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**Nr. 1544 Data: 19.12.2007**

**RAPORT DE AUTOEVALUARE**  
**perioada 2003-2007**

1. Datele de autentificare ale unității de cercetare-dezvoltare

1.1. Denumirea: Institutul de Mecanica Solidelor

1.2. Statutul juridic\*1): Institut de cercetare bugetar cu persoanalitate juridică al Academiei Române

1.3. Actul de înființare\*2): Hotărâre de Guvern nr. 633/29.05.1990

1.4. Numărul de înregistrare în Registrul potențialilor contractori: 2686

1.5. Director general/Director: Dr. Tudor Sireteanu

1.6. Adresa: Str. C-tin Mille nr. 15, PO Box 1- ,Sector 1, București 010141

1.7. Telefon, fax, pagina web, e-mail: tel-fax 3126736, [www.imsar.ro](http://www.imsar.ro), [siret@imsar.bu.edu.ro](mailto:siret@imsar.bu.edu.ro)

2. Domeniul de specialitate

2.1. Conform clasificării UNESCO\*3): 2205.09

2.2. Conform clasificării CAEN: 7310

3. Starea unității de cercetare-dezvoltare

3.1. Misiunea unității de cercetare-dezvoltare, direcțiile de cercetare, dezvoltare, inovare: (maximum 1.000 de caractere):

Institutul de Mecanica Solidelor are o tradiție și o prezență activă de peste 50 de ani în știința românească, avându-și originea în “Institutul de Mecanica Aplicata Traian Vuia” înființat în 1949 sub egida Academiei Române. Misiunea institutului constă în realizarea de cercetări științifice fundamentale și avansate in domeniul mecanicii solidelor, contribuind prin aceasta la dezvoltarea cunoașterii, la creșterea vizibilității științei românești și la influențarea în sens pozitiv a evoluției societății românești.

Principalele direcții de cercetare ale institutului sunt:

- Controlul sistemelor dinamice prin strategii bazate pe metode de inteligența artificială;
- Studiul proprietăților mecanice ale materialelor compozite și ale materialelor inteligente;

- Tribologia materialelor clasice si neconventionale;
- Metode ultrasonice de imbunătățire a testării și evaluării nedistructive;
- Biomecanică si nanomecanică;
- Metode și strategii în robotică si mecatronică;
- Mecanică computațională.

3.2. Modul de valorificare a rezultatelor de cercetare, dezvoltare, inovare și gradul de recunoaștere a acestora (maximum 1.000 de caractere):

In principal, valorificarea rezultatelor activității de cercetare a institutului se realizează prin:

- Diseminarea rezultatelor cercetărilor prin publicații si participarea la manifestări științifice;
- Obținerea de brevete de invenție;
- Acordarea de consultanță științifică și tehnică în cadrul unor contracte de cercetare cu agenți economici;
- Proiectarea, realizarea fizică sau testarea unor produse, dispozitive sau instalații, având la bază “know-how”-ul acumulat prin cercetările efectuate de institut;

Recunoașterea rezultatelor activității de cercetare științifică a institutului se materializează prin:

- Premii ale Academiei Române pentru lucrări științifice elaborate de cercetători din IMS;
- Invenții premiate la saloane internaționale;
- Colaborări științifice internaționale;
- Apartenența unor cercetători din institut la colectivele editoriale ale unor publicații științifice sau la asociații profesionale prestigioase;
- Institutul are dreptul de conducere de doctorat;
- Desfașurarea de activități didactice în învățământul superior de către cercetători din institut;
- Câștigarea in fiecare an, prin competiție, a unui număr semnificativ de proiecte de cercetare la care institutul este coordonator sau partener.

3.3. Situația financiară - datorii la bugetul de stat:

Institutul nu are datorii la bugetul de stat.

Se anexează:

- Bilanțul contabil la 31.12.2006
- Balanța sintetică si analitică la 30.09. 2007

<b>4. Criterii primare de performanță</b>		Punctaj
4.1. Lucrări științifice/tehnice publicate în reviste de specialitate cotate ISI		
4.1.1. Număr de lucrări științifice ( <b>Anexa 4.1</b> )	42x30	1260
4.1.2. Punctaj cumulativ ISI ( <b>Anexa 4.1</b> )	27x 5	135
4.1.3. Număr de citări în reviste de specialitate cotate ISI ( <b>Anexa 4.1</b> )	35x 5	175
<b>Total punctaj cap. 4.1</b>		<b>1570</b>
4.2. Brevete de invenție		
4.2.1. Număr de brevete ( <b>Anexa 4.2</b> )	7x30	210
4.2.2. Număr de citări de brevete în sistemul ISI		
<b>Total punctaj cap. 4.2</b>		<b>210</b>
4.3. Produse și tehnologii rezultate din activități de cercetare, bazate pe brevete, omologări sau inovații proprii. Studii prospective și tehnologice și servicii rezultate din activitatea de cercetare-dezvoltare, comandate de beneficiar		
4.3.1. Număr de produse, tehnologii, studii, servicii ( <b>Anexa 4.3</b> )	5x20	100
<b>Total punctaj cap. 4.3</b>		<b>100</b>
<b>Total punctaj cap.4</b>		<b>1880</b>
<b>5. Criterii secundare de performanță</b>		
5.1. Lucrări științifice (tehnice) publicate în reviste de specialitate fără cotație ISI		
5.1.1. Număr de lucrări ( <b>Anexa 5.1</b> )	108x 5	540
5.2. Lucrări științifice prezentate la conferințe internaționale cu comitet de program		
5.2.1. Număr de comunicări prezentate ( <b>Anexa 5.2</b> )	286x 5	1430
5.3. Modele fizice, modele experimentale, modele funcționale, prototipuri, normative, proceduri, metodologii, reglementări și planuri tehnice noi sau perfecționate, realizate în cadrul programelor naționale sau comandate de beneficiar		-
5.3.1. Număr de modele, normative, proceduri etc. ( <b>Anexa 5.3</b> )	6x5	30
<b>Total punctaj cap. 5</b>		<b>2000</b>
<b>6. Prestigiul profesional</b>		
6.1. Membri (incluzând statutul de recenzor) în colectivele de redacție ale unor reviste (cotate ISI sau incluse în baze de date internaționale) sau în colective editoriale ale unor edituri internaționale recunoscute		-
Număr de prezențe în perioada pentru care se face evaluarea		
6.2. Membri în colectivele de redacție ale revistelor recunoscute național (din categoria B în clasificarea CNCSIS)		
Număr de prezențe	4 x 10	40
1.Tudor Sireteanu-Rev. Roum. Sci. Tech.-Mec.Appl./Ed. Acad. Ro.		
2.Veturia Chiroiu-Rev. Roum. Sci. Tech.-Mec.Appl./Ed. Acad. Ro.		

3. Dinu Bratosin-Rev. Roum. Sci. Tech.-Mec.Appl./Ed. Acad. Ro.		
4. Dinu Bratosin-Proc. Ro. Acad. Series A /Ed. Acad. Ro.		
6.3. Premii internaționale obținute printr-un proces de selecție Număr de premii ( <b>Anexa 6.3</b> )	2x 20	40
6.4. Premii naționale ale Academiei Române Număr de premii 1.Ligia Munteanu-Premiul <i>Traian Vuia</i> al Academiei Romane-2004	1x 20	20
6.5. Conducători de doctorat, membri ai unității de cercetare Număr de conducători de doctorat 1.Tudor Sireteanu 2. Veturia Chiroiu 3. Lucian Capitanu 4. Ivan Iliuc 5. Dinu Bratosin	5 x 10	50
6.6. Număr de doctori în știință, membri ai unității de cercetare Număr de doctori în știință	22 x 10	220
<b>Total punctaj cap. 6</b>		<b>370</b>
<b>Total punctaj cap. 4+5+6</b>		<b>4250</b>
7. Venituri realizate prin contracte de cercetare în domeniul pentru care se face evaluarea (în perioada pentru care se face evaluarea)		
7.1. Numărul și valoarea contractelor de cercetare internaționale finanțate din fonduri publice ( <b>Anexa 7.1</b> ) 2003: Grant Royal Society: 1/5700 EUR Grant Institutul Suedez: 1/19250 EUR 2004: Grant Royal Society: 1/4690 EUR Grant Institutul Suedez: 1/22000 EUR 2005: Grant Royal Society: 1/7140 EUR Grant Institutul Suedez: 1/22000 EUR 2006: Grant Royal Society: 1/7280 EUR		
7.2. Numărul și valoarea contractelor de cercetare internaționale finanțate din fonduri private:		
7.3. Numărul și valoarea contractelor de cercetare naționale finanțate din fonduri publice ( <b>Anexa 7.3</b> ) 2003: Granturi CNCSIS : 7/23100 lei Granturi Acad. Ro.: 5/27000 lei MENER: 2/20000 lei RELANSIN: 2/		

<p>2004:  Granturi CNCSIS : 8/124000 lei  Granturi Acad. Ro.: 6/31000 lei  MENER: 2/130000 lei</p> <p>2005:  Granturi CNCSIS : 6/120000 lei  Granturi Acad. Ro.: 4/11500 lei  MENER: 1/150000 lei</p> <p>2006:  Granturi CNCSIS : 4/91000 lei  Granturi Acad. Ro.: 4/20000 lei  CERES: 1/6500 lei  CEEX: 11/342950 lei  MENER: 1/16350 lei</p> <p>2007:  Granturi CNCSIS : 2/118500 lei  Granturi Acad. Ro.: 1/15000 lei  CEEX: 7/568350 lei  CORINT: 1/112000 lei  PNCDI2: 14/156417 lei  ANCS: 1/8000 lei</p>
<p>7.4. Numărul și valoarea contractelor de cercetare naționale finanțate din fonduri private  <b>(Anexa 7.4)</b></p> <p>2003: 11/  2004: 9/47000 lei  2005: 7/76900 lei  2006: 6/232950 lei  2007: 3/73906 lei</p>
<p>7.5. Alte surse:</p>
<p>7 bis. Venituri realizate din activități economice (servicii, microproducție):</p>
<p>8. Resursa umană de cercetare</p>
<p>8.1. Total personal de cercetare care realizează venituri din activitatea de cercetare-dezvoltare/din care doctori în știință:  2003: 33/23; 2004: 33/22; 2005: 31/21; 2006: 29/20; 2007: 30/24  Media/2003-2007: 31/22</p>
<p>8.1.1. Cercetători științifici gradul 1 /din care doctori în știință:  2003: 8/8; 2004: 8/8; 2005: 7/7; 2006: 6/6; 2007: 10/10  Media/2003-2007: 7.8/7.8</p>
<p>8.1.2. Cercetători științifici gradul 2 /din care doctori în știință:  2003: 9/9; 2004: 8/8; 2005: 9/9; 2006: 9/9; 2007: 8/8  Media/2003-2007: 8.6/8.6</p>
<p>8.1.3. Cercetători științifici gradul 3 /din care doctori în știință:  2003: 6/5; 2004: 6/6; 2005: 5/4; 2006: 6/5; 2007: 5/4  Media/2003-2007: 5.6/4.8</p>

8.1.4. Cercetători științifici/din care doctori în știință: 2003: 7/1; 2004: 7/0; 2005: 6/1; 2006: 6/0; 2007: 5/2 Media/2003-2007: 6.2/0.8				
<b>Total personal de cercetare atestat:</b> <b>Media/2003-2007: 28</b>				
8.1.5. Asistenți de cercetare: 2003: 3; 2004: 4; 2005: 4; 2006: 2; 2007: 2 Media/2003-2007: 3				
8.1.6. Total personal auxiliar de cercetare angajat: 2003: 11 ; 2004: 11 ; 2005: 11; 2006: 12; 2007:12				
8.2. Date privind perfecționarea resursei umane				
8.2.1. Număr de doctoranzi și masteranzi care lucrează în unitatea de cercetare-dezvoltare la data completării formularului: 15				
8.2.2. Număr de teze de doctorat realizate în unitatea de cercetare-dezvoltare în perioada pentru care se face evaluarea: 5				
9. Infrastructura de cercetare-dezvoltare				
9.1. Laboratoare de cercetare-dezvoltare: 1.Laborator de testări și măsurări de vibrații; 2.Laborator de încercarea materialelor; 3. Laborator de ultrasunete; 4. Laborator de tribologie; 5. Laborator de mecatronica. 6.Atelier de prelucrari mecanice pentru autototare, modele experimentale, prototipuri si microproductie				
9.2. Lista echipamentelor performante achiziționate în ultimii 10 ani:				
Nr. crt	Echipamentul	Anul Fabricației	Valoare lei	Sursa de finanțare
1	Echipament pt.achiziții date Base Pulse Lite	2007	58000	CEEX
2	Echipamente de măsură și acționare	2007	24496	CEEX
3	Osciloscop cu placa de achiziție date	2007	20000	CEEX
4	Soft Proiectare ADAMS	2007	50000	CNCSIS
5	Soft AnyBody Modelling System	2007	31500	CNCSIS
6	Echip. antrenare stand pt. testare suspensii auto	2007	24496	CEEX
7	Autoturism laborator pt. încercări de vibrații	2007	40831	CEEX
8	Soft Matlab cu toolboxes	2007	32505	CEEX+CNCSIS
9	Soft prof. (Math Type, Fortran, Acrobat, Origin)	2007	5000	CEEX
10	Soft Labview full system	2007	9873	PNCDI2
11	Soft XP (WINDOWS, OFFICE, BIT defender, SPL)	2007	8400	CEEX
12	Calculator, Windows XP, Office XP, Bit Defender	2007	5000	CEEX

1 3	Sistem de masura forta 100KN cu amplificator de semnal integrat	2007	5765	CEEX
1 4	Soft profesional (Mathematica, Matlab, Math toolbox, BitDefender)	2007	10000	CEEX
1 5	Sistem de masura acceleratii cu accesorii de interconectare	2007	4235	CEEX
1 6	Unitate centrală PC performantă pt. proiectare	2007	5800	CEEX
1 7	Unitate centrală PC pentru achizitie de date	2007	2883	Grant Acad.Ro
1 8	Modul amplificare pt. traductoare piezoceramice	2007	2891	Grant Acad.Ro
1 9	Calculator PC cu periferice	2007	4480	PNCDI2
2 0	Soft Windows XP PRO, Office 2007 PRO	2007	1726	Grant Acad.Ro
2 1	Echipamente pt. cercetare PDA?M+700 și PDA+MIOC720si echipament periferic pt. PC+CP220	2007	8291	PNCDI2
2 2	Sistem portabil pt. achiziție de date	2006	5000	CERES
2 3	Soft –Mediu de programare grafică Labview PRO	2007	16866	CEEX
2 4	Ciocan pt. măsurarea impedanței mecanice	2007	7440	CEEX
2 5	Soft Matlab	2006	33000	CEEX
2 6	Set traductoare deplasare	2006	5000	CEEX
2 7	Set traductoare vibrații	2006	2495	Grant Acad.Ro
2 8	Indicator digital cu intrare universală	2006	2500	Grant Acad.Ro
2 9	Hardware pt. intrări și ieșiri analogice	2006	3300	CNCSIS
3 0	Calculator portabil cu traductor de forță	2006	4000	CNCSIS
3 1	Accelerometru ENDEVCO	2006	6650	CNCSIS
3 2	Calculator portabil performant	2006	7000	CEEX
3 3	Placa SBC pentru achizitie &control	2005	2000	Grant Acad.Ro
3 4	Sistem osciloscop PC cu generator si surse in comutatie	2005	4500	CERES
3 5	Soft (COMSOL, FORTRAN, OFFICE SB 2003)	2005	5000	CEEX
3 6	Placă NI DAQPAD+6052E pt. achiziție și analiză date	2005	24909	CNCSIS
3 7	Sistem portabil pentru achiziție date	2005	5000	CERES
3 8	Calculator cu set periferice (monitor 19"CRT, multifuncțională inkjet)	2005	4000	CERES
3 9	Traductor de vibrații	2004	2000	Grant Acad.Ro
4 0	Set traductoare de vibrații, amplificator pe 3 canale și convertor de sarcină	2004	4800	CNCSIS
4 1	Calculator cu bloc BNC-2120 pentru achiziție date	2003	3000	Grant Acad.Ro
4 2	Soft Labview pt. achiziție, prelucrare date și instrumentație virtuală	2003	2500	Grant Acad.Ro
4 3	Osciloscop și generator de funcții PC	2002	4200	CNCSIS

## ANEXA 4.1.

### 4.1.1 Lista Lucrărilor ISI publicate in perioada 2003-2007

#### **2003: F. impact 1.471**

1. T.Sireteanu, D.Stancioiu, M.Giuclea, C.W.Stammers, 2003, *Experimental identification of a magnetorheological damper model to compare semi-active control strategies of vehicle suspensions*, *Mechanika( Poland)* **22**, 3, 2003, pp.433- 438. **(factor impact 0.431)**
2. St. Donescu, V. Chiroiu, T. Badea, L. Munteanu, “*The hysteretic behavior of nonlinear mesoscopic materials*”, *AMSE: Modelling, Measurement and Control, Series B: Mechanics and Thermics*, vol.72, nr.6, ISSN 1259-5969, p.55- 67, 2003. **(factor impact 0.52)**
3. V. Chiroiu, M. Scalerandi, “*On the high strain rate crack growth in a mesoscopic nonlinear solid*”, *AMSE: Modelling, Measurement and Control, Series B: Mechanics and Thermics*, vol.72, nr.7, ISSN 1259-5969, pp.61-73, 2003. **(factor impact 0.52)**

#### **2004:F. impact 4.074**

1. M.A. Soare, C.R. Picu, *Singular Field Decomposition Based on Path Independent Integrals*, 2004. *Philosophical Magazine*, 84, 28, 2979–3009, 2004. (ISSN 0141-8610). **(factor impact 1.354)**.
2. M. Giuclea, T. Sireteanu, D. Stancioiu, C.W. Stammers, 2004, *Model parameter identification for vehicle vibration control with magnetorheological dampers using computational intelligence methods*, *Proceedings of the Institution of mechanical Engineers Part I-Journal of Systems and Control Engineering*, 218, 17, 569-581, 2004.(ISSN 0959-6518) **(factor impact 0.62)**
3. M.A.Soare, C.R.Picu, The negative strain rate sensitivity of dilute solid solutions: a constitutive formulation, *Phys. Stat. Sol.*, 2004.(ISSN 0031-8965). **(factor impact 1.58)**.
4. V. Chiroiu, L. Munteanu, C. M. Nicolescu, “*Shape description of general 3D object using tactile sensing information*”, *AMSE: Advances in Modelling, Series B: Signal Processing and Pattern Recognition*, vol.47, nr. 3, ISSN 1258-5769, pp. 81-90, 2004. **(factor impact 0.52)**

#### **2005:F. impact 6.333**

1. E. Guglielmino, C.W. Stammers, D.Stăncioiu, T. Sireteanu, R.Ghigliaza, *Hibrid variable structure control of a magnetorheological damper for a seat suspension*, *Int.J.Vehicle Autonomous Systems*, Vol 3, No.1, pp. 34-46, 2005. (ISSN 1471-0226) **(factor impact 0.75)**
2. E. Guglielmino, C.W. Stammers, T. Sireteanu, D.Stăncioiu, *Conventional and non-conventional smart damping systems for ride control*, *Int.J.Vehicle Autonomous Systems*, Vol 3, No.2-4, pp. 216-229, 2005. (ISSN 1471-0226) **(factor impact 0.75)**
3. L. Capitanu, J. Onisoru, A. Iarovici, *Tribological aspects for injections processing of thermoplastic composite materils with glass fiber*, *Journal of the Balkan Tribological Association*, vol 11, No 4, pp 572-557, (2005). (ISSN 1310-4772) **(factor impact 0.431)**



4. M.A. Soare, R.C. Picu, J. Tichy, T.M. Lu, G.C. Wang, 2005, *Fluid Transport Through Nano-Channels Using Nano-Electromechanical Actuators*, Journal of Intelligent Materials and Structures 17, 3, 231-238, 2005. (ISSN 1945-389X). **(factor impact 1.276)**.
5. M.A. Soare, C.R. Picu, *Multiscale Modeling of the Negative Strain Rate Sensitivity in Solid Solutions – A Constitutive Formulation*, International Journal for Multiscale Computational Engineering 3, 4, 415-435, 2005 . (ISSN 1543-1649). **(factor impact 0.846)**.
6. P.P.Teodorescu, L.Munteanu, V.Chiroiu, *On the wave propagation in chiral media*, Proceed. “New Trends in Continuum Mechanics”, Editura Thetha, Bucuresti, ISBN 973-85432-5-8, pp. 303-310, 2005. **(factor impact**
7. P.P.TEODORESCU, T. BADEA, L. MUNTEANU, J. ONISORU, *On the wave propagation in composite materials with a negative stiffness phase*”, Proceed. “New Trends in Continuum Mechanics”, Editura Thetha, Bucuresti, ISBN 973-85432-5-8, pp 295-302, 2005. **(factor impact**
8. L. MUNTEANU, C. CHIROIU, “*On the mechanical behavior of carbon nanotubes with single- atomic-layer walls*”, AMSE: Modelling, Measurement and Control, Series B, ISSN 1259-5969, vol.74, nr.8, pp. 65-78, 2005. **(factor impact 0,52)**
9. ST. Donescu, V. Chiroiu, L. Munteanu, “*Application of LISA to the dynamics of periodically layered elastic media*”, AMSE: Modelling, Measurement and Control, Series B, ISSN 1259-5969, vol.74, nr. 6, pp 37-48, 2005. **(factor impact 0.52)**
10. P.STIUCA, V. CHIROIU, “*On the propagation of waves in a nonlinear viscoelastic medium*”, AMSE: Advances in Modelling, Series A, vol. 42, nr.3, ISSN 1258-5769, pp.13-32, 2005. **(factor impact 0,52)**
11. F. MAILAT, ST. DONESCU, V. CHIROIU, L. MUNTEANU, “*On the nonlinear adaptive control of semi-active suspensions*”, AMSE: Advances in Modelling, Series C, vol.60, nr.5, ISSN 1258-5769, pp.15-28, 2005. **(factor impact 0.52)**

**2006:F. impact 9.548**

1. L.Munteanu, St.Donescu, V.Chiroiu, *An inverse problem for the motion of blood in small vessels. Physiological Measurement*, Institute of Physics Publishing, vol.27, nr.9, 865-880, 2006. (ISSN 0967-3334) . **(factor impact 1.529)**
2. I. Iliuc, *Wear and micropitting of steel ball sliding against TiN coated steel plate in dry and lubricated conditions*, Tribology International, 39, 7, pp. 607-615, 2006. ( ISSN 0301-679X) **(factor impact 1.625)**
3. J.Onisoru, A. Iarovici, L. Capitanu, M.Popescu , *The effect of common activities on the osseointegration of the femoral stem*, 5-th World Congress of Biomechanics, Munchen, Journal of Biomechanics, Vol.39, Suppl.1, pp. 125, 2006. **(impact factor 2.218)**
4. J.Onisoru, A. Iarovici, L. Capitanu, M.Popescu, *A method for prediction the wear of the artificial joints* , 5-th World Congress of Biomechanics, Munchen, Journal of Biomechanics, Vol.39, Suppl.1, pp.141, 2006.**(impact factor 2.218)**
5. M.A.Soare, R.C.Picu, *Spectral decomposition of random fields defined over the generalized Cantor set*, Chaos, Solitons and Fractals, pp. 563-574, 2006. **(factor impact 1.438)**
6. L. Vladareanu , *Open Architecture Systems for the Compliance Robots Control*, WSEAS Transactions on Systems, issue 9, Volume 5, September 2006, ISSN 1109-2777, pg. 2243-2249 **(factor impact 0.52)**

1. V.Chiroiu, L. Munteanu, *On the free vibrations of a piezoceramic hollow sphere*, Mechanics Research Communications, Elsevier, vol.34, nr.2, 2007. (ISSN 0093-6413). **(factor impact 0.788)**.
2. M.A.Soare, R.C.Picu, *An Approach to Solving Mechanics Problems for Materials with Multiscale self-similar Microstructure*, Int. J. of Solids and Structures, vol.44, issue 25, 7433-7442, 2007. (ISSN ). **(factor impact 1.529)**.
3. L. Capitanu, A. Iarovici, J. Onisoru, *Tribological behaviour of a Total Hip Prosthesis during normal walking active cycle*, Journal of the Balkan Tribological Association, vol.12, No 2, 2007. (ISSN 1310-4772) **(factor impact 0.431)**
4. J. Onisoru, A. Iarovici, L. Capitanu, M. Popescu, *FE simulation of the proximal femur after hip artroplasty*, Journal of the Balkan Tribological Association, vol. 12, No 3, 2007. (ISSN 1310-4772) **(factor impact 0.431)**
5. M. Beldiman, *Equilibrium problems with set-valued mappings in Banach spaces*, va apare in Nonlinear Analysis: Theory, Methods and Applications, 2007. (ISSN 0362-546X). **(impact factor 0.618)**
6. M.A.Soare, R.C.Picu, *Boundary Value Problems Defined on Stochastic Self-Similar Multiscale Geometries*, Int. J. for Numerical Meth. in Eng., 2007.(ISSN 0029-5981). **(impact factor 0.618)**
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## ANEXA 4.2.

### Lista brevetelor de inventie din perioada 2003-2007

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4. **NICULESCU Adrian-Ioan**, AMORTISSEUR AUTO-AJUSTABLE AVEC CARACTERISTIQUES AUTO-CORRECTRICES DISSIPATIVES, **France , FR 00 961 276.3**
5. **NICULESCU Adrian-Ioan**, AMORTIGUADOR AUTO-AJUSTABLE CON CARACTERISTICAS DE DISIPATION AUTOCORRECTIVAS, **España, 2248115 t3**.
6. **LUIGE VLADAREANU**, METODEDE ŞI DISPOZITIV TAHOGENERATOR, cerere brevet inventie, **2006,Romania**
7. **NICULESCU Adrian-Ioan**, AMORTIZOR AUTOREGLABIL CU CARACTERISTICA DISIPATIVA AUTOCORECTOARE, CU SUPAPE DE UMLERE CURBE, **Cerere de Brevet de Inventie, Romania A/00770**



### **ANEXA 4.3.**

#### **Lista produselor și tehnologii rezultate din activități de cercetare, bazate pe brevete, omologări sau inovații proprii**

1. Stand pentru studiul experimental al comportării dinamice ale dispozitivelor de amortizoare a vibrațiilor, cu reglarea automată a vitezei de lucru și achiziția datelor pe calculator.
2. Stand pentru ridicarea caracteristicilor de lucru ale amortizoarelor hidraulice pentru suspensii auto.
3. Instalatie de incercari experimentale pentru determinarea caracteristicilor de rigiditate si amortizare a dispozitivelor mecanice pentru controlul comportarii constructiilor la actiuni seismic.
4. Sesizor de nivel cu elemente piezoceramice pentru produse pulverulente sau granulare.

## ANEXA 5.1.

### Lista lucrărilor publicate în reviste de specialitate fără cotație ISI în perioada 2003-2007

#### Anul 2003

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13. Rugină I., Rugină C., “*Determination of ultrasonic system characteristics*”, “**Topics in Applied Mechanics**”, vol.1, editors: Veturia Chiroiu, Tudor Sireteanu, Editura Academiei, București, 2003, Chapter 6.
14. A. Iarovici, “*Theories of finite elements type, using the branched transfer method*”, “**Topics in Applied Mechanics**”, vol.1, editors: Veturia Chiroiu, Tudor Sireteanu, Editura Academiei, București, 2003, Chapter 5.
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16. L. Munteanu, “*Statics and dynamics of the thin elastic rod*”, “**Topics in Applied Mechanics**”, vol.1, editors: Veturia Chiroiu, Tudor Sireteanu, Editura Academiei, București, 2003, Chapter 10.

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59. Niculescu A, I. Sireteanu T., Dumitriu D., *Solutions, results, using shock absorbers based on the “VZN” principle*, 11<sup>th</sup> European Automotive Congress; *Automobile for the future*, 29.05-01.06.2007, Budapesta, Ungaria
60. Niculescu A.I., *Design solutions, and active safety increasing, for “VZN” shock absorbers*, EUROPEAN KONES 2007, RYNIA, 9-12 September 2007, RYNIA, Warsovia, POLONIA
61. V.Preda, A.Batatorescu, M.Beldiman, “Nondifferentiable Minmax Fractional Programming with Square Root Terms”, Proceedings of the 7-th Balkan Conference on Operational Research, 23-39, Bucuresti, 2007.

### ANEXA 5.3

#### **Lista modelelor, procedurilor și metodologiilor reglementărilor și planuri tehnice noi sau perfectionate realizate în cadrul programelor naționale sau comandate de beneficiar**

- 1 . Metodologie și soft pentru determinarea indicelui de rănire a capului (HIC) la impactul cu acoperirile suprafețelor terenurilor de joacă. Beneficiar: CERTROM București.
- 2 . Metodologie și soft pentru echiparea unui stand de proba a distribuitorului de aer KE1c. Beneficiar: FRIREP Pascani.
- 3 . Plan tehnic pentru realizarea rețelei de laboratoare de cercetare în domeniul materialelor dure și extradure. Beneficiar: Institutul Național de Cercetare- Dezvoltare pentru Mecanica Fina Bucuresti
- 4 . Plan tehnic pentru crearea unui sistem integrat de înaltă precizie necesar realizării de investigații specifice materialelor compozite de tip dur în regim informatizat. Beneficiar: Institutul Național de Cercetare- Dezvoltare pentru Mecanica Fina Bucuresti
- 5 . Robot mobil pentru urmărirea optică a unui traseu predefinit.
- 6 . Robot mobil autonom capabil să evolueze într-un mediu cu obstacole necunoscute.

## ANEXA 6.3

### Lista premiilor internaționale obținute prin process de selectie

#### Inventii premiate la saloane internationale

1. **Medalia de aur la "Salon International des Inventions", Geneve, 35<sup>th</sup> Edition, 2007, LUIGE VLADAREANU, LUCIAN MARIUS VELEA, RADU I. MUNTEANU, DANIEL MOGA, R. A. MUNTEANU, "Method et dispositif de mesure pour la vitesse de rotation dans un milieu profond perturbant**
2. **Premiu al Universitatii din Iran la "Salon International des Inventions", Geneve, 35<sup>th</sup> Edition, 2007, RADU I. MUNTEANU, DANIEL MGA, RADU A. MUNTEANU, LUIGE VLADAREANU, Systeme sans fil pour la telemesure de l'inclinaison**

## ANEXA 7.1

### Lista granturilor din strainatate

#### 2003

1. **Grant ROYAL SOCIETY 2002-2004, Smart systems for mitigation of machine vibration and structural response**, parteneriat cu Univ. din Bath, U.K. , coordinators: C.W. Stammers, T. Sireteanu ( 4060 GBP/2003 )
2. **Project nr. 2657 incheiat cu Svenska Institutet, Stockholm/2002-2003** “*Active and passive damping with applications in manufacturing*”, resp. din partea suedeza: prof. Cornel Mihai Nicolescu si prof. Goran Karlsson; resp. din partea romana: Dr. T. Sireteanu, Dr. V. Chiroiu, Dr. I. Rugina (175000 SEK/2003)
3. **PROIECTE FP6 PARTENER:HOPE** “*Hybrid, Non-conventional processes friendly to the environment and their incorporation into the factory of the future*”, reference number - FP6-500611-1. director dr. Maria Zybura, The Institute of Metal Cutting, Krakow, Polonia. Resp. IMS: V Chiroiu, G.Lascu, D. Marin

#### 2004

1. **Grant ROYAL SOCIETY 2002-2004, Smart systems for mitigation of machine vibration and structural response**, parteneriat cu Univ. din Bath, U.K. , coordinators: C.W. Stammers, T. Sireteanu (3550 GBP/2004)
2. **Project nr. 01834/2004-2006, incheiat cu Svenska Institutet, Stockholm** “*Active and passive damping with applications in manufacturing*”, coordinators: prof. Cornel Mihai Nicolescu si prof. Goran Karlsson; romanian coordinators: dr. T. Sireteanu, dr. V. Chiroiu, dr. I. Rugina (200.000 SEK/ 2004)

#### 2005

1. **PROJECT NR. 01834/2004-2006, incheiat cu Svenska Institutet, Stockholm** “*Active and passive damping with applications in manufacturing*”, coordinators: prof. Cornel Mihai Nicolescu si prof. Goran Karlsson; romanian coordinators: dr. T. Sireteanu, dr. V. Chiroiu, dr. I. Rugina (200.000 SEK/ 2005)
2. **International Joint Project nr. 2005/R1**, parteneriat cu Univ. din Bath, U.K. *Smart control of buildings, historic and modern, subject to earthquakes*, coordinators: C.W. Stammers, T. Sireteanu, (5100 GBP/2005)

#### 2006

1. **International Joint Project nr. 2005/R1**, parteneriat cu Univ. din Bath, U.K., “*Smart control of buildings, hitoric and modern, subject to seismic excitation* ”, coordinators: prof. Charles Stammers; dr. T. Sireteanu (5200 GBP/2006)
2. **Politecnico di Torino, Dip di Fisica**, tema: “*Scaling, nonlinearity and universality: a top-down approach to material characterization*”, resp. P.P. Delsanto, L. Munteanu, V. Chiroiu.

#### 2007

1. **2005-2009 POLITECNICO DI TORINO, DIP DI FISICA**, Tema: “*Scaling, Nonlinearity And Universality: A Top-Down Approach To Material Characterization*”, Resp. P.P. Delsanto, L. Munteanu, V. Chiroiu.

2. **LABORATOIRE DE TECHNOLOGIES INDUSTRIELLES CENTRE DE RECHERCHE PUBLIC HENRI TUDOR 2A, RUE KALCHESBRECK L-1852 LETZEBUERG GRAND DUCHY OF LUXEMBOURG, Tema : « Nanoindentation »** Resp. Dr. D. Dumitriu, Dr. Gast Rauchs.
3. **2007-2009 PÄDAGOGISCHE AKADEMIE DES BUNDES IN WIEN ETTENREICHGASSE 45, 1100 WIEN, TEMA : « Safety Goes Europe »** (Resp. Dr.V.Chiroiu, Prof. Hans Fibi, Prof.Ingrid Hantschk).
4. **International Joint Project nr. 2005/R1**, parteneriat cu Univ. din Bath, U.K., “*Smart control of buildings, hitoric and modern, subject to seismic excitation* ”, coordinators: prof. Charles Stammers; dr. T. Sireteanu

## ANEXA 7.3

### GRANTURI NATIONALE

#### 2003

1. Contract nr. / 2003 cu CNCSIS, tema At1, cod 152, resp. dr. V. Chiroiu “Cercetari privind controlul inteligent al amortizarii in nanostructuri si materiale nanostructurate cu aplicatii in mecanica”.
2. Proiect GAR nr.4/2003 Contract nr. 99/ 2003, “Cercetari privind utilizarea aliajelor cu memoria formei in controlul vibratiilor mecanice cu aplicatii in robotica si masini unelte”, resp. dr. V. Chiroiu, valoare 50 mil. Lei.
3. Contract nr.34395/ 16 iulie 2003 cu CNCSIS, tema At1, cod 9, resp. T. Badea “Cercetari privind caracterizarea ultrasonica a mixturilor solid-fluid conductoare de caldura cu aplicatii in seismologie”.
4. Contract nr. 34395/ 16 iulie/2003 cu CNCSIS, tema At3, cod 8, resp. dr. L. Munteanu, “Cercetari privind comportarea solitonica a materialelor mezoscopice neliniare cu aplicatii la caracterizarea fenomenelor de generare a energiei”.
5. Grant CNCSIS nr.34395/2003, Tema A1, cod CNCSIS 44 : Cercetări privind biotribologia articulațiilor ortopedice de sold prin metodologii neconvenționale. Resp. L. Capitanu, Valoare: 60 mil.lei.
6. Proiect GAR 117/2003, Contract 110/2003: “Cercetari privind solicitarile, tensiunile si deplasările in endoprotezele de sold”, resp. A. Iarovici, valoare: 50 mii lei.
7. Proiect GAR 142/2003, “Evaluarea tenacitatii interlaminare; propagarea deteriorarilor si fisurilor in materiale compozite”, resp. D.M.Constantinescu, valoare: 60 mil. lei.
8. Proiect GAR 5/2003, Contract 110/2003: “Metode de atenuare a impactului seismic”, resp. D. Bratosin, valoare: 50 mil. lei.
9. Proiect GAR 30/2003, contract 97/2003, “Metode de modelare in evaluarea nedistructiva a caracteristicilor si defectelor materialelor, prin stimularea numerica bidimensionala a propagarii undelor”, resp. I. Rugină, val.: 50 mil. lei.
10. Proiect GAR 196/2003, “Metode moderne pentru controlul inteligent al structurilor civile solicitate de factori aleatori externi.”, resp. T. Sireteanu, valoare: 60 mil. lei.
11. Grant CNCSIS 126/2003, Controlul inteligent al vibratiilor mecanice prin fluide magneto-reologice cu implementarea automatizarilor complexe cu logica programata, Resp. T. Sireteanu, valoare: 67.500.000 lei.
12. Grant CNCSIS 127/2003, Studii si cercetari aplicative pentru controlul si comanda traiectoriei miscarii de conturare a robotilor industriali cu sase grade de libertate prin achizitia in timp real bazata pe sisteme multimicroprocesor si aplicarea tehnicii de varf, resp. L. Vlădăreanu, valoare: 67.500.000 lei.
13. Grant CNCSIS 466/2003, Sisteme pasive autoadaptabile de izolare antivibratorie, resp F. Mailat, valoare: 36.000.000 lei.
14. Program **MENER 2003-2005**, Reducerea riscului seismic pe platforma CNE Cernavoda prin utilizarea unor dispozitive mecanice pentru disiparea energiei seismice si controlul comportarii dinamice a structurilor, cu aplicare si la constructiile clasice”, resp. T. Sireteanu, faza/2003- Valoare 20000 lei
15. Program **MENER 2003**, Contract. 020/2000 –2003, faza 4 si 5, “Valorificarea eficienta cu risc minim asupra mediului a unui zacamant uranifer din Carpatii Orientali in vederea asigurarii combustibilului nuclear in concordanta cu cerintele programului nuclear national”, L. Vladareanu – responsabil IMS,

16. Proiect **RELANSIN 1503** (IMS partener), *Dispozitive mecanice adaptabile - ACED, cu rigiditate si amortizare controlata, pentru protectia antiseismica a constructiilor*, resp. T.Sireteanu.
17. **RELANSIN 2003**, Contract 1713/2003-2005, faza 1, 2 si 3, “*Sistem de automatizare si actionare complexa cu automate programabile a instalatiilor de preparare concentrate din minereuri prin procese de flotatie cu dispecerizare la distanta prin retea GSM si modem*”, L.Vladareanu –responsabil IMS: colectiv: dr. T, Sireteanu, dr. I. Rugina.
18. Leonardo da Vinci 2003 - *Pilot Proiect 112511 “VICO-ECOM”*, 2002-2006, faza 1, Procedura B 2001, L. Vladareanu responsabil I.M.S.

## 2004

1. Proiect GAR nr.4/2003, Contract nr. 95/ 2004, “*Cercetari privind utilizarea aliajelor cu memoria formei in controlul vibratiilor mecanice cu aplicatii in robotica si masini unelte*”, resp. dr. V. Chiroiu, valoare 50 mil. Lei.
2. Proiect GAR 117/2003, Contract 104/2004: “*Cercetari privind solicitarile, tensiunile si deplasările in endoprotezele de sold*”, resp. A. Iarovici, valoare: 40 mil. lei.
3. Proiect GAR 142/2003, “*Evaluarea tenacitatii interlaminare; propagarea deteriorarilor si fisurilor in materiale compozite*”, resp. D.M.Constantinescu, valoare: 60 mil. lei.
4. Proiect GAR 5/2003, Contract 94/2004: “*Metode de atenuare a impactului seismic*”, resp. D. Bratosin, valoare: 50 mil. lei.
5. Proiect GAR 30/2003, contract/2004, “*Metode de modelare in evaluarea nedistructiva a caracteristicilor si defectelor materialelor, prin stimularea numerica bidimensionala a propagării undelor*”, resp. I. Rugină, val.: 50 mil. lei.
6. Proiect GAR 196/2003, “*Metode moderne pentru controlul inteligent al structurilor civile solicitate de factori aleatori externi.*”, resp. T. Sireteanu, valoare: 60 mil. lei.
7. Grant CNCSIS nr.33344/2004, Tema A1, cod CNCSIS **2** :Resp. L. Capitanu, Valoare: 220.000 mii lei, *Studii comparative privind biomecanica si biotribologia protezelor ortopedice de sold si genunchi*
8. Grant CNCSIS nr.33344/2004, Tema A2, cod CNCSIS **822** :Resp. A.Iarovici, Valoare: 195.000 mii lei, *Cercetari privind stabilitatea primara si pe termen lung a implanturilor ortopedice*
9. Grant CNCSIS nr.33344/2004, Tema A3, cod CNCSIS **258** :Resp. M. Migdalovici, Valoare: 100.000 mii lei, *Controlul vibratiilor cablurilor suspendate prin optimizarea caracteristicilor absorbitorilor dinamici din componenta sistemelor dinamice aferente*
10. Grant CNCSIS nr.33344/2004, Tema A4, cod CNCSIS **152** :Resp. V. Chiroiu, Valoare: 125.000 mii lei, *Cercetari privind controlul inteligent al amortizării in nanostructuri si materiale nanostructurate cu aplicatii in mecanica*
11. Grant CNCSIS nr.33344/2004, Tema A5, cod CNCSIS **126**:Resp.T. Sireteanu, Valoare: 160.000 mii lei, *Controlul inteligent al vibrațiilor mecanice prin fluide magneto-reologice cu implementarea automa-tizărilor complexe cu logică programată*
12. Grant CNCSIS nr.33344/2004, Tema A6, cod CNCSIS **127** :Resp.L. Vlădăreanu, Valoare: 240.000 mii lei, *Studii si cercetari aplicative pentru controlul si comanda traiectoriei de miscare a robotilor industriali cu sase grade de libertate prin achizitia in timp real bazata pe sisteme multimicroprocesor*
13. Grant CNCSIS nr.33344/2004, Tema At1, cod CNCSIS **85** :Resp.C. Rugină, Valoare: 100.000 mii lei, *Simularea numerica 3d a propagării undelor ultrasonice cu aplicatii in controlul nedistructiv cu ultrasunete*
14. Grant CNCSIS nr.33344/2004, Tema A, cod CNCSIS **466**: Resp. F. Mailat, Valoare: 100.000 mii lei, *Sisteme pasive autoadaptabile de izolare antivibratorie*

15. Program **MENER 2003-2005**, *Reducerea riscului seismic pe platforma CNE Cernavoda prin utilizarea unor dispozitive mecanice pentru disiparea energiei seismice si controlul comportarii dinamice a structurilor, cu aplicare si la constructiile clasice*", resp. T. Sireteanu, faza/2004- Valoare 130000 lei

### 2005

1. Contract GAR nr. 95/2005: *“Vibratiile nanoturburilor de carbon cu un singur perete incarcate cu forte axiale, forte transversale si momente incovoietoare, pe mediu elastic, cu aplicatii la construirea materialelor nanostructurate super-rezistente”* resp. dr. V. CHIROIU Valoare: 2500 lei
2. Contract GAR nr. 94/2005: *“Metode de atenuare a impactului seismic”*, resp. dr. D. BRATOSIN, Valoare: 2500 lei.
3. Contract GAR nr. 93/2005: *Analiza teoretică și experimentală a comportării dinamice a unor noi dispozitive de izolare antivibratorie și protecție antiseismică*, resp. dr.T. SIRETEANU Valoare: 4000 lei
4. Contract GAR nr. 89/2005 *Determinări experimentale, în regim dinamic, a legilor de distribuție aleatoare la solicitări variabile*, resp. dr. D. CONSTANTINESCU, Valoare: 2500 lei
5. Grant CNCSIS nr.33344/2004, Tema A1, cod CNCSIS **2**: *Studii comparative privind biomecanica si biotribologia protezelor ortopedice de sold si genunchi*, resp. dr. L. CAPITANU. Valoare: 280 mil. ROL
6. Grant CNCSIS nr.33344/2004, Tema A2, cod CNCSIS **822**: *Cercetari privind stabilitatea primara si pe termen lung a implanturilor ortopedice*, resp. dr.A. IAROVICI Valoare: 220 mil. ROL
7. Grant CNCSIS nr.33344/2004, Tema A3, cod CNCSIS **258**: *Controlul vibratiilor cablurilor suspendate prin optimizarea caracteristicilor absorbitorilor dinamici din componenta sistemelor dinamice aferente*, resp. dr. M. MIGDALOVICI. Valoare: 100 mil ROL
8. Grant CNCSIS nr.33344/2004, Tema A4, cod CNCSIS **152**: *Cercetari privind controlul inteligent al amortizarii in nanostructuri si materiale nanostructurate cu aplicatii in mecanica*, resp. dr. V. CHIROIU Valoare: 220 mil. ROL
9. Grant CNCSIS nr.33344/2004, Tema AT1, cod CNCSIS **85**: *Simularea numerica 3d a propagarii undelor ultrasonice cu aplicatii in controlul nedistructiv cu ultrasunete*, resp. dr. C. RUGINĂ, Valoare: 100 mil. ROL
10. Grant CNCSIS nr. 27664/2005-2007, tema A1,cod **160/2004**, *“Program virtual de arhitecturare a unor nanocompozite cu proprietati optime de rezistenta si amortizare”* resp. dr. L. MUNTEANU Valoare: 280 ROL
11. Program **MENER 2003-2005**, *Reducerea riscului seismic pe platforma CNE Cernavoda prin utilizarea unor dispozitive mecanice pentru disiparea energiei seismice si controlul comportarii dinamice a structurilor, cu aplicare si la constructiile clasice*", resp. T. Sireteanu, faza/2005- Valoare 150000 lei

### 2006

1. D.BRATOSIN, *Aspecte neliniare în protecția pasivă antiseismică a structurilor prin izolarea bazei, contract de grant cu Academia Română, 2005-2006 (Faza 2006 = 5000 lei)*
2. Contract GAR nr.88 /2006, cod 3 /2005 cu Academie Romana, V.CHIROIU, director de proiect, *“Vibratiile nanotuburilor de carbon cu un singur perete incarcate cu forte axiale, forte transversale si momente incovoietoare, pe mediu elastic, cu aplicatii la construirea materialelor nanostructurate superrezistente”*, 5.000 RON/2006
3. Contract GAR 86/2006, *Analiza teoretica si experimentală a comportării dinamice a unor noi dispozitive de izolare antivibratorie si protecție antiseismică*, resp. T. Sireteanu , 5000 RON



4. Contract GAR, 83/2006, *Metode statistice pentru determinarea experimentală și simularea solicitărilor variabile aleatoare...*, resp. C. Balas, 5000 lei
5. Grant CNCISIS nr.33344/2004, Tema A1, cod CNCISIS 2 :Resp. L. Capitanu, Valoare: 28.000 lei, *Studii comparative privind biomecanica și biotribologia protezelor ortopedice de sold și genunchi*
6. Grant CNCISIS nr.33344/2004, Tema A2, cod CNCISIS **822** :Resp. A.Iarovici, Valoare: 25.000 lei, *Cercetări privind stabilitatea primară și pe termen lung a implanturilor ortopedice*
7. Grant CNCISIS nr.33344/2004, Tema A3, cod CNCISIS **258** :Resp. M. Migdalovici, Valoare: 10.000 Lei, *Controlul vibrațiilor cablurilor suspendate prin optimizarea caracteristicilor absorbitorilor dinamici din componenta sistemelor dinamice aferente*
8. Contract grant CNCISIS nr. 27664/2005, cod 160/2005, act aditional GR 120/2006, L.Munteanu, director de proiect, “*Program virtual de arhitecturare a unor nanocompozite cu proprietăți optime de rezistență și amortizare*”, 28.500 RON/2006.
9. *Modelarea comportării neliniare a rocilor din zona roca de baza – suprafața; Corelarea datelor obținute în urma determinărilor de laborator cu cele “in situ”*. sub-contract cu I.N.C.D. pentru Fizica Pământului, contract CERES 2004-2006: *Modelarea răspunsului seismic al litosferei zonelor seismogene crustale. Aplicație la zona activă Timisoara*, resp IMS: D. Bratosin, (**Faza 2006 = 6500 lei**).
10. *Modelarea pământurilor ca materiale vâscoelastic neliniare*, sub-contract cu I.N.C.D. pentru Fizica Pământului, contract CEEEX 2005-2007: *Cercetări privind hazardul seismic local (microzonare) pentru orașe din zona extracarpatică. Studii de caz*, resp IMS: D. Bratosin, (**Faza 2006 = 35000 lei**).
11. *Model dinamic vâscoelastic neliniar pentru materialele din straturile geologice superficiale*, sub-contract cu I.N.C.D. pentru Fizica Pământului, contract CEEEX 2006-2008 : *Cercetări complexe de Fizica Pământului pentru realizarea finală a hărții de hazard seismic a României prin metode probabilistice și deterministe, liniare și neliniare*. resp IMS: D. Bratosin, (**Faza 2006 = 13200 lei**)
12. Contract grant CEEEX postdoctoral, contract nr. 1531/2006, cod 1/2005, V.CHIROIU, director de proiect, “*Program postdoctoral privind dezvoltarea de noi teorii cuplate atomistic-continue cu aplicații la modelarea nanocontactelor și a indentării*”, 100.000RON/2006.
13. Grant CEEEX-partener, Contract X2C32/2006, cod MEC 5632, director de program: prof. Dinel Popa- Univ. din Pitești, V.Chiroiu, responsabil IMS, “*Sistem mecanic pentru cuplarea surselor de putere termică și electrică, destinat automobilelor ecologice cu propulsie hibridă*”, 80.000RON/2006.
14. L. VLADAREANU-coordonator proiect IMS; Proiect Excelență: *Sisteme bazate pe viziune pentru monitorizare și control inteligent – ViSiCoM*, program național AMTRANS 2006-2008, coordonator proiect UTCN
15. CONTRACT CEEEX – M3 nr. 254/ 11.09.2006, CO - *Program European comun, pentru definirea performanțelor amortizorului autocorector* – 33000 RON – coordonator. proiect IMS – I. NICULESCU;
16. Sireteanu, partener CEEEX –UT Brasov, *Sisteme mecanice noi pentru creșterea eficienței conversiei energiei solare în energie electrică*, 25000 lei , 2006
17. CONTRACT CEEEX nr. X1C02/ 03.10.2005 (etapa 2006) cu UPB – Catedra Material Rulant, INCDIE ICPE – CA și Atelierele GRIVITA, **P3** – *Sistem complex computerizat pentru verificarea, diagnoza și testarea finală a echipamentelor pneumatice de frână ale vehiculelor feroviare, pentru creșterea siguranței și securității în transportul pe calea ferată* – **20000 RON** – resp. proiect IMS, G. Ghita
18. CONTRACT CEEEX nr. X2C26/ 11.09.2006 cu UPB – Catedra Material Rulant, INCDIE ICPE – CA și Atelierele GRIVITA **P3** - *Stand pentru testarea și diagnosticarea*

- computerizata a amortizoarelor, pentru vehiculele feroviare, in scopul imbunatatirii performantelor dinamice, cresterii sigurantei circulatiei si a confortului calatorilor – 6705 RON – resp. proiect IMS – dr. ing. Gh. GHITA;*
19. T. Sireteanu -responsabil, Program MENER, partener contract cu RAAM-SITON, Măgurele București, valoare pentru anul 2006, 16350 lei
  20. CONTRACT CEEEX nr. 1029/ 11.09.2006 cu UPB – CNCSPT si SIGMA – SS, **P2** - *Solutii tehnice performante de reducere a socurilor si vibratiilor in vederea cresterii performantelor tehnico-economice ale echipamentelor, masinilor si utilajelor, REDVIB* – resp. proiect IMS: dr. T. SIRETEANU; valoare pentru anul 2006, 15000 lei
  21. Iliuc – responsabil Contract **CEEEX**, *Realizarea de sisteme mecatronice de inaltă rezoluție pentru mamipularea, trasportul și controlul produselor pe linii tehnologice de transfer–partener INCDMF* -15000 lei.

### 2007

1. L.Munteanu, director proiect CNCISIS, contract nr. 55/2007, cod 160/2005, “*Program virtual de arhitecturare a unor nanocompozite cu proprietati optime de rezistenta si amortizare*”, 37.500lei/2007.
2. L.Munteanu, director proiect PN2 Idei contract 106/2007, cod ID\_247/2007, “*Caracterizarea bazata pe cunoastere a capacitatii de amortizare a nanocompozitelor din materiale auxetice si nanotuburi de carbon*”, 81.000 lei/2007.
3. V.Chiroiu, director proiect CEEEX postdoctoral, contract nr. 1531/2006, cod 1/2005, “*Program postdoctoral privind dezvoltarea de noi teorii cuplate atomistic-continue cu aplicatii la modelarea nanocontactelor si a indentarii*”, 250.000lei/2007.
4. V.Chiroiu, director proiect CEEEX-partener, contract nr.X2C32/2006, cod MEC 5632, “*Sistem mecanic pentru cuplarea surselor de putere termica si electrica, destinat automobilelor ecologice cu propulsie hibrid*”(Univ. din Pitesti), 38.000lei/2007
5. L. Vladareanu, director proiect 005/2007, “*Cercetari fundamentale si aplicative pentru controlul hibrid forta-pozitie al robotilor pasitori modulari HFPC MERO*”, durata 2007-2010, **Program National PN II Idei**, 45.000 lei 2007
6. L. Vladareanu, director proiect 1250/ 2007, “*Sistem de automatizari complexe modulare cu dispecerizare la distanta*”, durata 2007-2010, **Program National PN II INOVARE**, coordonator program AMCSIT
7. L. Vladareanu-responsabil proiect 1121/ 2007 VTC, “*Sistem automat cu control in timp real configurabil si modular pentru obtinerea furajerii combinate*”, durata 2007-2010, **Program National PN II INOVARE**, coordonator program AMCSIT
8. L. Vladareanu-responsabil proiect IMS, cod X2C22, Proiect Excelenta: *Sisteme bazate pe viziune pentru monitorizare si control inteligent – ViSICoM*, **program national AMTRANS 2006-2008**, coordonator proiect UTCN, 21.100 lei /2007
9. Grant 752 / 2006/ CEEEX, *Sisteme mecanice noi pentru cresterea eficientei conversiei energiei solare in enegie electrica*, MECSOL-PV, resp. T.Sireteanu
10. Contract 71028/2007/CNMP, *Dezvoltarea si evaluarea de sisteme complexe de control activ și semiactiv al vibrațiilor*, C. Balas
11. Grant 81036/2007/CNMP SAHA, *Servoactuator hidrostatic pentru aeronave*, resp. E. Videa
12. 81031/2007/CNMP, *Sistem inteligent pentru monitorizarea si controlul activ al structurilor*, resp. C. Rugina
13. Contract CNMP Corint, Nr.254/2006, resp. Niculescu, 112.000 lei/ 2007
14. Grant CEEEX X1C02/2006 Univ Bucuresti, resp, Gh. Ghita, 40.000 lei /2007
15. Grant CEEEX X2C26/2006 Univ Bucuresti, resp. Gh. Ghita, 11000 lei /2007
16. Grant 144/2006 INCDFP, resp. D. Bratosin, 49.900 lei /2007
17. Grant CEEEX06-11-8-2/2006 INCDFP, resp. D. Bratosin, 59.350 lei /2007
18. Grant 636/2005 INCDFP, resp. D. Bratosin, 35.000 lei /2007

19. Contract finantare 28/2007 PN II mobilitate cercetatori, Baldovin, 3920 lei /2007
20. Grant Academie Nr.101/2007, resp. T. Sireteanu, 15.000 lei /2007
21. Contract 71/052/2007, resp. Gh. Ghita, 4730 lei / 2007
22. Grant CEEEX 73/2007, resp. I. Niculescu, 100.000 lei / 2007
23. Contr. Pt.cercet. pt. tinerii doctoranziTD-139/2007, resp. C. Secara, 7292 lei /2007
24. Contr. Pt.cercet. pt. tinerii doctoranziTD-138/2007, resp. V. Mosnegutu, 7292 lei /2007
25. Contr. Pt.cercet. pt. tinerii doctoranziTD-140/2007, resp. D. Baldovin, 7083 lei /2007
26. Contr.de finantare PNCDI2, resp. T. Sireteanu, 25.000 lei /2007

## ANEXA 7.4

### CONTRACTE EXTRABUGETARE

#### 2003

1. Contract nr.1/2003 cu SC UTON SA Onesti, “Metoda si program de calcul pentru rezolvarea unosr probelme inverse de identificare a defectelor in materiale”, resp. V. Chiroiu , col. T. Badea, L.Munteanu.
2. Contract nr.9/2001-2004, Beneficiar: Institutul National de Cercetare- Dezvoltare pentru Mecanica Fina Bucuresti, „Realizarea retelei de laboratoare de cercetare în domeniul materialelor dure si extradure”, resp. L.Capitanu – Valoare 30.000 mii lei.
3. *Echipeamente complexe si tehnici informatizate de proces pentru asigurarea conformitatii functionale a discurilor diamantate*, Subcontract de finantare 1454/15.11.2001 INCD Mecanica Fina Bucuresti, resp. I. Iliuc.
4. Contract nr.9/2001, INCD-Mecanica Fina, *Realizarea retelei de laboratoare de cercetare in domeniul materialelor dure si extradure* – Program MATNATECH, resp. I. Iliuc.
5. Contract nr.2/ 2003, CELPI S.A. Bucuresti, “*Determinarea caracteristicilor dinamice functionale ale unei game de trei tipodimensiuni de amortizoare L.E.A.*”, resp. E.Videa.
6. Contract nr.4/ 2003, Electromontaj Cluj S.A., “*Determinarea caracteristicilor dinamice functionale ale antivibratorului AVB5S, in diferite variante studiate*”, resp. E.Videa.
7. Contract nr. 437/22.05.2003, beneficiar ASRO, *Elaborarea si analiza standardelor EN 60118-13, EN 60645-2, pentru adoptarea ca standarde nationale a standardelor europene si internationale*, Resp. RUGINA, I Colectiv: RUGINA,I., RACOVITA,W., NITU, GH.
8. Contract nr. 486/18.09.2003, beneficiar ASRO, *Analiza standardelor EN 60118-0,1,2 pentru adoptarea ca standarde nationale a standardelor europene si internationale*. Resp. RUGINA. I , Colectiv: RUGINA,I., NITU GH.
9. Contract nr. 353/17.05.2003, beneficiar ASRO, *Analiza in procedura simplificata a standardelor EN 60094, EN 60318, EN-61260, EN 61265 EN-61669, pentru adoptarea ca standarde nationale a standardelor europene si internationale*, Resp. RUGINA, I.
10. Contract nr. 6/18.07.2003, beneficiar S.C. SIS.ECHIPAMENT, Resp.RUGINA I , C Rugina, *Studiul si realizarea a 4 transductoare piezoceramice cu caracteristici de frecventa apropiate, pentru bai de spalare ultrasonica pe 40 kHz*.
11. Contract nr. 12/15.12.2001, act aditional nr.5/2002, cu durata pana la 15.12.2003, beneficiar: PROELECTRO, Zalau, *Studiul si realizarea unor transductoare ultrasonice pentru aplicatii de spālări si prelucrări tehnologice, activate ultrasonic*, Resp.RUGINA I

#### 2004

1. Contract 1713/2003 RELANSIN faza 4/2004 – “*Sisteme de automatizare si actionari complexe cu automate programabile a instalatiilor de flotatie cu dispecerizare de la distanta prin retea cu radio modem sau modem*”, responsabil IMS-L.Vladareanu, **21.800.000**lei.
2. *Asistenta tehnica pentru sistem masurare al masinilor unelte*, responsabil dr. ing. L. Vladareanu – contract **5.000.000 lei**
3. *Asistenta tehnica la punerea in functiune a sistemului de echilibrare prin vibratii a masinilor de rectificat ghidaje*, responsabil dr.ing. L. Vladareanu, **10.000.000 lei**
4. *Realizarea retelei de laboratoare de cercetare in domeniul materialelor dure si extradure*, Subcontract INCD-Mecanica Fina,– Program MATNATECH, resp. L. Căpitanu, **43.000.000 lei**

5. Contract nr. 2/16.02.2004, beneficiar S.C.”AIKO INDUSTRY” SRL, Resp. Contract RUGINA, I., *Studiul privind realizarea unor transductoare piezoceramice, cu caracteristici de frecventa apropiate, in jurul frecventei de 40 kHz pentru aplicatii in masurarea fortelor.* Valoare contract: **5.000.000 lei**
6. Contract nr. 6/13.10.2004, beneficiar S.C.”KMP-PRINT-TEHNIK”, Resp. Contract Odobescu, L.G., *Proiectarea si realizarea sistemului acustic pentru capul de sudura cu ultrasunete al masinii “Telsonic”* Valoare: **5.000.000 lei**
7. Contract cu ROMELECTRO S.A. nr.3/2004 cu tema “*Rezistenta mecanica, determinata fir cu fir si starea stratului protector de zinc a unui esantion de cablu de otel pentru ancorare*”, Resp. contract dr.ing. E.M. Videa. Valoare: **23.000.000 lei**
8. CONTRACT 1503 - ETAPA 2, **MENER** , Dispozitive mecanice adaptabile - ACED,cu rigiditate și amortizare controlată, pentru protecția antiseismică a construcțiilor, resp. G.Ghita, **141.000.000 lei**
9. 10. Contract economic nr. 4/2004, resp. dr. Ligia Munteanu incheiat cu SC UTON SA, Onesti, tema “Program de Evaluare a duratei de viata A materialelor utilizand metoda degradarii continue”. **20.000.000 lei.**

### 2005

1. **CERES 2004-2006**, Modelarea comportarii neliniare a rocilor din zona roca de baza – suprafata;Corelarea datelor obtinute in urma determinarilor de laborator cu cele “in situ”. Sub-contract cu Institutul Național de Cercetare-Dezvoltare pentru Fizica Pământului, București-Măgurele, în cadrul contractului: Modelarea răspunsului seismic al litosferei zonelor seismogene crustale. Aplicatie la zona activa Timisoara. (titular sub-contract IMS: dr. D.BRATOSIN) Suma /2005 = 10.000 lei
2. **CEEX 2004-2006**, *Modelarea pământurilor ca materiale vâscoelastic neliniare*, Sub-contract cu Institutul Național de Cercetare-Dezvoltare pentru Fizica Pământului, București-Măgurele, în cadrul contractului: *Cercetări avansate privind hazardul seismic local (microzonare) pentru orașe din zona extracarpatică. Studii de caz : Iași, Bacău, Buzău, Craiova.* (titular sub-contract IMS: dr. D.BRATOSIN), Suma 2005 = 30.000 lei
3. **CEEX 2004-2006** *Sistem complex computerizat pentru verificarea, diagnoza și testarea finală a echipamentelor pneumatice de frână ale vehiculelor feroviare, pentru creșterea siguranței și securității in transportul pe calea ferată*, Sub-contract cu UPB, Bucuresti (titular sub-contract IMS: dr.Ghe.Ghita) Suma/2005 = 15.000 lei
4. **MENER 2003-2005**, *Reducerea riscului seismic pe platforma CNE – Cernavodă prin utilizarea unor dispozitive mecanice pentru disiparea energiei seismice și controlul comportării dinamice a structurilor, cu aplicare și la construcțiile classic*, partener, Sub-contract cu RAAM-SITON, Măgurele (titular sub-contract IMS: dr.T. Sireteanu. Suma/2005 = 16.350 lei
5. **CONTRACT NR.816/2005**, *Cercetări privind crearea unui sistem integrat de înaltă precizie necesar realizării de investigații specifice materialelor compozite de tip dur in regim informatizat*, Subcontract INCD-Mecanica Fina,– Program MATNATECH, resp. L. Căpitanu, Valoare 4200 lei
6. **CONTRACT NR.** /2005 cu IMCDFM- București Măgurele: *Asistență tehnică pentru măsurători vibrații*, Valoare 1350 lei.

### 2006

1. Contract nr.5/2006, *Analiza comportării dinamice a seismografelor optice realizate în cadrul programului de cercetare OPTSDET* , Beneficiar: Universitatea Politehnica Din București, Centrul de Cercetare Științifică în Fizică Aplicată (CCSFA)- Valoare 950 lei

2. Contract nr.3/2006, *Determinarea indicelui de ranire a capului la impact (HIC) pentru acoperiri amortizoare de socuri*, Beneficiar SC INVEST PROSPSPEED ESM SRL- Valoare 3000 lei
3. Contract nr.9/2003-2007, Beneficiar: Institutul Național de Cercetare- Dezvoltare pentru Mecanica Fina Bucuresti, „Realizarea rețelei de laboratoare de cercetare în domeniul materialelor dure si extradure” – Valoare 42.000 RON
4. Contract nr.816/2005-2007, Beneficiar: Institutul National de Cercetare- Dezvoltare pentru Mecanică Fină București, „Cercetări privind crearea unui sistem integrat de înaltă precizie necesar realizării de investigații specifice materialelor compozite de tip dur in regim informatizat” – Valoare 22.000 RON
5. Contract nr.8/2005-2006 încheiat cu Compania Națională de Transport al Energiei Electrice „Transelectrica” SA "*Realizare Colecția de Dicționare pentru Electroenergetică*", valoare 108.000 RON (72.000 RON pentru 2006), responsabil I.M.S. (Racoviță W.).
6. Contract nr.50/2006 încheiat cu Societatea Comercială de Distribuție și Furnizare a Energiei Electrice „Electrica” SA, "*Dicționare Explicative în Domeniul Energiei Electrice*",valoare 57.000 RON, responsabil I.M.S. (Racoviță W.).

### 2007

1. Contract 5/2007 cu FRIREP Pascani, *Echiparea unui stand de proba a distribuitorului de aer KEIc*, C. Balas
2. Contract HE66/2007, beneficiar Hidroelectrica, resp. W. Racovita, 29.906 lei /2007
3. Contract INC D Mecanica Fina, X1C03/2005, resp. J. Onisoru, 44.000 lei /2007.
4. Contract nr.547 / 15.05. 2007 cu Autoritatea Nationala pentru Cercetare Stiintifica, Valoare 8000 lei, responsabil contract: Migdalovici M.