiecte finalizate	Valoare (mii lei)	Nr. personal	
			Total	Total	Studii superioare
PN09-44 01	18	18	30911,608	61	45

PN03-39 02	19	19	36121,569	71	52
Total:	37	37	67033,177	132	97

### 2.3. Situatia centralizata a cheltuielilor privind programul nucleu:

#### 2009 Cheltuieli -lei

	Estimative	Efective
<b>I Cheltuieli directe</b>	<b>5143230</b>	<b>5144856</b>
<b>1. Cheltuieli de personal:</b>	<b>5121045</b>	<b>5121044</b>
<b>1.1 Cheltuieli din care:</b>	<b>5121045</b>	<b>5121044</b>
<b>cu salariile:</b>	<b>4004884</b>	<b>4004885</b>
<b>1.2 Alte cheltuieli de personal total</b>	<b>0</b>	<b>0</b>
<b>din care:</b>		
a) deplasări în țară;		
b) deplasări în străinătate;	<b>0</b>	<b>0</b>
<b>2 Cheltuieli materiale și servicii total,</b>	<b>22185</b>	<b>23812</b>
<b>din care:</b>		
<b>2.1 Materii prime și materiale;</b>	<b>22185</b>	<b>23812</b>
<b>2.2 Lucrări și servicii executate de terți;</b>	<b>0</b>	<b>0</b>
<b>II Cheltuieli indirecte: Regia</b>	<b>4334880</b>	<b>4333254</b>
<b>II Dotări independente și studii pentru obiective</b>		
<b>I de investiții proprii total</b>	<b>0</b>	<b>0</b>
<b>din care</b>		
<b>1. Echipamente pentru cercetare – dezvoltare;</b>	<b>0</b>	<b>0</b>
<b>2. Mobilier și aparatura birotică;</b>		
<b>3. Calculatoare electronice și echipamente periferice;</b>	<b>0</b>	<b>0</b>
<b><u>TOTAL (I+II+III)</u></b>	<b>9478110</b>	<b>9478110</b>

#### 2010 Cheltuieli -lei

	Estimative	Efective
<b>I Cheltuieli directe</b>	<b>4.184.060</b>	<b>4.184.995,03</b>
<b>1. Cheltuieli de personal:</b>	<b>4.160.390</b>	<b>4.160.390,00</b>
<b>1.1 Cheltuieli din care:</b>	<b>4.160.390</b>	<b>4.160.390,00</b>
<b>cu salariile:</b>	<b>3.253.609</b>	<b>3.253.609,00</b>
<b>1.2 Alte cheltuieli de personal total, din care:</b>	<b>0</b>	
a) deplasări în țară;		
b) deplasări în străinătate;	<b>0</b>	
<b>2 Cheltuieli materiale și servicii total,</b>	<b>23.670</b>	<b>24.605,03</b>
<b>din care:</b>		
<b>2.1 Materii prime și materiale;</b>	<b>23.670</b>	
<b>2.2 Lucrări și servicii executate de terți;</b>	<b>0</b>	
<b>II Cheltuieli indirecte: Regia</b>	<b>3.344.327</b>	<b>3.343.391,97</b>

<b>II</b>	<b>Dotări independente și studii pentru obiective</b>		
<b>I</b>	<b>de investiții proprii total</b>	<b>0</b>	<b>0</b>
	<b>din care</b>		
	<b>1. Echipamente pentru cercetare – dezvoltare;</b>	<b>0</b>	<b>0</b>
	<b>2. Mobilier și aparatura birotica;</b>		
	<b>3. Calculatoare electronice și echipamente periferice;</b>	<b>0</b>	<b>0</b>
	<b><u>TOTAL (I+II+III)</u></b>	<b>7.528.387</b>	<b>7.528.387,00</b>

**2011 cheltuieli -lei**

	Estimative	Efective	
<b>I</b>	<b>Cheltuieli directe</b>	<b>4.309.999</b>	<b>4.266.634,12</b>
	<b>1. Cheltuieli de personal:</b>	<b>4.247.910</b>	<b>4.195.497,00</b>
	<b>1.1 Cheltuieli din care:</b>	<b>4.247.910</b>	<b>4.195.497,00</b>
	<b>cu salariile:</b>	<b>3.322.054</b>	<b>3.281.065,00</b>
	<b>1.2 Alte cheltuieli de personal total</b>	<b>0</b>	
	<b>din care:</b>		
	<b>a) deplasări în țară;</b>		
	<b>b) deplasări în străinătate;</b>	<b>0</b>	
	<b>2 Cheltuieli materiale și servicii total,</b>	<b>62.089</b>	<b>71.137,12</b>
	<b>din care:</b>		
	<b>2.1 Materii prime și materiale;</b>	<b>62.089</b>	<b>71.137,12</b>
	<b>2.2 Lucrări și servicii executate de terți;</b>	<b>0</b>	
<b>II</b>	<b>Cheltuieli indirecte: Regia</b>	<b>3.835.421</b>	<b>3.810.104,38</b>
<b>III</b>	<b>Dotări independente și studii pentru obiective</b>		
	<b>de investiții proprii total</b>	<b>60.000</b>	<b>128.681,50</b>
	<b>din care</b>		
	<b>1. Echipamente pentru cercetare – dezvoltare;</b>	<b>0</b>	<b>7.466,31</b>
	<b>2. Mobilier și aparatura birotica;</b>		
	<b>3. Calculatoare electronice și echipamente perif.;</b>	<b>60.000</b>	<b>121.215,19</b>
	<b><u>TOTAL (I+II+III)</u></b>	<b>8.205.420</b>	<b>8.205.420,00</b>

**2012 Cheltuieli -lei**

	Estimative	Efective	
<b>I</b>	<b>Cheltuieli directe</b>	<b>4.380.966</b>	<b>4.375.446,42</b>
	<b>1. Cheltuieli de personal:</b>	<b>4.260.702</b>	<b>4.246.858,65</b>
	<b>1.1 Cheltuieli din care:</b>	<b>4.260.702</b>	<b>4.246.858,65</b>
	<b>cu salariile:</b>	<b>3.332.057</b>	<b>3.318.566,00</b>
	<b>1.2 Alte cheltuieli de personal total</b>		<b>25.206,96</b>
	<b>din care:</b>		
	<b>a) deplasări în țară;</b>		<b>16.631,82</b>
	<b>b) deplasări în străinătate;</b>	<b>0</b>	<b>8.577,14</b>
	<b>2 Cheltuieli materiale și servicii total,</b>	<b>120.264</b>	<b>106.783,46</b>
	<b>din care:</b>		
	<b>2.1 Materii prime și materiale;</b>	<b>120.264</b>	<b>105.783,46</b>
	<b>2.2 Lucrări și servicii executate de terți;</b>	<b>0</b>	<b>1.000,00</b>
<b>II</b>	<b>Cheltuieli indirecte: Regia</b>	<b>3.430.454</b>	<b>3.419.290,08</b>

<b>III</b>	<b>Dotări independente și studii pentru obiective de investiții proprii total</b>	<b>1.234.000</b>	<b>1.250.683,50</b>
	<b>din care</b>		
	1. Echipamente pentru cercetare – dezvoltare;	1.144.000	1.142.099,06
	2. Mobilier și aparatura birotică;		1.857,82
	3. Calculatoare electronice și echipamente perif.;	90.000	106.726,62
	<b>TOTAL (I+II+III)</b>	<b>9.045.420</b>	<b>9.045.420,00</b>

### 2013 Cheltuieli- lei

	Estimative	Efective	
<b>I</b>	<b>Cheltuieli directe</b>	<b>4.235.394</b>	<b>4225621,20</b>
	1. Cheltuieli de personal:	4.151.988	4145970,26
	1.1 Cheltuieli din care:	4.151.988	4143765,00
	cu salariile:	3.247.245	3240848,00
	1.2 Alte cheltuieli de personal total		2205,26
	<b>din care:</b>		
	a) deplasări în țară;		2205,26
	b) deplasări în străinătate;		
	2 Cheltuieli materiale și servicii total,	83.406	79650,94
	<b>din care:</b>		
	2.1 Materii prime și materiale;	83.406	79650,94
	2.2 Lucrări și servicii executate de terți;		
<b>II</b>	<b>Cheltuieli indirecte: Regia</b>	<b>4.840.195</b>	<b>4832973,49</b>
<b>III</b>	<b>Dotări independente și studii pentru obiective de investiții proprii total</b>	<b>63.018</b>	<b>80012,31</b>
	<b>din care</b>		
	1. Echipamente pentru cercetare – dezvoltare;	63.018	39832,52
	2. Mobilier și aparatura birotică;		
	3. Calculatoare electronice și echipamente perif.;		40179,76
	<b>TOTAL (I+II+III)</b>	<b>9.138.607</b>	<b>9.138.607,00</b>

### 2014 Cheltuieli -lei

	Estimative	Efective	
<b>I</b>	<b>Cheltuieli directe</b>	<b>5.344.165</b>	<b>5.323.479,92</b>
	1. Cheltuieli de personal:	4.413.493	4.413.481,35
	1.1 Cheltuieli din care:	4.409.293	4.409.280,00
	cu salariile:	3.187.576	3.492.115,00
	1.2 Alte cheltuieli de personal total	4.200	4.201,35
	<b>din care:</b>		
	a) deplasări în țară;	4.200	4.201,35
	b) deplasări în străinătate;		
	2 Cheltuieli materiale și servicii total,	930.672	909.998,57
	<b>din care:</b>		
	2.1 Materii prime și materiale;	300.672	279.998,57
	2.2 Lucrări și servicii executate de terți;	630.000	630.000,00
<b>II</b>	<b>Cheltuieli indirecte: Regia</b>	<b>5.129.448</b>	<b>5.118.872,23</b>

<b>III</b>	<b>Dotări independente și studii pentru obiective de investiții proprii total</b>	<b>1.045.000</b>	<b>1.076.260,85</b>
	<b>din care</b>		
	<b>1. Echipamente pentru cercetare – dezvoltare;</b>	<b>1.045.000</b>	<b>1.059.721,03</b>
	<b>2. Mobilier și aparatura birotică;</b>		
	<b>3. Calculatoare electronice și echipamente perif.</b>	<b>0</b>	<b>16.539,82</b>
	<b><u>TOTAL (I+II+III)</u></b>	<b>11.518.613</b>	<b>11.518.613,00</b>

**2015- cheltuieli- lei**

	Estimative	Efective
<b>I</b>	<b>5.765.911</b>	<b>5.743.370,56</b>
	<b>5.630.911</b>	<b>5.630.911,00</b>
	<b>5.630.911</b>	<b>5.630.911,00</b>
	<b>4.583.579</b>	<b>4.583.579,00</b>
	<b>135.000</b>	<b>112.236,56</b>
	<b>135.000</b>	<b>112.236,56</b>
	<b>6.301.209</b>	<b>6.218.864,59</b>
<b>II</b>		
<b>III</b>	<b>51.500</b>	<b>156.384,85</b>
	<b>45.000</b>	<b>117.139,18</b>
	<b>6.500</b>	<b>39.245,67</b>
	<b>12.118.620</b>	<b>12.118.620,00</b>

**Total 2009-2015 Cheltuieli lei**

	Estimative	Efective
<b>I</b>	<b>33.363.725</b>	<b>33.262.776,22</b>
	<b>31.986.439</b>	<b>31.936.179,57</b>
	<b>31.982.439</b>	<b>31.904.341,00</b>
	<b>24.931.004</b>	<b>25.174.605,00</b>
	<b>4.200</b>	<b>31.838,57</b>
	<b>4.200</b>	<b>23.261,43</b>
		<b>8.577,14</b>
	<b>1.377.286</b>	<b>1.326.596,65</b>
	<b>746.286</b>	<b>694.344,85</b>
	<b>631.000</b>	<b>632.251,80</b>

<b>II Cheltuieli indirecte: Regia</b>	<b>31.215.934</b>	<b>31.078.377,77</b>
<b>III Dotări independente și studii pentru obiective de investiții proprii total</b>	<b>2.453.518</b>	<b>2.692.023,01</b>
<b>din care</b>		
<b>1. Echipamente pentru cercetare – dezvoltare;</b>	<b>2.297.018</b>	<b>2.441.468,74</b>
<b>2. Mobilier și aparatura birotică;</b>		<b>1.857,82</b>
<b>3. Calculatoare electronice și echipamente periferice;</b>	<b>156.500</b>	<b>248.696,45</b>
<b><u>TOTAL (I+II+III)</u></b>	<b>67.033.177</b>	<b>67.033.177,00</b>

### 3. Analiza stadiului de atingere a obiectivelor perogramului:

Obiectivele programului au fost atinse în totalitate atât în ceea ce privește rezultatele obținute prezentate în cap.4 al raportului cât și în ceea ce privește abordarea de aplicații noi prin proiecte din cadrul Planului național sau în programe internaționale.

#### Rezultatele programului nucleu au fundamentat alte lucrări de cercetare:

	<b>Nr.</b>	<b>Tip</b>
<b>Proiecte internaționale</b>	<b>11</b>	<b>POSCCE – 5; DUBNA - 6</b>
<b>Proiecte naționale</b>	<b>77</b>	<b>Parteneriate – 35; Idei – 12; Idei complexe – 3; Resurse umane (PD, TE) – 13; Capacități – 13; Sectorial - 1</b>

Activitățile desfășurate în cadrul proiectelor cuprinse în Programul Nucleu al institutului au fost apreciate și prin premiile **Academiei Române** sau prin premiile și medaliile obținute la târguri naționale.

#### Premii ale Academiei Române

1. Tosa Valer -Premiul Constantin Miculescu al **Academiei Române** în domeniul științelor fizice- anul 2012
2. Cristina Muntean- Premiul Constantin Miculescu al **Academiei Române** în domeniul științelor fizice, pentru grupul de lucrări: Cercetări asupra structurii moleculei de ADN folosind metode de spectroscopie vibrațională- anul 2013

#### Premii, medalii la târguri naționale și internaționale:

1. Diploma și Medalia de Aur la a VIII - a ediție a Salonului Internațional de Inventică " PRO INVENT" - Cluj-Napoca pentru: *Instalație de separare a compusilor chimici prin*



*cromatografie in prezenta campului de microunde*, SURDUCAN EMANOIL, SURDUCAN VASILE, SORAN MARIA LOREDANA, LUNG ILDIKO

2.Diploma si Medalia de Aur la a VIII - a editie a Salonului International de Inventica " PRO INVENT" - Cluj-Napoca pentru: *Procedeu si instalatie pentru procesarea dinamica a substantei in camp de microunde de putere*, SURDUCAN EMANOIL, SURDUCAN VASILE

3.Diploma si Medalia de Aur la Salonul International de Inventii, Cercetare Stiintifica si Tehnologii Noi " INVENTIKA - 2010" 6-9 octombrie, Bucuresti, Romania, pentru: *"Metoda si traductor pentru masurarea temperaturii in procesarile efectuate in camp de microunde de putere"* SURDUCAN VASILE, SURDUCAN EMANOIL

4.Diploma si Medalia de Argint la Salonul International de Inventii, Cercetare Stiintifica si Tehnologii Noi " INVENTIKA - 2010" 6-9 octombrie, Bucuresti, Romania, pentru: *"Modul de comanda pentru actionarea generatoarelor de microunde in aparatura medicala si de laborator"* SURDUCAN VASILE, SURDUCAN EMANOIL, CAMELIA NEAMTU

5.Diploma si Medalia de Argint la Salonul International de Inventii, Cercetare Stiintifica si Tehnologii Noi " INVENTIKA - 2010" 6-9 octombrie, Bucuresti, Romania, pentru: *"Sistem de alimentare pentru releu electronic pilotat de microcontroler"* SURDUCAN VASILE, SURDUCAN EMANOIL

6.Diploma si Medalia de Argint la Salonul International de Inventii, Cercetare Stiintifica si Tehnologii Noi " INVENTIKA - 2010" 6-9 octombrie, Bucuresti, Romania, pentru: *"Driver universal pentru controlul motoarelor pas cu pas unipolare"* SURDUCAN VASILE, SURDUCAN EMANOIL

De asemenea amintim ca in cadrul activitatilor de cercetare cuprinse in proiectele programului nucleu a fost sprijinita activitatea de perfectionare a tinerilor cercetatori prin doctorat.

In cadrul INCDTIM Cluj-Napoca si-au desfasurat activitatea de cercetare un numar de 17 tineri doctoranzi cuprinsi in programul de perfectionare prin doctorate. Doctoranzii au fost implicati in activitati de cercetare axate pe tematici dezvoltate in cadrul proiectelor din Programul NUCLEU. Au fost de asemenea finalizate 9 teze de doctorat pe baza activitatilor desfasurate in cadrul programului NUCLEU

## 4. Prezentarea rezultatelor

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

Se va specifica **numarul** rezultatelor in functie de specificul acestora:

1. Produse:	<b>36</b>
2. Tehnologii, procese, instalatii pilot, prototipuri, standuri:	<b>13</b>
3. Servicii:	
4. Sisteme, structuri, mecanisme:	
5. tehnici ,metode,procedee, proceduri,experimentari, modele:	<b>53</b>
6. baze de date,software, web-site,sisteme informatice, servicii on-line:	
7. documentatii, standarde, normative, specificatii, protocoale, harti, glosare, indrumare ,catalogoage, etc.	<b>2</b>
8. Studii:	<b>164</b>
9. Metodologii:	

### 4.2 Valorificarea în producție a rezultatelor obținute:

Tip rezultat	Institutiile beneficiare (nume institutie)
<p><b>Tema:</b>Cercetari privind elaborarea de tehnologii pentru obtinerea de compusi marcati cu izotopi stabili: <math>^{15}\text{N}</math>, <math>^{13}\text{C}</math></p> <p><b>Tehnologii;</b> Tehnologie de obtinere a fenobarbitalului marcat cu <math>^{13}\text{N}</math> in 1,3. 2. Tehnologia de obtinere a metanolului marcat cu <math>^{13}\text{C}</math>. 3. Tehnologia de obtinere a cafeinei marcate cu <math>^{15}\text{N}</math> si/sau <math>^{13}\text{C}</math>.</p> <p><b>Produse;</b> Fenobarbitalul marcat cu <math>^{13}\text{N}</math> in 1,3. Metanolul marcat cu <math>^{13}\text{C}</math>. Cafeina marcate cu <math>^{15}\text{N}</math> si/sau <math>^{13}\text{C}</math>.</p>	<p>-laboratoarele care dețin aparatură RMN, pentru efectuarea diferitelor studii pe nucleul de <math>^{15}\text{N}</math>;</p> <p>-beneficiarii din străinătate care solicită astfel de compuși. Compușii marcați cu <math>^{15}\text{N}</math> si sau <math>^{13}\text{C}</math> se vor utiliza în studii biomedicale ;</p>
<p><b>Tema: Metode de inalta sensibilitate pentru determinari de aditivi alimentari si identificari de surse de poluare in mediu.</b></p> <p>Servicii: Determinari structurale si cantitative prin spectrometria de masa</p>	Unitati economice din tara sau cu profil alimentar si de protectia mediului
<p><b>Tema:</b>Cercetari privind separarea izotopilor prin schimb chimic si controlul automat al instalatiilor de separare prin</p>	-laboratoarele care dețin aparatură RMN, pentru efectuarea diferitelor studii pe nucleul de $^{15}\text{N}$ ;

<p><b>metode numerice avansate</b> Modernizarea si optimizarea tehnologiilor de separare a izotopului <math>^{15}\text{N}</math>.</p>	<p>-beneficiarii din străinătate care solicită Compusi marcati cu <math>^{15}\text{N}</math>.</p>
<p><b>Tema: Cercetari privind elaborarea, validarea si implementarea de metode bazate pe spectrometria de masa cu plasma cuplata inductiv, pentru determinarea de urme in matrici omogene</b> Servicii: Determinari de metale grele in mediu si produse farmaceutice</p>	<p>Unitati economice din tara cu profil farmaceutic si de protectia mediului</p>
<p><b>Tema: Elaborarea de metode izotopice noi in domeniu securitatii si calitatii alimentelor si bauturilor</b> Servicii: Determinarea autenticitatii unor produse alimentare utilizand amprenta izotopica</p>	<p>Producatori de uleiuri alimentare si de sucuri</p>
<p><b>Tema : Catalizatori nanostructurati activi in reactiile cu participarea hidrogenului: producere de hidrogen, schimb izotopic H/D</b> Compusi deuterati obtinuti la INCDTIM prin schimb chimic H/D: cloroform deuterat (<math>\text{CDCl}_3</math>), acetona deuterata (<math>\text{CD}_3\text{COCD}_3</math>), dimetilsulfoxid deuterat (<math>\text{CD}_3\text{SOCD}_3</math>)</p>	<p>Universitati si centre de investigare prin RMN</p>
<p><b>Tema: Caracterizarea structurala si dinamica a compusilor intermoleculari de tip "ligant-receptor" prin tehnici spectroscopice (UV/VIS, fluorescenta, RMN) si calorimetrie ( DSC si ITC)</b> Caracterizarea structurala si dinamica (stabilitate, stoichiometrie) a unor complexi supramoleculari de incluziune pentru compusi organici cu pronuntate proprietati antimicrobiene si antifungice.</p>	<p>Fabrici de medicamente, facultati de farmacie</p>
<p><b>Tema: Investigarea si procesarea unor sisteme moleculare si biomoleculare complexe in camp de microunde de mica putere</b> Experimente de convecție cu încălzire internă, non-contact, generată cu microunde, pentru studii de dinamică a mantalei Pământului</p>	<p>Institutul pentru Fizica Globului, Paris (IPGP), Franta</p>
<p>Produs-prototip adaptor de impedanta</p>	<p>SN de Radio-comunicatii SA, Sucursala Directia Radio-comunicatii Cluj, Romania</p>
<p>Serviciu-Masuratori parametrii Sij</p>	<p>SC TRAIECT SRL, Cluj Napoca, Romania</p>

Monitorizarea nivelului de poluare electromagnetica in mediu, in banda radiofrecventelor, pentru evaluarea expunerii populatiei	SC Interactive Systems & Bu-siness Consulting, Bucuresti, Romania; Laboratorul de expozimetrie si dozimetrie RF (din cadrul Aca-demiei Fortelor Terestre Sibiu), Romania
Executie prototipuri PCB	SC DAVA CONSULT SRL UBB – FAC. DE CHIMIE si INGINERIE CHIMICA
<b>Tema: Studiul structurilor supramoleculare cu nanoparticule bio-funcționalizate</b> Aplicatii <i>in vivo</i> si <i>in vitro</i> ale nanobastonaselor de aur funcționalizate cu proteine.	USAMV Cluj-Napoca, Ameliorarea raselor de animale

### 4.3.Participarea la colaborări internaționale:

Nr. crt.	Denumirea programului internațional	Tară și/sau CE unități colaboratoare	Denumire proiect	Valoarea proiectului (millei)	
				Valoare totală proiect	Valoare țară
1	Proiect „Brancusi”	INCDTIM Cluj, Romania – Universite du Littoral Dunkerque, Franta	CALORIMETRIE FOTOPIROELECTRICA DE INALTA REZOLUTIE PENTRU NANOFLUIDE MAGNETICE	Aprox: 5000euro	8650 ron
2	Acord colaborare bilaterala RO-Africa de Sud	Univ. Cape Town, Departamentul de chimie	Structure, physical-chemical properties and molecular modeling studies of „host-guest” typeinclusion complexis.	125.760 Eu	85.400 Eu

3	Colaborare interacademică între Academia Română și cea din R. P. Chineza	R. P. China	Scientific Cooperation Agreement between Nat Inst. for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca and National Laboratory for Synchrotron Radiation Beijing P. R. of China		
4	Proiect bilateral de tip Brancusi – partener IMN Nantes	Franta	„Sisteme hibride polimeri/nanoparticule magnetice” 2009-2010 , având ca parteneri INCDTIM și Institutul de Materiale Jean Rouxel Nantes (IMN), Franta.		20400 lei
5	POS-CCE	CE	Metode avansate de sinteză a materialelor hibride	6 430 548	1.157 498
6	FP 7	Coordonator: SOLAE Denmark AS	"Advanced magnetic nanoparticles deliver smart processes and products for life", MagPro2Life, NMP4-LA-2010-229335	664 114	223 662

7	FP 7	<ul style="list-style-type: none"> <li>• <b>Italy</b> Seconda Università degli Studi di Napoli</li> <li>• <b>Lithuania</b> UAB MGF "Šviesos konversija"</li> <li>• <b>Italy</b> Consorzio Nazionale Interuniversitario di Struttura della Materia</li> <li>• <b>France</b> Centre Européen de Recherche en Biologie et Médecine</li> <li>• <b>Sweden</b> Sigolis AB</li> <li>• <b>Belgium</b> Diogenode SA</li> <li>• <b>The Netherlands</b> Stichting Katholieke Universiteit</li> <li>• <b>Spain</b> Universidade VIGO</li> </ul>	<p><b>ATLAS</b></p> <p>Development of Laser-Based Technologies and Prototype Instruments for Genome-Wide Chromatin Immuno Precipitation Analyses</p>	3856877 Euro	75000 Euro
8	Cooperare internațională (cu <a href="#">Agentia Nationala de Cercetare Franceza</a> )	Franta, Institutul pentru Fizica Globului, Paris (IPGP)	Experimente de convecție cu încălzire internă, non-contact, generată cu microunde, pentru studii de dinamică a mantalei Pământului	2084058.9	1066837.5

9	FP 7	<ul style="list-style-type: none"> <li>• <b>Germany</b> fluIT Biosystems GmbH</li> <li>• <b>Denmark</b> Solae Denmark S/A</li> <li>• <b>Spain</b> Universidad de Salamanca</li> <li>• <b>Germany</b> Merck KG</li> <li>• <b>Switzerland</b> Bühler AG</li> <li>• <b>Germany</b> Universtät Karlsruhe</li> <li>• <b>Germany</b> KMPT Ag</li> <li>• <b>Denmark</b> Danmarks Techniske Universitet</li> <li>• <b>Ireland</b> University Dublin</li> <li>• <b>Switzerland</b> Swiss Federal Institute of Technology Zurich</li> <li>• <b>Germany</b> Technische Universität Bergakademie Freiberg</li> <li>• <b>Germany</b> Forschungszentrum Karlsruhe</li> <li>• <b>UK</b> University Birmingham</li> </ul>	<p><b>MagPro<sup>2</sup>Life</b></p> <p>Advanced Magnetic nanoparticles deliver smart Processes and Products for Life</p>	7399827 Euro	53300 Euro
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10	FP7	<ul style="list-style-type: none"> <li>• Suedia,</li> <li>• Germania,</li> <li>• Polonia,</li> <li>• Belgia,</li> <li>• Marea Britanie,</li> <li>• Elvetia,</li> <li>• Olanda,</li> <li>• Franta,</li> <li>• Cehia si</li> <li>• Romania</li> </ul>	Advanced fuels for Generation IV reactors: Reprocessing and Dissolution (ASGARD)	9.364.186 Euro	283.253 Euro
11	Romania-JINR Dubna 2015	JINR Dubna Rusia	Self-ordered exchange coupled hard/soft magnetic nanoparticles investigation using neutron scattering techniques	5000 \$	2000 \$
12	European Cooperation in Science and Technology (E-COST)	<p>Royal Meteorological Institute of Belgium (main proposer);  University of Mons – Umons, Belgium;  Ilmenau University of Technology -, Germany;  University of the Basque Country, UPV/EHU, Spain;  Madrid Institute for Advanced Studies (IMDEA) –Nanoscience, Spain;  University of Strasbourg;  Université de Lyon ;  Université de Saint-Etienne, France ;  Université de Bordeaux, France;  National Physical Laboratory, UK;  University College London, UK;  University of Szeged, Hungary;  Università degli studi di Milano, Italy;  Consiglio Nazionale delle Ricerche - Institute of Material Science and Technology, Italy;  INCDTIM Cluj-Napoca, Romania;  Romanian Academy-Timisoara Branch - Timisoara, Romania.</p>	COST TD1402: Multifunctional Nanoparticles for Magnetic Hyperthermia and Indirect Radiation Therapy- acronym RADIOMAG, 2014-2018		



Nr crt	Denumirea publicației	Titlul articolului	2009
	In tara: 7		
1	JOAM-Symposia, 1, 70 (2009)	M. Streza, D. Dadarlat, V. Simon, L. Silaghi-Dumitrescu, D. Prodan „Thermal Diffusivity Investigations of Some Dental Materials by Using Photopyroelectric Calorimetry”	
2	Revista de Chimie, Vol .60, Nr.3, 2009, 258 - 263	YASUHIKO FUJII, MASAO NOMURA, TATSUYA SUZUKI, DAMIAN AXENTE;Tokyo Institute of Technology, Japan; INCDTIM Cluj-Napoca, Romania - „Isotope Effects in Electron Exchange Reactions of Lanthanide and Actinide Elements Including Chemical Uranium Enrichment”	
3	Rev. Chim. 60 Nr 6 (2009) p. 599-604	„Structure Investigations of Some Complexes of Theophylline with Transitional Metals” Eleonora Marian, Tunde Jurca, Irina Kacso, Gh. Borodi, I. Bratu	
4	STUDIA PHYSICA - Issue no. 2/ 2008	Stelian Pinteau, Petru Mărginean, Stefan Gergely, Vasile Rednic, and N. Aldea, „Supported nickel catalysts investigated by temperature programmed reduction method”	
5	JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS - SYMPOSIA, Vol. 1, No. 1, 2009, p. 6 - 11	A. PETER, L. BAIA, V. COSOVEANU, M. BAIA, D. CONSTANTIN, E. INDREA, I. C. POPESCU, V. DANCIU “Influence of Si content and thermal treatment temperature on structural and photocatalytic properties of titania-silica aerogels”	
6	Revista de Chimie Vol. 60, Issue 4, April 2009, Pages 342-346	Ștefan, M., Popovici, E.-J., Baldea, I., Grecu, R., Indrea, E. „Influence of Preparative Conditions on Optical and Morpho-structural Properties of Zinc Sulphide Thin Films”	
7	STUDIA UNIVERSITATIS BABEȘ-BOLYAI, CHEMIA, LIV, 3, 2009	ECATERINA BICA, LAURA ELENA MUREȘAN, LUCIAN BARBUTUDORAN, EMIL INDREA, IONEL CĂTĂLIN POPESCU AND ELISABETH-JEANNE POPOVICI “STUDIES ON WO <sub>3</sub> THIN FILMS PREPARED BY DIP-COATING METHOD”	
	In strainatate: 50		
1	Acta. Chim. Slov. 56, 225 (2009)	High Accuracy Photopyroelectric Calorimetry of Liquids D. Dadarlat, C. Neamtu	
2	Laser Physics, 19, 1330 (2009)	Photopyroelectric Calorimetry of Liquids. Recent Development and Applications. D. Dadarlat	
3	Laser Physics, 19, 1340 (2009)	Thermal Effusivity Investigations of Solid Materials by Using the Thermal-Wave-Resonator-Cavity (TWRC) Configuration. Theory and Mathematical Simulations. M. Streza, M. N. Pop, K. Kovacs, V. Simon, S. Longuemart, D. Dadarlat	
4	Laser Physics, 19, 1345 (2009)	Thermal analysis of polymer dispersed liquid crystal under electric field using photopyroelectric technique N. Houriez, S. Delenclos, S. Longuemart, D. Dadarlat, A. Hadj Sahraoui	
5	J. Phys- Conf. Series, 182, 012023 (2009)	On the Sensitivity of FPPE-TWRC Method in Thermal Effusivity Investigations in Solids D. Dadarlat, M. Streza, N. M. Pop, V. Tosa,	
6	Europ. J. Lipids. Sci. Tech. (EJLST), 111, 148	Highly Accurate Photopyroelectric Measurement of Thermal Diffusivity of Vegetable Oils	

	(2009)	D. Dadarlat, C. Neamtu, M. Streza, C. Socaciu, C. Bele, F. Dulf
7	Food Biophys, 4, 147 (2009)	Photopyroelectric detection of vegetable oils' adulteration M. Streza, D. Dadarlat, C. Bele, F.V. Dulf, C. Socaciu, V. Simon
8	J. Phys.: Conf. Ser. 182, 012001 (2009)	A. Bende and I. Turcu, " <i>Molecular modeling of the weakly bounded dimers of some phenothiazine derivatives</i> ",
9	J. Phys.: Conf. Ser. 182 012019 (5pp) (2009)	N Tosa, L Olenic, I Bratu, R Turdeanu and I Turcu, <i>Infrared and UV-Vis Spectroscopic Study of 3,7,10-Substituted-Phenothiazine Derivatives Adsorbed on Gold Nanoparticles</i>
10	J. Phys.: Conf. Ser. 182 012011 (2009)	Mihaela Mic, Dyanne Cruickshank and Ioan Turcu, <i>Assessment of molecular interaction in a cycluron-cyclodextrin inclusion complex</i> ,
11	Cent. Eur. J. Chem. 7(1) (2009) 111-117	Raluca Turdean, Elena Bogdan, Anamaria Terec, Anca Petran, Laurian Vlase, Ioan Turcu, Ion Grosu, <i>Synthesis and structure of new 3,7,10-substituted-phenothiazine derivatives</i> ,
12	Cent. Eur. J. Phys. (2009) 332-339	Cristian Morari, Diana Bogdan, Ioan Turcu, <i>A first-principles study of conjugated thiol phenothiazine derivatives adsorbed on Au(111) surface</i> ,
13	Journal of Organic Chemistry, 74(10), 3944 - 3947 (2009)	N. Toşa, A. Bende, R. A. Varga, A. Terec, I. Bratu and I. Grosu " <i>H-bond-Driven Supramolecular Architectures of the Syn and Anti Isomers of the Dioxime of Bicyclo[3.3.1]nonane-3,7-dione</i> ",.
14	Supramol. Chem 21 (5), 358-366 (2009)	E. de Vries, M. Caira, M. Bogdan, S.I. Farcaş, Diana Bogdan, " <i>Inclusion of Parabens in <math>\beta</math>-cyclodextrin: A Solution NMR and X-ray Structural Investigation</i> "
15	Supramol. Chem. 22(3), 172-177 (2010)	V. Smith, Diana Bogdan, Mino R. Caira, M. Bogdan, Susan A. Bourne, S.I. Farcaş, " <i>Cyclodextrin inclusion of four phenylurea herbicides: determination of complex stoichiometries and stability constants using solution NMR spectroscopy</i> ",
16	J. Phys.: Conf. Ser. 182, 012013, 1-5 (2009)	A. Pîrnău, M. Bogdan. C. G. Floare, " <i>NMR Spectroscopic characterization of <math>\beta</math>-cyclodextrin inclusion complex with vanillin</i> ",
17	J. Phys.: Conf. Ser. 182, 012002, 1-5 (2009)	M. Bogdan, C. G. Floare, A. Pîrnău, " <i><math>^1\text{H}</math> NMR investigation of self-association of vanillin in aqueous solution</i> ",
18	Journal of Molecular Structure: THEOCHEM, 904, 28 - 34 (2009)	M. V. Diudea, A. E. Vizitiu, T. A. Beu, A. Bende, Cs. L. Nagy and D. Janežič: " <i>Circulene covered fullerenes</i> ",
19	Comput Visual Sci 12 (2009) 77-85	N. Suciuc, C. Vamos, I. Turcu, C. V. L. Pop, L. I. Ciortea, <i>Global random walk modelling of transport in complex systems</i> ,
20	<i>Journal of Physics: Conference Series</i> , Institute of Physics Publishing, UK , Volume 182, 2009, 012047 (5pp)	" <i>The effect of solution/free volume ratio on the MOF-5 characteristics</i> " Blanita G, Lupu D, Lazar M, Biris A, Ardelean O, Coldea I, Misan I, Popeneciu G
21	<i>Journal of Physics:</i>	„ <i>Hydrogen desorption from NaAlH<sub>4</sub> catalyzed by ball-milling with</i>

	<i>Conference Series</i> , Institute of Physics Publishing, UK , Volume 182, 2009, 012050 (5pp)	<i>carbon nanofibers</i> “ D Lupu, G Blanita, I Misan, O Ardelean, I Coldea, G Popeneciu and AR Biris,
22	Theoretical Chemistry Accounts, 125, 185-191 (2010)	" <i>Charge Transfer between DNA and Proteins in the Nucleosomes</i> " J. Ladik, A. Bende and F. Bogár
23	Theoretical Chemistry Accounts, 125, 253-268 (2010)	" <i>Hydrogen bonding in urea dimers and adenine-thymine DNA base pair: Anharmonic effects in intermolecular H-bond and intramolecular H-stretching vibrations</i> " A. Bende
24	International Journal of Quantum Chemistry (vol 109(3), 612 (2009))	" <i>A Simple Model for the Band Structure and D.C. Conductivity of an Infinite C=O...H-N Chain Perpendicular to the Protein Backbone</i> " A. Bende, F. Bogár and J. Ladik)
25	Journal of Physics: Conference Series ( vol 182, 012058 (2009))	" <i>Ab initio study of DNA nucleotides sandwiched between Au(111) electrodes</i> " Diana Bogdan,R. Bratfalean, R. Isai, C. Morari
26	ACS Nano, 3(12), 4137- 4143 (2009)	" <i>Electronic transport properties of 1,1'-ferrocene dicarboxylic acid linked to Al(111) electrodes</i> " (C. Morari et al.)
27	Journal of Physics: Conf. Series 182 (2009) 012065.	" <i>Chitosan-based systems for diclofenac delivery: preparation and characterization</i> " - Simina Dreve, Irina Kacso, Ioan Bratu and Emil Indrea
28	Journal of Physics: Conf. Series 182 (2009) 012003	" <i>Inclusion compound of vitamin B6 in <math>\beta</math>-CD. Physico-chemical and structural investigations</i> " - Gheorghe Borodi, Irina Kacso, Sorin I Fărcas and Ioan Bratu
29	Journal of Physics: Conf. Series 182 (2009) 012009	" <i>Inclusion compound of vitamin B13 in <math>\beta</math>-Cyclodextrin. Structural investigations</i> " - Irina Kacso, Gheorghe Borodi, Sorin I Fărcas and Ioan Bratu
30	Journal of Physics: Conf. Series 182 (2009) 012004	" <i>Spectroscopic investigation of the interaction between <math>\beta</math>-cyclodextrin and ascorbic acid</i> " - Ioan Bratu, Marieta Muresan-Pop, Irina Kacso and Sorin I Fărcas
31	Journal of Inclusion Phenomena and Macrocyclic Chemistry, 68, (1), 175-182 (2010)	Host-guest system of Vitamin B10 in $\beta$ -cyclodextrin: characterization of the interaction in solution and in solid state , Irina Kacsó, Gh. Borodi, S.I. Farcas, A. Hernanz and I. Bratu
32	Journal of Physics Conf. Series 182(2009) 012036	Voica, C., Dehelean, A., Pamula, A. „ <i>Method validation for determination of heavy metals in wine and slightly alcoholic beverages by ICP-MS</i> ”
33	Journal of Physics Conf. Series 182(2009) 012082	Voica, C. „ <i>Ceramics with decorative aspect</i> ”
34	Spectroscopy – An International Journal, 23 Nr. 3-4 (2009) 191-199	" <i>Spectroscopic studies of the inclusion compound of lisinopril with <math>\beta</math>- cyclodextrin</i> " Alexandra Olaru, Gh. Borodi, Iren Kacso,M. Vasilescu, I. Bratu,O. Cozar
35	Superlattices and Microstructures 46	Stelian Pinte, Vasile Rednic, Petru Marginean, Nicolae Aldea, Hu Tiandou, Zhonghua Wu, Manfred Neuman, Florica Matei, „ <i>Crystalline</i>

	(2009) 130-36	<i>and electronic structure of Ni nanoclusters supported on Al<sub>2</sub>O<sub>3</sub> and Cr<sub>2</sub>O<sub>3</sub> investigated by XRD, XAS and XPS methods</i>
36	Superlattices and Microstructures 46 (2009) 141-148	Nicolae Aldea, Vasile Rednic, Stelian Pinteau, Petru Marginean, Bogdan Barz, Andreea Gluhoi, Bernard E. Nieuwenhuys, Manfred Neuman, Xie Yaning, Florica Matei, „ <i>Local, global and electronic structure of supported gold nanoclusters determined by EXAFS, XRD and XPS methods</i> ”
37	J. Nanopart. Res. 11, (1), 1429-1439 (2009)	N. Aldea, R. Turcu, A. Nan, I. Craciunescu, O. Pana, Xie Yaning, Zhonghua Wu, D. Bica, L. Vekas and F. Matei “ <i>Investigation of nanostructured Fe<sub>3</sub>O<sub>4</sub> polypyrrole core-shell composites by X-ray absorption spectroscopy and X-ray diffraction using synchrotron radiation</i> ”
38	J. Polym. Sci. Part A: Polym. Chem., 24, 5379(2009)	Nan, R. Turcu, I. Craciunescu, O. Pana, H. Scharf, J. Liebscher, ” <i>Microwave-Assisted Graft Polymerization of ε-Caprolactone onto Magnetite</i> ”
39	Journal of Physics: Conference Series(IOP), 182 (2009) 012071	O Pana, R Turcu, M L Soran, S. Macavei, C. Leostean, “ <i>Synthesis and characterization of LSMO nanoparticles covered with Au having a core-shell structure</i> ”
40	Journal of Physics: Conference Series(IOP), 182 (2009) 012081	R Turcu, A Nan, I Craciunescu, O Pana, C Leostean and S Macave, “ <i>Smart composites based on magnetic nanoparticles and responsive polymers</i> ”
41	J. Phys: Conf. Ser. 182, 2009, 012051	<b>Maria Miheţ, Mihaela Lazăr and Valer Almăşan – „Mobility of hydrogen species on Ni supported catalysts”</b>
42	<i>J. Phys.: Conf. Ser.</i> <b>182</b> 012049	Mihaela Lazăr, Maria Miheţ, Monica Dan, Valer Almăşan, Petru Mărginean – „ <i>Preparation and characterization of nickel based multicomponent catalysts</i> ”
43	Journal of Physics: Conference Series 182 (2009) 012039	Ioana C. Glajar and Z. Moldovan, „ <i>Photodegradation of indoor organic pollutants by UV irradiation using TiO<sub>2</sub> catalysts</i> ”
44	Journal of Physics: Conference Series 182 (2009) 012043	Florina Tusa, Z. Moldovan and M. Vlăsa „ <i>Identification and measurement of pesticide contaminants in food products by electron impact GC/MS</i> ”
45	J. Phys.: Conf. Ser. <b>182</b> (2009) 012066	Emil Indrea, Anca Peter, Danut T Silipas, Simina Dreve, Ramona-Crina, Suci, Marcela Corina Rosu, Virginia Danciu and Veronica Cosoveanu „ <b><i>Structural characterisation of binary SiO<sub>2</sub>/TiO<sub>2</sub> nanoparticle aerogels by X-ray scattering</i></b> ”
46	Journal of Physics: Conference Series 182 (2009) 012080	R C Suci, E Indrea, T D Silipas, S Dreve, M C Rosu, V Popescu, G Popescu, and H I Nascu “ <i>TiO<sub>2</sub> thin films prepared by sol - gel method</i> ”
47	Journal of Alloys and Compounds 483 (2009) 445–449	E. Indrea, Simina Dreve, T.D. Silipas, G. Mihailescu, Virginia Danciu, Veronica Cosoveanu, A. Nicoara, Laura Elena Muresan, Elisabeth Jeanne Popovici, Violeta Popescu, H.I. Nascu, R. Tetean “ <i>Nanocrystalline semiconductor materials for solar water-splitting</i> ”
48	Journal of Alloys and Compounds 483 (2009) 346–349	Laura Muresan, Elisabeth Jeanne Popovici, Florica Imre-Lucaci, Rodica Grecu, Emil Indrea “ <i>Studies on Y<sub>2</sub>O<sub>3</sub>:Eu phosphor with different particle size prepared by wet chemical method</i> ”
49	Physics Procedia 2	Elisabeth-Jeanne Popovici, Mihail Nazarov, Laura Muresan, Do Young

	(2009) 185–190	Noh, Ecaterina Bica, Marius Morar, Ivan Arellano and Emil Indrea “ <i>STUDIES CONCERNING THE PROPERTIES OF SOME EUROPIUM ACTIVATED PHOSPHORS BASED ON YTTRIUM TANTALATE</i> ”
50	Journal of Physics: Conference Series 182 (2009) 012055	Teofil D Silipas, Emil Indrea, Simina Dreve, Ramona-Crina Suciu, MarcelaCorina Rosu, Virginia Danciu, Veronica Cosoveanu and Violeta Popescu “ <i>TiO<sub>2</sub> - based systems for photoelectrochemical generation of Solar hydrogen</i> ”

Nr crt	Denumirea publicației	Titlul articolului	2010
	In tara: 17		
1	Optoel. Adv. Mat.- Rapid Commun.( OAM- RC), nr. 10, (2010)	<i>On the photopyroelectric investigation of thermal effusivity of solids. Amplitude vs. phase in the FPPE-TWRC configuration.</i> D Dadarlat, M N Pop, V Tosa, S Longuemart, A Hadj Sahraoui, P Hus	
2	Studia Univ. Babes- Bolyai, Physica, LV, 1, 145 (2010)	<i>Investigation of thermal effusivity of thin solids in a layered system. FPPE-TWRC approach</i> M N Pop, M. Streza, D. Dadarlat, V. Simon	
3	Revue Roumaine de Chimie, 56(6), 659-665 (2011)	<i>Low temperature hydrogen selective catalytic reduction of NO on Pd/Al<sub>2</sub>O<sub>3</sub></i> , M. Miheț, M. D. Lazăr, V. Almășan, G. Borodi	
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5	Journal of Optoelectronics and Advanced Materials - Symposia, Vol. 2, No. 1, 2010, p. 1 – 5	„ <i>Spectroscopic studies of the inclusion compound of Lisinopril in β-cyclodextrin</i> ” A. Olaru, Gh. Borodi, I. Kacso, M. Vasilescu, I. Bratu, O. Cozar	
6	Journal of Optoelectronics and Advanced Materials - Symposia, Vol. 2, No. 1, 2010, p. 71 – 77	„ <i>Stimuli responsive polymer architectures for drug delivery</i> ” I. Craciunescu, A. Nan, R. Turcu, I. Kacso, I. Bratu, L. Vekas	
7	Progress of Cryogenics and Isotopes Separation, vol. 13, issue 2/2010, ed. Conphys Rm. Vilcea, ISSN: 1582-2575, CNCSIS Quote; 619, pp. 17-25	„ <i>Ceramic pigments based tin oxide for ceramics</i> ”, Voica Cezara	
8	Progress of Cryogenics and Isotopes Separation, vol. 13, issue 1/2010, ed. Conphys Rm. Vilcea, ISSN: 1582-2575, CNCSIS Quote; 619, pp. 39-46	„ <i>Metal content and isotopic characterization of archaeological samples. Preliminary results.</i> Voica, C., Dehelean A., Maxim, Z.	

9	Romanian Reports in Physics, 64(1), 221-231 (2012)	„Method validation for determination of metals in soils by ICP-MS” Voica,C., Dehelean, A., Iordache, A., Geana, I.
10	Rev. Roum. Chim. 2010, 56(6), 655-657 (2011)	„Supported Pt and Pd catalysts for hydrogen adsorption in MOFs”, O. Ardelean, G. Blăniță, M. Miheț, I. Coldea, D. Lupu, P.Palade,
11	Rev. Roum. Chim. 56(6), 683-588 (2011)	“Microwave assisted synthesis of MOF-5 at atmospheric pressure”, G. Blăniță, O. Ardelean, D. Lupu, G. Borodi, M. Miheț, M. Coroș, M. Vlăsa, I. Mișan, I.,Coldea, G. Popeneciu
12	Optoelectronics and Advanced Materials - Rapid Communications, 4(11), 1724-1727 (2010)	„Novel Carbon Paste Selective Material for Potassium Detection” C. Varodi, N. Tosa, E. Bogdan, I. Grosu, L. M. Muresan, I. Turcu
13	Nonconventional Technology Review, nr.1, (2010) 42-49.	„Medical and scientific apparatus with microwave thermal and non-thermal effect” Vasile Surducan, Emanoil Surducan
14	Proceedings of IEEE International Conference on Automation, Quality and testing, Robotics - AQTR-(2010) 360-364	„Near-field Effect of the Microwaves Power Applicators Investigated for Liquid Processing Applications” Emanoil Surducan, Vasile Surducan, Camelia Neamtu, Cristian D.Tudoran
15	Proceedings of IEEE International Conference on Automation, Quality and testing, Robotics - AQTR-(2010) 366-372.	“ Embedded System Controlling Microwave Generators in Hyperthermia and Diathermy Medical Devices” Vasile Surducan, Emanoil Surducan, Radu Ciupa, Marius Roman
16	STUDIA UNIVERSITATIS BABEȘ-BOLYAI, PHYSICA, LV, 1, 2010	„DEUTERIUM ISOTOPIC CHARACTERIZATION OF PRECIPITATION WATER” R.Puscas. V. Feurdean
17	Proceeding of the International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences Proceeding of IC-ANMBES 2010, ISBN 978-973-598-722-0	„Multielement determination and isotopic characterization in wines by inductively coupled plasma mass spectrometry” Voica C., Dehelean A.
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2	J. Phys- Conf. Series, 214, 012056 (2010)	Calorimetric Investigation of Solids by Combined FPPE-TWRC Method D. Dadarlat , M. Streza, M. N. Pop, V. Tosa , S. Delenclos, S. Longuemart, A. Hadj Sahraoui
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8	Fullerenes, Nanotubes and Carbon Nanostructures, 18(3), 236 - 243 (2010)	<i>"Omega polynomial in diamond-like networks"</i> M. V. Diudea, A. Bende and D. Janežič
9	Fluctuation and Noise Letters, 9(1), L47-L59 (2010)	<i>„Autoregressive modelilg of coding sequence lengths in bacterial genom”</i> Vasile V. Morariu, Luiza Buimaga-Iarinca
10	Biophysical Review and Letters, 5(3), 109-128, 2010.	<i>„Autoregressive modeling of biological phenomena”</i> Vasile V. Morariu, Calin Vamos, Alexandru Pop, Stefan Soltuz, Luiza Buimaga-Iarinca, Oana Zainea
11	J. Molecular Modelling, 17(12), 3265-3274 (2011)	<i>„Localization and anharmonicity of the vibrational modes for the CG Watson-Crick and Hoogsteen base pairs ”</i> A. Bende, D. Bogdan C. Muntean, C. Morari
12	Modern Physics Letters B, Vol. 25, No. 1 (2011) 1–10	<i>“Magnetic clusters development in oxidized CeNi<sub>5</sub> powder”</i> L. Rednic, M. Coldea, I. G. Deac, V. Rednic, N. Aldea, M. Neumann,
13	<i>Synth. Met. 160, 1692 (2010)</i>	<i>„Synthesis and characterization of the core–shell Au covered LSMO manganite magnetic nanoparticles”</i> O. Pana, R.Turcu, M.L.Soran, C.Leostean, E.Gautron, C.Payen, O.Chauvet
14	J. Nanopart. Res., 13, 6181-6192 (2011)	<i>“Comparative study of core-shell iron/iron oxide gold covered magnetic nanoparticles obtained in different conditions”</i> C. Leostean, O. Pana, R. Turcu, M. L.Soran, S. Macavei, O. Chauvet, C. Payen,
15	J. Appl. Phys., 111, 044309 (2012)	<i>“Interface charge transfer in polypyrrole coated perovskite manganite magnetic nanoparticles”</i> O. Pana, M. L. Soran, C. Leostean, S. Macavei, E. Gautron, C. M. Teodorescu, N. Gheorghe, O. Chauvet
16	J.Incl.Phenom. Macrocycl. Chem. 2010, 68, 175-182	<i>„Spectroscopic investigation of the interaction between β-cyclodextrin and vitamin B10</i> „Irina Kacso, Gh. Borodi, S. I. Farcas, A. Hernanz, I. Bratu
17	International Journal of Nano and Biomaterials (IJNBM) <a href="http://www.inderscience.com/browse/index.php?journalID=230">http://www.inderscience.com/browse/index.php?journalID=230</a> ISSN (Online): 1752-	<i>„Chitosan-based microspheres for controlled release of anti inflammatory active drugs”</i> S. Dreve, I. Kacso, A. Popa, O. Raita, F. Dragan, A. Bende, Gh. Borodi, I. Bratu

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18	Asian Journal of Chemistry, 23(12), 5213-5216 (2011)	“Comparison of three digestion methods for heavy metals determinations in soils and sediments materials by ICP-MS” E.I. Geana, A.M. Iordache, C. Voica, M. Culea, R.E. Ionete
19	Isotopes in Environmental and Health Studies 46, 2, 242-248 (2010)	„Experimental plant for simultaneous production of $^{14}\text{N}$ and $^{15}\text{N}$ by $^{15}\text{N}/^{14}\text{N}$ exchange in $\text{NO}, \text{NO}_2 - \text{HNO}_3$ system under pressure”, D. Axente, Cristina Marcu, Ancuța Mureșan, Martin Kaucsar, I. Mișan, G. Popeneciu, N. Gligan, Gabriele Cristea
20	Isotopes in Environmental and Health Studies 46, 4, 1 - 10 (2010)	„Dynamic modeling and simulation of $^{15}\text{N}$ separation by chemical exchange in $\text{NO}, \text{NO}_2 - \text{HNO}_3$ system”, Paula Raica; D. Axente,
21	J. Phys. Chem. A 114 (2010), 12479–12489	„Molecular Modeling of Phenothiazine Derivatives: Self-Assembling Properties” Attila Bende Ion Grosu and Ioan Turcu
22	Chem. Phys. Lett. 495(1-3), 017-023 (2010)	„Photoionisation and Structures of Jet-Formed Toluene Clusters” T. M. Di Palma, A. Bende and A. Borghese
23	Fullerenes, Nanotubes and Carbon Nanostructures 18(3), 236-243 (2010)	„Omega polynomial in diamond-like networks” M. V. Diudea, A. Bende and D. D. Janežic
24	J. of Molecular Liquids, 158(3), 205-207 (2011)	„Ab initio structures of interacting methylene chloride molecules with comparison to the liquid phase” L. Almasy and A. Bende
25	Journal of Thermal Analysis and Calorimetry, 104(1), 299-306 (2011)	„SPECTROSCOPIC AND STRUCTURAL STUDY OF THE AMBAZONE HYDROCHLORIDE” Marieta Muresan-Pop, Irina Kacsó, Carmen Tripon, Z. Moldovan, Gh. Borodi, S. Simon I and I. Bratu.
26	Journal of Molecular Structure, 997, 78-86 (2011)	„Structural investigation of chitosan-based microspheres with some anti-inflammatory drugs” Simina Dreve, Iren Kacso, Adriana Popa, Oana Raita, Felicia Dragan, A. Bende, Gh. Borodi and I. Bratu
27	Acta Chimica Slovenica, 59(1), 18-23 (2012)	„INCLUSION COMPOUND OF AMLODIPINE BESYLATE WITH $\beta$ -CYCLODEXTRIN” Otilia Bradea, Iren Kacso, Gh. Borodi, and I. Bratu

Nr crt	Denumirea publicației	Titlul articolului	2011
	In tara: 11		
1	Romanian Journal of Physics, vol 56 (7-8), 2011	Method validation for determination of metals in soils by ICP-MS	Voica, C, Dehelean, A., Iordache, A., Geana, I.
2	Rev. Roum. Chim, 2011; 56(6): 659-665.	Low temperature hydrogen selective catalytic reduction of NO on Pd/Al <sub>2</sub> O <sub>3</sub> ,	M. Miheț, M. D. Lazăr, V. Almășan, G. Borodi
3	Rev. Chim. (Bucharest) 62(10) ( 2011) 992-997	“Inclusion Complex of $\beta$ -Cyclodextrin and Quercetin. Thermodynamic Approach”	CS. P. Racz, R.-D. Pasca, SZ. Santa, I. Kacso, G. Tomoaia, A. Mocanu, O. Horovitz, M. Tomoaia-Cotisel
4	Rev. Roum. Chim. 56(6),	„Analytic studies of high quality singlewall carbon nanotubes	



	(2011), 651-654.	<i>synthesized on a novel Fe:Mo:MgO catalyst</i> ", Biris A.R., Dervishi E, Simon S, Lupu D, Misan I, Iancu C, Clichici S.V, Xu Y, Watanabe F, Biris A.S,
5	Revue Roumaine de Chimie , 2011, 56(6), 613-618	<i>„Rietveld Analysis of Nanocrystalline Titania Prepared by Sol-Gel Method”</i> Emil Indrea, Ramona-Crina Suci, Marcela-Corina Rosu and Teofil-Dănuț Silipaș
6	Revue Roumaine de Chimie , 2011, 56(6), 589-593	<i>„Rietveld Refinement of Powder X-Ray Diffraction of Nanocrystalline Noble Metals – Tungsten Trioxide”</i> Emil Indrea, Ecaterina Bica, Elisabeth-Jeanne Popovici, Ramona-Crina Suci, Marcela Corina Roșu and Teofil-Dănuț Silipaș
7	Rev Roum Chim 2011, 56(6), 601- 605	<i>„The influence of TiO<sub>2</sub> mass proportion in preparation of ITO/TiO<sub>2</sub> nanostructured film”</i> Marcela Corina Roșu, Ramona - Crina Suci, Irina Kacso, T. D. Silipaș, I. Bratu, E. Indrea,
8	Rev Roum Chim 2011, 56(6), 607 - 612	<i>„TiO<sub>2</sub> thin films prepared by spin coating technique”</i> Ramona - Crina Suci, Marcela - Corina Roșu, T. - D. Silipaș, Al. R. Biriș, I. Bratu, E. Indrea
9	Environmental Engineering and Management Journal , February 2011, Vol.10, No. 2, 187-192	<i>„Fe<sub>2</sub>O<sub>3</sub> – TiO<sub>2</sub> Thin Films Prepared by Sol-Gel Method”</i> Ramona - Crina Suci, Marcela Corina Roșu, Teofil Dănuț Silipaș, Emil Indrea, Violeta Popescu, George Liviu Popescu
10	J Optoelectron Adv M, 2011, 13, 11 - 12, 1405 – 1411	<i>„Phtalocyanine and Meso-Tetraphenylporphine Effects on TiO<sub>2</sub>/Cds Nanocomposites Photoactivity”</i> Marcela - Corina Roșu, <u>Ramona - Crina Suci</u> , M. D. Lazar, I. Bratu
11	Clujul Medical 84(2) (2011) 184-187	<i>„Complexul de incluziune al trimetazidinei cu β-cyclodextrina”</i> Chis Adriana, Kacso Irina, Borodi Gheorghe, Bratu Ioan
	<b>In strainatate: 34</b>	
1	Int. J. Thermophysics, DOI 10.1007/s10765-011-1067-y	<i>Combined FPPE-PTR Calorimetry Involving TWRC Technique II. Experimental – Application to Thermal Effusivity Measurements of Solids.</i> D. Dadarlat, · M. N. Pop, · M. Streza, S. Longuemart, M. Depriester, · A. Hadj Sahraoui, · V. Simon
2	J. Appl. Phys., 110, 033510 (2011)	<i>Heat Transport in Polymer-dispersed Liquid Crystals Under Electric Field</i> A. H. Sahraoui, S. Delenclos, S. Longuemart, D. Dadarlat
3	Acta. Chim. Slov. 58, 549 (2011)	<i>Photopyroelectric investigation of thermal effusivity of binary liquid mixtures by FPPE-TWRC method.</i> N. M. Pop D. Dadarlat, M. Streza, V. Tosa,
4	American Institute of Physics, 1425, 182 (2012)	<i>Deuterium Isotopic Characterization of Long-Term Precipitation Water in Cluj Napoca, Romania, Puscas R.H., Radu S.</i>
5	American Institute of Physics, 1425, 168 (2012)	<i>The Use of Isotope Ratios for Vegetable Oils Authentication, G. Cristea, D.A. Magdas, V. Mirel</i>
6	Asian Journal Of Chemistry, vol. 23/2011, No. 12 (2011), 5213-5216	<i>Comparison of three digestion methods for heavy metals determination in soils and sediments materials by ICP-MS technique</i> Geana,I., Iordache, A., Voica,C., Ionete, R.
7	American Institute of	<i>H<sub>2</sub>-SCR at low temperatures on noble metal supported catalysts., M.</i>

	Physics, 1425, 73 (2012)	Miheț, M. D. Lazăr, V. Almășan, V. Mirel
8	Journal of Molecular Structure 997 (2011) 78-86	„Structural Investigation of Chitosan-based Microspheres with some Anti Inflammatory Drugs” Simina Dreve, Iren Kacso, Adriana Popa, Oana Raita, Felicia Dragan, A. Bende, Gh. Borodi, I. Bratu
9	Spectroscopy 26 (2011) 115–128	“Spectroscopic and physical–chemical characterization of ambazone–glutamate salt” Marieta Muresan-Pop, Irina Kacsó, Xenia Filip, Emilia Vanea, G. Borodi, N. Leopold, I. Bratu, S. Simon
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11	Solid State Commun 151(4), 301-305 (2011)	„Model calculations of the energy band structures of double stranded DNA in the presence of water and Na <sup>+</sup> ions” A. Bende, F. Bogár, J. Ladik
12	Physica E: Low-dimensional Systems and Nanostructures, 44(7–8), 1441–1445 (2012)	„Ab initio study of the vibrational properties of single-walled silicon nanotube” Diana Bogdan, Radu Isai, Adrian Calborean, Cristian Morari
13	J. Phys. Chem. C, 116 (13), 7351–7359 (2012)	„Electronic Properties of DNA nucleosides Adsorbed on a Au(100) surface” D. Bogdan, C. Morari
14	World Academy of Science, Engineering and Technology 79 (2011) 876-880	„Global and local structure of supported Pd catalysts” V. Rednic, N. Aldea, P. Marginean, D. Macovei , C. M. Teodorescu, E. Dorolti and F. Matei,
15	World Academy of Science, Engineering and Technology 79 (2011) 311-317	„Structural and electronic characterization of supported Ni and Au catalysts used in environment protection determined by XRD, XAS and XPS methods” N. Aldea, V. Rednic, F. Matei, Tiandou Hu and M. Neumann,
16	J. Radioanal. Nucl. Chem., 288, 3, 717-721 (2011).	„Reduction of U(VI) adsorbed on anion exchange resin with V(III) in acid solution” D.Axente, AncutaBalla, Cristina Marcu
17	American Institute of Physics, 1425, 61 (2012)	„Investigation of heat and mass transfer process in metal hydride hydrogen storage reactors, suitable for asolar powered water pump system” I Coldea, G Popeneciu, D Lupu, I Misan, G Blanita, O Ardelean,
18	J Nanopart Res 13, 6181–6192(2011)	“Comparative study of core–shell iron/iron oxide gold covered magnetic nanoparticles obtained in different conditions” C. Leostean, O. Pana, R. Turcu, M. L. Soran, S. Macavei, O. Chauvet, C. Payen
19	Physica E 43 (2010) 552–558	„Analytic studies of high quality singlewall carbon nanotubes synthesized on a novel Fe:Mo:MgO catalyst”, Biris A.R., Dervishi E, Simon S, Lupu D, Misan I, Iancu C, Clichici S.V, Xu Y, Watanabe F, Biris A.S,
20	Magnetic Resonance in Chemistry, 49 (11) (2011), 730-733.	„NMR relaxation dispersion of miglyol molecules confined inside polymeric micro-capsules” R. Nechifor, I. Ardelean, C. Mattea, S. Stapf, M. Bogdan
21	International Journal of Molecular Sciences 12, (2011) 3102-3116	”Nitrogen Substituted Phenothiazine Derivatives: Modelling of Molecular Self-Assembling” Attila Bende and Ioan Turcu

22	Journal of Molecular Liquids, 158(3), (2011). 205 - 207	„Ab initio structures of interacting methylene chloride molecules with comparison to the liquid phase” L. Almásy and A. Bende
23	Journal of Molecular Liquids, 162(2), (2011) 45 – 49.	„Weakly bonded cluster structures of N,N'-dimethylethyleneurea and water” A. Bende and L. Almásy
24	J. Polymer Sci. Part B: Polymer Physics, 49(19), 1389-1396(2011)	“Synthesis and characterization of water-dispersible, superparamagnetic single-wall carbon nanotubes decorated with iron oxide nanoparticles and well-defined chelating diblock copolymers” P. Paraphilippou, R Turcu, T. Krasia
25	AIP Conference Proceedings (2011), 1425, 135 (2012)	“Magnetization Enhancement of Magnetic Nanoparticles Coated with Polypyrrole” O. Pana, C. Leostean, M.L. Soran, M. Stefan, S. Macavei , N.G. Gheorghe and C.M. Teodorescu,
26	AIP Conference Proceedings, 1425 (155), 155 – 158 (2012)	„Structural Characterisation of Zinc Sulphide Thin Films by X-ray Scattering” M. Stefan, E. Indrea, E. J.Popovici, M.L. Soran, O. Pană,
27	International Journal of Food Science & Technology, 47(7), 1448–1456 (2012)	„Chemical and Sensory Changes of Different Dairy Products During Storage in Packages Containing Nano-Crystallized TiO <sub>2</sub> ” Anca Peter, Camelia Nicula, Anca Mihaly-Cozmuta, Leonard Mihaly-Cozmuta, Emil Indrea
28	Journal of Physics and Chemistry of Solids, Volume 73, Issue 2, February 2012, Pages 221-226	„XRD and EPR Structural Investigation of Some Zinc Borate Glasses Doped With Iron Ions” Razvan Stefan, Petru Pascuta, Adriana Popa, Oana Raita, Emil Indrea, Eugen Culea
29	American Institute of Physics: Conference Series, 1425, 186 (2012)	„The Thermal desorption of CO <sub>2</sub> From Amine Carbamat Solutions For The <sup>13</sup> C Isotope Enrichment” S. Dronca, C.Varodi, M.Gligan, V.Stoia, A.Baldea and I.Hodor
30	J Therm Anal Calorim 104 (2011) 299–306.	“Spectroscopic and structural study of the ambazone hydrochloride” Marieta Muresan-Pop, Irina Kacso, Carmen Tripon, Z. Moldovan, Gh. Borodi, S. Simon, I. Bratu,
31	Journal of Molecular Structure 997 (2011) 78-86	„Structural investigation of chitosan-based microspheres with some anti-inflammatory drugs” Dreve Simina, Kacso Iren, Popa Adriana, Raita Oana, Dragan Felicia, Bende Attila, Borodi Gheorghe, Bratu Ioan,
32	Spectroscopy 26 (2011) 115–128	„Spectroscopic and physical–chemical characterization of ambazone–glutamate salt” Muresan-Pop Marieta, Kacsó Irina, Filip Xenia, Vanea Emilia, Borodi Gheorghe, Leopold Nicolae, Bratu Ioan, Simon Simion,
33	Spectroscopy 25 (2011) 53–62	„New solid form of Norfloxacin: Structural studies” I. Bratu, G. Borodi, Iren Kacsó, Z. Moldovan, C. Filip, Felicia Dragan, M. Vasilescu, S. Simon
34	J. Chromatography A, 1218 (2011) 343-349	“ The determination of the linear alkylbenzene sulfonate isomers in water samples by gas-chromatography/mass spectrometry” Z. Moldovan, V. Avram, O. Marincas, P. Petrov. Th. Ternes

Nr crt	Denumirea publicatiei	Titlul articolului	2012
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1	Romanian Journal of Physics, vol.57, nr.9-10, pp.1382-1391, 2012	High Frequency Inverter Based Atmospheric Pressure Plasma Treatment System, Autori : <u>Cristian D.Tudoran</u> , Vasile Surducan, A.Simon, A.M.Papiu, O.E.Dinu, S.D.Anghel
2	Revista de Chimie, 63(9), 855-858 (2012)	<i>Determination of Phenolic Compounds from Wine Samples by GC/MS System</i> Gabiella Schmutzer, V. Avram, V. Coman, Leontin David, Z. Moldovan
3	Romanian Journal of Physics, 58(1-2), 204-210 (2013)	<i>Optimization of organometallic compounds extraction from aqueous samples in order to improve their gas chromatography-mass spectrometry analysis performance</i> Kovacs Melinda Haydee, Ristoiu Dumitru, Voica Cezara, Ristoiu Tania
4	Revue Roumaine de Chimie, 57(1), 15-21, 2012	„ <i>The influence of PEG/PPG and of the annealing temperature on TiO<sub>2</sub>-based layers properties</i> „, M. Rosu, R. Suci, S. Dreve, D. Silipas, I. Bratu, E. Indrea
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6	Reac. Kinet. Mech. Cat., 105 (173–193) 2012	<i>Supported nickel catalysts for low temperature methane steam reforming: comparison between metal additives and support modification;</i> autori: Monica Dan, Maria Mihet, Alexandru R. Biris, Petru Marginean, Valer Almasan, George Borodi, Fumiya Watanabe, Alexandru S. Biris, Mihaela D. Lazar
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10	<i>J. Molec. Structure</i> , <b>144</b> , 72-78 (2013)	„ <sup>1</sup> H NMR spectroscopic characterization of inclusion complexes of tolfenamic and flufenamic acids with $\beta$ – cyclodextrin” C.G. Floare, A. Pirnau and M. Bogdan
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13	<i>Journal of Nanoparticles Research</i> 2012, <b>14</b> :985	„One-step ligand exchange reaction as an efficient way for functionalization of magnetic nanoparticles” R. Mrowczynski, L.Rednic, R. Turcu, J. Liebscher
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15	<i>Physical Review Letters</i> , <b>108</b> , 193903 (2012)	<i>Quasi-Phase-Matching High-Harmonic Radiation Using Chirped THz Pulses</i> , K. Kovacs, E. Balogh, J. Hebling, V. Tosa, K. Varju,
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22	<i>AIP Conference Proceedings</i> <b>1425</b> , 73-76	<i>H<sub>2</sub>-SCR At Low Temperatures On Noble Metal Supported Catalysts</i> , Maria Mihet, Mihaela Diana Lazar, V Almasan, And V Mirel
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Proceedings 1425, 165-167	<i>The Study Of The Local Sources Of CO2 Using Stable Isotopes</i> , Gabriela Cristea, Dana A. Magdas, Stela Cuna, Edina Dordai And V. Mirel
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Nr crt	Denumirea publicatiei	Titlul articolului	2013
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1	STUDIA UBB BIOLOGIA, LVIII, 1, 2013 (p. 83-98)	<i>Microwaves irradiation experiments on biological samples</i> , E. Surducan , V. Surducan , A. Butiuc-Keul, A.Halmagyi	
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1	Journal of Molecular Structure, 1031 (2013)216–220	Sorina Garabagiu - <i>Gold nanorods–hemoglobin bio-conjugate: Spectroscopy studies</i>	
2	Journal of Luminescence, 143 (2013) 271–274	Sorina Garabagiu, Cosmin Pestean, Razvan Stefan - <i>In vivo fluorescence studies of whole blood after chitosan bio-functionalized gold nanorods administration</i>	
3	Applied Surface Science, 284 (2013) 780– 783	Sorina Garabagiu, Ioan Bratu - <i>Thiol containing carboxylic acids remove the CTAB surfactant onto the surface of gold nanorods: An FTIR spectroscopic study</i>	
4	AIP Conference Proceedings, 1565, 215-218 (2013)	Sorina Garabagiu - <i>The quenching effect of dopamine fluorescence in the presence of gold nanorods</i>	
5	AIP Conference Proceedings, 1565, 273-277 (2013)	A Vulcu, S Pruneanu, C Berghian-Grosan, L Olenic, LM Muresan and L Barbu-Tudoran, <i>Impedimetric Investigation of Gold Nanoparticles – Guanine Modified Electrode</i>	
6	J. Pharm. Biomed. Anal. <u>72</u> , 134 – 138 (2013)	S.Neamtu, M. Mic, M. Bogdan, I. Turcu, <i>The artifactual nature of Stavudine binding to Human Serum Albumin. A fluorescence quenching and isothermal titration calorimetry.</i>	
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9	AIP Conf. Proc. 1565, 48 (2013)	C. Floare, M. Bogdan, <i>CONSTEQ- A program for association constants determination using solution NMR data,</i>	
10	AIP Conf. Proc. 1565, 63 (2013)	Mihaela Mic, A. Pirnau, M. Bogdan, I. Turcu, <i>Inclusion complex of benzocaine and <math>\beta</math>-cyclodextrine: <sup>1</sup>H NMR and isothermal titration calorimetry studies</i>	
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14	Materials Chemistry and Physics 138 (2013) 295	<i>New versatile polydopamine coated functionalized magnetic nanoparticles</i> Radoslaw Mrówczyński, Rodica Turcu, Cristian Leostean, Holger A. Scheidt, Jürgen Liebscher
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19	<i>Physical Chemistry Chemical Physics</i> 15, 7161 – 7173 (2013)	M. Micciarelli, C. Altucci, R. Velotta, <u>V. Tosa</u> , A. B. González Pérez, M. Pérez Rodríguez, Á. R. de Lera, <u>A. Bende</u> <i>Low-lying excited-states of 5-benzyluracil</i>
20	<i>Langmuir</i> 29(33), 10539–10548 (2013)	J. Liebscher, R. Mrówczyński, H. A. Scheidt, C. Filip, N. D. Hadade, R. Turcu, <u>A. Bende</u> , S. Beck <i>The Structure of Polydopamine - a Never Ending Story?</i>
21	<i>Journal of Physical Chemistry A</i> 117(36) 8497-8505 (2013)	A. Csehi, <u>A. Bende</u> , G. J. Halász, A. Vibók, A. Das, D. Mukhopadhyay, S. Mukherjee, S. Adhikarie, M. Baer <i>Dressed Adiabatic and Diabatic Potentials for the Renner-Teller/ Jahn-Teller F+H<sub>2</sub> System</i>
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23	<i>OPTICS EXPRESS</i> 21 24992	Ebrahim Karimi, Carlo Altucci, <u>Valer Tosa</u> , Raffaele Velotta, and Lorenzo Marrucci <i>Influence of generalized focusing of few-cycle Gaussian pulses in attosecond pulse generation</i>
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26	IEEE Microwave Magazine vol.14, no.4, pp.124,130, June 2013	<i>Low cost microwave power generator for scientific and medical use;</i> <a href="http://dx.doi.org/10.1109/MMM.2013.2248651">http://dx.doi.org/10.1109/MMM.2013.2248651</a> , V.Surducan, E.Surducan
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31	American Institute of Physics, Conf. Proc 1565, pp. 304-307 (2013),	<i>Measurements of stable isotope ratios in milk samples from a farm placed in the mountains of Transylvania</i> , D.A. Magdas, G. Cristea, D.V. Codrea, A. Bot, R. Puscas, S. Radu, V. Mirel, M. Mihaiu
32	Journal of Alloys and Compound, 551, 300, (2013)	<i>Spin dynamics evidenced by EPR in Sn1-xMnxO2 nanoparticles annealed at different temperatures</i> A. Popa, D.Toloman, O.Raita, M.Stan, B.S. Vasile, C.Leostean, L.M.Giurgiu

Nr crt	Denumirea publicatiei	Titlul articolului	2014
	In tara: 3		
1	<i>Not Bot Horti Agrobo</i> , 2014, 42(2):X-X. DOI:123456789	<i>Minor Volatile Compounds in Traditional Homemade Fruit Brandies from Transylvania-Romania, as Determined by GC-MS Analysis</i> Teodora Emilia COLDEA, Carmen SOCACIU, Zaharie MOLDOVAN, Elena MUDURA	
2	Romanian Journal of Physics, 59, 3-4, 355-359 (2014)	<i>The use of isotope ratios in commercial fruit juices authentication</i> D.A. Magdas, G. Cristea, R. Puscas, F. Tusa	
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2	Optical Materials 37 (2014) 223–228	<i>Luminescent properties of vanadium-doped SnO2 nanoparticles</i> D. Toloman, A. Popa, O. Raita, M. Stan, R. Suciuc, M.O. Miclaus, A.R. Biris	
3	Journal of Alloys and Compounds 591 (2014) 201–206	<i>Ferromagnetic behaviour of vanadium doped SnO<sub>2</sub> nanoparticles annealed at different temperatures</i> A. Popa, D. Toloman, O. Raita, M. Stan, O. Pana, T.D. Silipas, L.M. Giurgiu	
4	<i>Analytical Letters</i> , 47: 1683–1696, 2014	<i>Determination of theVolatileComponents of Apple Juice Using Solid Phase Microextraction and GasChromatography–Mass Spectrometry</i> Gabriella R. Schmutzer , Alina D. Magdas , Leontin I. David b & Zaharie Moldovan	
5	<i>Analytical Letters</i> 48(7),2015,1099-1116	<i>Characterization of some romanian wines based on volatile compounds determinated by GC/MS</i> Veronica Avram, Gabriella Schmutzer, Anamaria Hosu, Claudia	



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6	Analytical Letters, 49(3), 364-377 (2016)	<i>Determination of Isotopic Ratios and Metal Concentrations in Nicotiana tabacum (Tobacco)"</i> Z. BALAZS, D. RISTOIU, D.A. MAGDAS, G. CRISTEA, A. DEHELEAN, C. VOICA, R. PUSCAS, A. PIRNAU, R. STELIAN and M. VADAN
7	J. Therm. Analysis Calor., 119(1), 301-308 (2015)	<i>Complementary photothermal techniques for complete thermal characterization of porous or semi-transparent solids</i> Autori: D. Dadarlat, M. Streza, O. Onija, K. Strzalkowski, C. Prejmerean, L. Silaghi-Dumitrescu, N. Cobirzan
8	J. Therm. Analysis Calor., 119(1), 319-327 (2015)	<i>Thermal characterization of II-VI binary crystals by photopyroelectric calorimetry and infrared lock-in thermography</i> Autori: K. Strzalkowski, M. Streza, D. Dadarlat, A. Marasek
9	J. Therm. Analysis Calor. 118, 623-630 (2014)	<i>Preparation of a new type of giomers and their thermal characterization by photopyroelectric calorimetry. Comparison with commercially available materials</i> Autori: L. Silaghi-Dumitrescu, D. Dadarlat, M. Streza, T. Buruiana, D. Prodan, I. Hodisan and C. Prejmerean
10	J. Adv. Thermal Science Research, 1, 9- 14 (2014)	<i>Contact Photothermal Techniques for Thermal Characterization of Liquids</i> Autor: D. Dadarlat
11	Applied Surface Science 288 (2014) 166–171	<i>The effect of substrate temperature on structural and morphological properties of Au/Si(1 1 1) thin films,</i> Autori: Daniel Marconi, Alia Ungurean
12	Analytical Letters, 49(3), 378-386 (2016)	<i>Fabrication of interdigitated electrodes using molecular beam epitaxy and optical lithography techniques and its applications for molecular detection</i> Autori: Alia Colniță, Daniel Marconi, Ioan Turcu
13	Analytical Letters, 49(3), 400-410 (2016)	<i>The influence of deposition rate on structural and morphological properties of Au/Si(111) growth using molecular beam epitaxy method</i> Autori: Daniel Marconi, Alia Colniță, Ioan Turcu
14	Solid State Nuclear Magnetic Resonance, 65, 21-28 (2015)	<i>„Can the conformation of flexible hydroxyl groups be constrained by simple NMR crystallography approaches? The case of the quercetin solid forms”, - in</i> Autori: X. Filip, C. Filip
15	Physics Letters A, 378, 2157 (2014).	<i>Influence of the sequence on the ab initio band structures of single and double stranded DNA models</i> Autori: F. Bogár, A. Bende, J. Ladik,
16	International Journal of Quantum Chemistry, 114(18), 1229 (2014).	<i>Quantum Molecular Biological Investigation of the Onset of Cancer</i> Autori: J. Ladik, A. Bende,
17	Analytical Letters 47, 4, 641-653 (2014)	<i>Isotopic Oxygen Ratios and Trace Metal Determination in Some Romanian Commercial Wines</i> V. Avram, D.A.Magdas, C. Voica, G. Cristea, C. Cimpoiu, A. Hosu, C. Marutoiu
18	Holocene, 24, 1, 15-23 (2014)	<i>Carbon isotope composition as indicator for climatic changes during the middle and late Holocene in a peat bog from Maramures Mountains (Romania),</i> G. Cristea, S. M. Cuna, S. Farcas, I. Tantau, E. Dordai, D. A. Magdas
19	Chemical Engineering Journal, 251 (2014) 310- 318	<i>Effect of Pd and Rh promotion on Ni/Al<sub>2</sub>O<sub>3</sub> for NO reduction by hydrogen for stationary applications,</i> Maria Mihet, Mihaela D. Lazar

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21	JOURNAL OF APPLIED PHYSICS 116, 114312 (2014)	<i>Synthesis and characterization of Fe<sub>3</sub>O<sub>4</sub>-TiO<sub>2</sub> core-shell nanoparticles</i> M. Stefan, O. Pana, C. Leostean, C. Bele, D. Silipas, M. Senila, E. Gautron,
22	METALS AND MATERIALS INTERNATIONAL, 20(4), 641(2014)	<i>Heat treatment influence on the structural properties of supported Ni nanoclusters</i> V. Rednic, N. Aldea, P. Marginean, M. Rada, A. Bot, Z. Wu, Z. Jing, F. Matei,
23	SOFT MATTER, 11, 1008-1018 (2015)	<i>Magnetic microgels, a promising candidate for enhanced magnetic adsorbent particles in bioseparation: synthesis, physico-chemical characterization and separation performance</i> R. Turcu, V. M. Socoliuc, I. Craciunescu, A. Petran, A. Paulus, M. Franzreb, E. Vasile and L. Vekas
24	<i>Int. J. Hydrogen Energ</i> 2014, 39(30), 17040-17046.	<i>, Hydrogen cryo-adsorption by hexagonal prism monoliths of MIL-101,</i> G. Blăniță, I. Coldea, I. Misan, D. Lupu
25	<i>RSC Advances</i> 2014, 4, 2648-2651	<i>Experimental assessment of physical upper limit for hydrogen storage capacity at 20 K in densified MIL-101 monoliths,</i> H. Oh, G. Blăniță, D. Lupu, M. Hirscher

Nr.	Denumirea publicatiei	Titlul articolului	2015
	In tara: 3		
1	REV. CHIM. (Bucharest) 66 No. 2 2015	<i>Compatibility Study of Ibuprofen with Some Excipients Employed for Solid Dosage Forms,</i> Felicia Dragan, Irina Kacso, Simina Dreve, Flavia Martin, Gheorghe Borodi, Ioan Bratu, Kamel Earar	
2	Risoprint, ISSN 2066-4125, ISSN-L 2066-4125	<i>, Producerea de hidrogen din resurse regenerabile - unul din pilonii principali ai unei economii bazate pe energia hidrogenului</i> D. Iazar, M. Dan, M. Mihet	
3	FARMACIA, Vol. 63, 2, 171 (2015)	<i>Synthesis of some new 4-methyl-2-(4-pyridyl)-thiazole-5-yl-azoles as potential antimicrobial agents"</i> Smaranda Oniga, Mihaela Duma, Ovidiu Oniga, Brindusa Tiperciuc, Adrian Pirnau, Catalin Araniciu, Mariana Palage	
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1	<i>Journal of Inorganic Chemistry</i> , 19(2), s848-s849, 2014, IF: 3.164.	<i>Hemoglobin and hemerythrin based blood substitutes,</i> Florina V. Scurtu, Denisa Hathazi, Augustin C. Mot, Anetta Vaida, Eva Fischer-Fodor, Grigore Damian, Donald M. Kurtz, Vlad Toma, Anca Farcas, Ioana Roman, Radu L. Silaghi-Dumitrescu	
2	<i>PloS One</i> , 2015, in press	<i>Comparative in vivo effects oh hemoglobin-based oxygen carriers (HBOC) with varying prooxidant and physiological reactivity</i> Vlad Al. Toma, Anca D. Farcas, Ioana Roman, Bogdan Sevastre, Denisa	

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3	Analytical Letters, 49(3), 364-377 (2016)	<i>Determination of Isotopic Ratios and Metal Concentrations in Nicotiana tabacum (Tobacco)</i> , autori Z. Balazs, D. Ristoiu, D. A. Magdas, G. Cristea, A. Dehelean, C. Voica, R. Puscas, A. Pirnau, I. Feher, S. Radu, M. Vadan
4	acceptat spre publicare in Analytical Letters, Proceedings PIM 2015	<i>Low-cost adsorbent materials derived from coffee waste for wastewater decontamination</i> , autori O Marincaș, V Avram, I Feher, D Lazăr, C Voica și I Grosu
5	PhysChemChemPhys inn pres ID: CP-ART- 10-2015-005964	<i>NMR study and computational assays of meclofenamic Na salt and <math>\beta</math>-cyclodextrin inclusion complex</i> , Luiza Buimaga-Iarinca, Mircea Bogdan, Adrian Parnau, Calin Floare
6	Phys. Rev. B 92, 054431, 2015	<i>Transmission through correlated <math>Cu_nCoCu_n</math> heterostructures</i> L. Chioncel, C. Morari, A. Östlin, W. H. Appelt, A. Droghetti, M. M. Radonjić, I. Rungger, L. Vitos, U. Eckern, and A. V. Postnikov Phys. Rev. B 92, 054431, 2015
7	IEEE Proceedings, Acceptat spre publicare	<i>Electric generator driven by parabolic solar concentrator</i> , autori: Bogdan Belean, Sergiu Pogacian, Adrian Bot, Grid Cloud and High Performance Computing in Science RO-LCG, 28-30 Octombrie 2015, Cluj Napoca,
8	International Journal of Advanced Computer Sciece and Engineering , Volume 6 Issue 7, pp. 20-27, 2015	<i>FSL-based Hardware Implementation for Parallel Computation of cDNA Microarray Image Segmentation</i> , autori, Bogdan Bot, Simina Emerich, Sorin Martoiu, Bogdan Belean,
9	BMC Bionformatics, 16(1), 412 (2015)	<i>Unsupervised Image Segmentation for Microarray Spots with Irregular Contours and Inner Holes</i> , autori: Bogdan Belean, Monica Borda, Joerg Ackermann, Ina Koch, Ovidiu Balacescu
10	Journal of Pharmaceutical Sciences, 104, 3782- 3788 (2015)	<i>„Crystal Structure and Desolvation Behaviour of the Tadalafil Monosolvates with Acetone and Methyl Ethyl Ketone”</i> , Maria O. Miclăuș, Irina E. Kacso, Flavia A. Martin, Leontin David, Mihaela M. Pop, Claudiu Filip, Xenia Filip
11	Journal of Inclusion Phenomena and Macrocyclic Chemistry, Vol. 83, Issue 3, 257- 265 (2015) DOI 10.1007/s10847- 015-0561-4	<i>“Molecular interaction of <math>\beta</math>-CD with 3-carboxy-1-[(2-phenyl-1,3-thiazol-4-yl) methyl]pyridin-1-ium iodide analyzed by isothermal titration calorimetry and NMR spectroscopy”</i> Mihaela Mic, Adrian Pirnau, Silvia Neamtu, Mariana Palage, Mircea Bogdan
12	Journal of Quantitative Spectroscopy & Radiative Transfer, 162, 207-212, (2015)	<i>„Dynamics of laser excited colloidal gold nanoparticles functionalized with cysteine derivatives”</i> A. Falamas, N. Tosa, V. Tosa
13	Soft Matter, 11 (2015) 1008	<i>Magnetic microgels, a promising candidate for enhanced magnetic adsorbent particles in bioseparation: synthesis, physicochemical characterization, and separation performance</i> , Autori: Rodica Turcu, Vlad Socoliuc, Izabell Craciunescu, Anca Petran, Anja Paulus, Mathias Franzreb, Eugeniu Vasile, Ladislau Vekas
14	Journal of Magnetism and Magnetic Materials 380, 307–314 (2015)	<a href="#"><i>Magnetic microgels for drug targeting applications: Physical–chemical properties and cytotoxicity evaluation</i></a> Autori: R Turcu, I Craciunescu, VM Garamus, C Janko, S Lyer, R

		Tietze, Christoph Alexiou, Ladislau Vekas
15	Journal of Materials Science 50 (2015) 6075–6086	<i>A valence states approach for luminescence enhancement by low dopant concentration in Eu-doped ZnO nanoparticles</i> Autori: A. Mesaros, D. Toloman, M. Nasui, R. B. Mos, T. Petrisor, B. S. Vasile, V. A. Surdu, I. Perhaita, A. Biris, O. Pana
16	Materials Science in Semiconductor Processing, 39 (2015) 23–29	<i>Enhanced photocatalytic degradation properties of zinc oxide nanoparticles synthesized by using plant extracts</i> Autori: M. Stan, A. Popa, D. Toloman, A. Dehelean, I. Lung, G. Katona
17	Electrochimica Acta 154, (2015) 197-204 (FI 4.504)	<i>The influence of uric and ascorbic acid on the electrochemical detection of dopamine using graphene-modified electrodes</i> S. Pruneanu, A.R. Biris, F. Pogacean, C. Socaci, M. Coros, M. C. Rosu, F. Watanabe, A.S. Biris
18	Journal of Alloys and Compounds, 646, 859-865(2015)	<i>The influence of milling and annealing conditions on the structural and magnetic behavior of Nd<sub>2</sub>Fe<sub>14</sub>B/<math>\alpha</math>-Fe hard/soft magnetic nanocomposites</i> S. Gutoiu, O. Isnard, I. Chicinaș, F. Popa, A. Takacs, V. Pop
19	J. Radioanal. Nucl. Chem. (2015) 305, 623 – 630	<i>Kinetic and thermodynamic studies of U(VI) adsorption using Dowex-Marathon Resin</i> Marcu Cristina, Axente Damian, Balla Ancuța
20	J. Radioanal. Nucl. Chem. 1-7 (2015) DOI 10. 1007/s10967-015-4273-4	<i>Study of Fe(III) adsorption onto Dowex-Marathon Resin, as a rate determining stage of the U(IV) oxidation in <sup>235</sup>U enrichment column.</i> Marcu Cristina, Axente Damian, Balla Ancuța
21	SUPRAMOLECULAR CHEMISTRY, 27(1-2), 52 – 58 (2015)	“Synthesis, structure, electrochemical behaviour and electrochemical investigations on the assembling with pyrene of a novel C3 cryptand”  A. Woiczehowski-Pop, D. Gligor, A. Bende, C. Varodi, E. Bogdan, A. Terec, I. Grosu
22	CHEMICAL PHYSICS, 457, 152–159 (2015).	“Theoretical investigation of polymer chain stability in the metal coordinated azorubine and cyclam complex”, M. Vlassa and A. Bende
23	CHEMPHYSICHEM, 16(14), 3021 – 3029 (2015)	“Inception of acetic acid-water cluster growth in molecular beams”, A. Bende, G. Perretta, P. Sementa, T. M. Di Palma
24	Journal of Non-Crystalline Solids, 428 (2015) Pages 151–155	<i>Study on the effect of vanadium oxide in calcium phosphate glasses by Raman, IR and UV–vis spectroscopy</i> , D. A. Magdas, N. S. Vedeanu
25	Journal of Magnetism and Magnetic Materials 381(2015)131–137	EPR and magnetic characterization of Fe <sub>2</sub> O <sub>3</sub> –TeO <sub>2</sub> and CuO–TeO <sub>2</sub> glasses obtained by melt quenching and sol–gel processes, A. Dehelean, A. Popa, S. Rada, E. Culea
26	Journal of Chemistry, Volume 2015, Article ID 192032	<i>Metal Content and Stable Isotope Determination in Some Commercial Beers from Romanian Markets</i> , C. Voica, D.A. Magdas, I. Feher
27	Analytical Letters 48(7), 2015, 1099-1116.	<i>Characterization of Romanian Wines by Gas Chromatography – Mass Spectrometry</i> , V. Avram, C. G. Floare, A. Hosu, C. Cimpoiu, C. Marutoiu and Z. Moldovan
28	Proc. SPIE 9258, Advanced Topics in Optoelectronics, Microelectronics, and	<i>Thermoelectrics (TE) used as detectors of radiation. An alternative calorimetry based on the photothermoelectric (PTE) effect.</i> D. Dadarlat, P. R. N. Misse, A. Maignan, E. Guilmeau, M. Depriester, M. Kuriakose, A. Hadj Sahraoui

	Nanotechnologies VII, 92582R (February 21, 2015)	
29	Thermochimica Acta, 624, 21–26 (2016)	<i>Photothermoelectric (PTE) Detection of Phase Transitions. Application to Triglycinesulphate (TGS)</i> D. Dadarlat, C. Tudoran, V. Surducan, C. Bourgès, P. Lemoine, E. Guilmeau
30	International Journal of Engineering & Technology, 4 (1) (2015) 90-96	<i>Easily usable human device interface for microwave therapy apparatus</i> V. Surducan, E. Surducan, C. Neamtu, D. Dadarlat, R. Ciupa
31	International Journal of Engineering & Technology, 4(1) (2015) 78-89	<i>Smart metering application for power efficiency studies</i> C. Tudoran, S. Albert, D. Dadarlat, S. Anghel
32	<i>Materials and Corrosion</i> , Volume 66, Issue 7, (2015), 635–642	<i>Corrosion behavior of TiO<sub>2</sub>-coated Ti–6Al–7Nb surfaces obtained by anodic oxidation in sulfuric or acetic acid</i> , N. Cotolan, A. Pop, D. Marconi, O. Ponta and L. M. Muresan
33	Analytical Letters, 49(3), 378-386 (2016)	<i>Fabrication of Interdigitated Electrodes Using Molecular Beam Epitaxy and Optical Lithography</i> , Alia Colniță, Daniel Marconi & Ioan Turcu
34	Analytical Letters, 49(3), 400-410 (2016)	<i>The Influence of Deposition Rate on the Structure and Morphology of Gold/Silicon(111) Growth by Molecular Beam Epitaxy</i> , Daniel Marconi, Alia Colniță & Ioan Turcu
35	J. Heterocyclic Chem., 52, 999 (2015)	<i>Synthesis and Antimicrobial Evaluation of Some New 4,5'-Bisthiazoles</i> Tibor Rozsa, Mihaela Duma, Laurian Vlase, Ioana Ionuț, Adrian Pirnau, Brindusa Tiperciuc, Ovidiu Oniga
37	Journal of Magnetism and magnetic Materials (J. Magn. Magn. Mater.) 394, 111–116(2015)	<i>“Structural and magnetic properties of Co<sub>x</sub>Fe<sub>3-x</sub>O<sub>4</sub> versus Co/Fe molar ratio”</i> T. Dippong, E. A. Levei, L. Diamandescu, I. Bibicu, C. Leostean, G. Borodi, L. Barbu Tudoran,
38	Ceramics International Part: A 41,13179-13188(2015)	<i>“Influence of vinyltriethoxysilane concentration on structural and luminescent characteristics of cerium doped yttrium based silicate phosphors”</i> L. E. Muresan, A. I.Cadis, I. Perhaita, O. Ponta, O. Pana, L. Trinkler, B. Berzina, V. Korsaks
39	Journal of Molecular Structure 1101, 170-175(2015)	<i>“An FTIR and ESR study of iron doped calcium borophosphate glass ceramics”</i> M. Karabulut, A. Popa, G. Borodi, R. Stefan
40	Applied Surface Science 352, 109–116(2015)	<i>“Structural characterization of copolymer embedded magnetic nanoparticles”</i> G.G. Nedelcu, A. Nastro, L. Filippelli, M. Cazacu, M. Iacob, C. Oliviero Rossi, A. Popa, D. Toloman, M. Dobromir, F. Iacomì
41	Journal of Analytical and Applied Pyrolysis 116, 96–101(2015)	<i>“Insights into the europium-doped yttrium oxalate thermaldecomposition mechanism”</i> A. Mesaros, R.B. Mos, M. Nasui, T. Petrisor Jr., D. Toloman, O.R. Vasile, F. Goga, L. Ciontea, T. Petrisor

42	AIP Conf. Proc., 1700, 060006 (2015)	<i>“Optical and Electron Paramagnetic Resonance Studies of Cr Doped Ga<sub>2</sub>O<sub>3</sub> Nanoparticles”</i> A.Popa, D. Toloman, M. Stan, D. Silipas, A. Biris
43	AIP Conf. Proc., 1700, 060005 (2015)	<i>“Identification of different iron sites in <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> nanoparticles by spectroscopic methods”</i> , D. Toloman, A. Popa, M. Stan, T.D. Silipas, A. Biris

**Total articole publicate in tara: 43 (din care 24 ISI)**

**Total articole publicate in strainatate 234 (din care 232 ISI)**

#### 4.5. Carti publicate:

Nr crt	Titlul cărții	Editura	Autor principal
<b>In tara:1</b>			
1	“Chitosanul – Proprietati si aplicatii in medicina inovativa, ISBN 978-973-133-553-7,	Editura “Casa Cartii de Stiinta”, Cluj-Napoca, 2009, 143 pg.;	Simina-Virginia Dreve
<b>In strainatate: 12 (capitole carti)</b>			
1	„ Recent Development of Photopyroelectric Calorimetry of Liquids” CAPITOL CARTE in “Thermal wave physics and related photothermal techniques: Basic principles and recent developments”	ed. Ernesto Morales Marin, Edit. Research Signpost – 2009- in curs de aparitie	D. Dadarlat, C. Neamtu
2	<i>Quasi-ballistic Light Scattering on Particulate Media</i> , in <b>Progress in</b>	<b>Nova Science Publishers, Inc. New York, ISBN: 978-1-</b>	Ioan Turcu

	<b>Optics Research</b> , ed. Maximilian N. Schulz,	60456-110-4 (April 15, 2009)	
3	capitol carte : Characterization of Ferroelectric Materials by Photopyroelectric Method In : “Ferroelectrics-Characterization and Modeling”,	Editor: M. Lallart, editura INTECH,	D. Dadarlat
4	Novel Approach and Their Applications in Risk Assessment Titlul capitolului: Non-invasive matrices use in pollution evaluation at nanoscale levels – a way forward in ecotoxicological studies	Editura InTech (Croatia), ISBN: 978-953-51-0519-0, DOI: 10.5772/37683, pp. 168-184, 2012	Autor principal carte: Yuzhou Luo  Autori capitol: M. H. Kovacs, D. Ristoiu, Voica Cezara
5	Diamond and Related Nanostructures, Chapter 6, pp. 107-119, (2013) <u>A. Bende</u> , M. V. Diudea: Energetics of Multi-shell Cages	Springer Netherlands	M. V. Diudea si A. Bende
6	Upscaling of bio-nano-processes, Springer (2014) pp.57-76	Springer	<b>R. Turcu</b> , I. Craciunescu, A. Nanin: H. Nirschl, K. Keller (Eds),
7	Image Analysis and Coding Based on Ordinal Data Representation (book chapter accepted – under print)	Springer Verlag	Simina Emerich, Eugen Lupu, Bogdan Belean
8	Exotic allotropes of carbon In: Exotic Properties of Carbon Nanomatter, Edited by: M. V. Putz, O. Ori, Book	Springer: Dordrecht, The Netherlands, ISBN: 978-94-017-9566-8	M. V. Diudea, B. Szeffler, Cs. L. Nagy, A. Bende

	Series: Carbon Materials: Chemistry and Physics, Vol. 8, Page: 185 – 201 Springer: Dordrecht, The Netherlands, ISBN: 978-94-017-9566-8 (2015)		
9	Modeling Laser-Induced Molecule Excitations Using Real-Time, Time-Dependent Density Functional Theory In: Annual Reports in Computational Chemistry, Edited by: D. A. Dixon, Vol. 11, Page: 103 – 146, 2015	Elsevier Science, ISBN: 978-0-444-63710-9	A. Bende
10	Image Analysis and Coding Based on Ordinal Data Representation (book chapter accepted – under print)	Springer Verlag	Simina Emerich, Eugen Lupu, Bogdan Belean
11	Exotic allotropes of carbon In: Exotic Properties of Carbon Nanomatter, Edited by: M. V. Putz, O. Ori, Book Series: Carbon Materials: Chemistry and Physics, Vol. 8, Page: 185 – 201 Springer: Dordrecht, The Netherlands, ISBN: 978-94-017-9566-8 (2015)	Springer: Dordrecht, The Netherlands, ISBN: 978-94-017-9566-8	M. V. Diudea, B. Szeffler, Cs. L. Nagy, A. Bende
12	Modeling Laser-Induced Molecule Excitations Using Real-Time, Time-Dependent Density Functional Theory In: Annual Reports in	Elsevier Science, ISBN: 978-0-444-63710-9	A. Bende



Computational Chemistry, Edited by: D. A. Dixon, Vol. 11, Page: 103 – 146, 2015		
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#### 4.6. Manifestari stiintifice:

Manifestari stiintifice	Numar de manifestari	Numar de comunicari
a)congrese internationale	71	119
b) simpozioane	22	30
c) seminarii, conferinte	105	171
d) workshop	22	30

#### 4.7. Brevete rezultate din activitatea de cercetare:

Specificatie	Brevete inregistrate (nr.)	Reвете acordate (nr)	Brevete vandute (nr.)
-in tara:	4	1	
In strainatate:	1	1	
<b>Total:</b>	<b>5</b>	<b>2</b>	

Brevete inregistrate in tara:

1. Metoda și traductor pentru măsurarea temperaturii în procesările efectuate în câmp de microunde de putere, SURDUCAN VASILE, SURDUCAN EMANOIL
2. Procedeu de micro/nano-structurare și autoasamblare simultană de chitosan și substanțe active antiinflamatoare, SIMINA DREVE, LILIANA OLENIC, IRINA KACSO, IOAN BRATU
3. Instalatie de incalzire cu microunde, Surducan Emanoil, Surducan Vasile, Neamtu Camelia
4. Bloc de stabilizare și control destinat alimentării curentului de filament al magnetronelor, Surducan Vasile, Surducan Emanoil

Brevete inregistrate in strainatate:

1. “Microwave heating device” (Dispozitiv de încălzire cu microunde)  
PCT/EP2015/061177/2015, 20.05.2015.

Brevete acordate:

1. Procedeu și instalatie pentru stimularea dezvoltării plantelor în câmp de microunde. Surducan Emanoil, Surducan Vasile – RO 125 068

2.Apparatus and methods for synthesis of large size batches of carbon nanostructures, BIRIS AL. SORIN, BIRIS AL. RADU, LUPU DAN, WILKES JON GARTNER, BUZATU DAN ALEXANDER, MILLER DWIGHT WAYNE, DARSEY JERRY A. - USP 7 473 873

## **5. Aprecieri asupra derularii si propuneri**

In cadrul acestui program au fost derulate teme de cercetare care au deschis noi directii de perspectiva in domeniul izotopilor stabili si fizicii moleculare cu aplicatii in mediu, sanatate, agricultura, energii alternative si hidrologie.

In cadrul proiectelor derulate in cadrul programului Nucleu "Procese Izotopice si Moleculare" al institutului au fost dezvoltate activitati ce constituie noi **directii de cercetare** evidentiate prin:

- reactii de oxido-reducere catalizate, cu aplicatii in depoluare;
- metode izotopice noi in domeniul securitatii si calitatii alimentelor si bauturilor;
- recuperarea energiei din vibratiile parazite ale infrastructurii rutiere si feroviare;
- calorimetrie fotopiroelectrica de inalta rezolutie pentru studiul unor materiale compozite;
- aplicatii ale sistemelor nanostructurate in depoluare, cataliza si stocarea de informatie de ultra inalta densitate:

In continuare institutul este angajat intr-un efort sustinut pentru aplicarea in economie a rezultatelor obtinute sub forma de servicii, transfer de tehnologii sau cunostiinte, inovarea de produse sau procese.

**DIRECTOR GENERAL, DIRECTOR DE PROGRAM, DIRECTOR ECONOMIC,**

**Dr. ing. Adrian Bot**

**Dr.ing. Viorel Cosma**

**Dr.ec. Diana Nicoara**