



Brief Presentation

The Institute of Atomic Physics (IFA) located at Magurele was established in 1956. It spun off from the Institute of Physics of the Romanian Academy founded in 1949 under the leadership of the eminent scientist Horia Hulubei who was also the first director of IAP. The Institute of Atomic Physics laid the foundations of a Romanian scientific research elite and a renowned scientific research school: the Institute of Atomic Physics is the cradle of the Romanian physics. The development of the Platform of Physics located at Magurele reached its peak in the 1970s bringing together a human potential and a research, educational, even a social infrastructure impressive for that time. The science performed at Magurele became widely acknowledged by the international scientific community, setting a high standard for the Romanian scientific research. In 1973 IFA was incorporated, along with other research and educational institutes throughout the country, into the Central Institute of Physics (ICEFIZ) within the State Committee for Nuclear Energy (CSEN). In January 1990, as (CSEN) gone out of existence, the Institute of Atomic Physics took over the research institutes of the Central Institute of Physics and became a public institution with legal personality.



Since 1999 when the Contract of Association with EURATOM has been signed, the institute coordinates the Romanian nuclear fusion activities carried out within the European Fusion Programme that is accomplished within the Framework Programmes of the European Union. The participation in the European Fusion Programme is performed by projects that are granted on annual international competition basis. In the period 2001-2006, the institute managed the "Basic Research of Socio-

Economic Interest Programme - CERES" of the National Plan for Research-Development and Innovation and since 2005, the Module I "R&D Complex Projects" in the fields of basic and nuclear physics and socio-economics within the Research Excellence Programme (CEEX). At present the Institute of Atomic Physics is subordinated to the National Authority for Scientific Research (ANCS) - Ministry of Education, Research and Youth (MECT).

Patrimony

- Number of buildings: 1 (Tower Building)
- Total ground area: 2576,18 mp
- Building coverage: 729,11 mp

Fields of Activity

Management of the European projects of basic and applied research and technological development in the field of plasma physics and nuclear fusion, and of basic research within the national programmes.

Main Research Directions

Research projects in the basic science, socio-economics and humanistic fields of study (CERES and CEEX Programs);

Projects of basic and applied research and technological development (EURATOM Projects).

Organizational Structure

Management units: EURATOM - Fusion projects, CERES, CEEX - Module I, (socio-economics and humanistic fields of study, nuclear physics and basic sciences) Programs; functional services.

RESEARCH AND DEVELOPMENT PRODUCTS AND SERVICES

Certified Laboratories: 0

Services – Collaborations

International collaborations

There were accomplished in average 30-40 working stages per year, within the Mobility Plans approved and entirely supported by the European Commission, in the main EURATOM partner institutions: Joint European Torus (JET) - Culham, UK (9 projects), Free University Brussels, Belgium (2 projects), Nuclear Research Centre-Mol, Belgium (2 projects), Research Centre for Nuclear Fusion - Cadarache, France (3 projects),

General Manager
Florin-Dorian BUZATU,
PhD

Human Resources

Total personnel	46
With academic training	33
Researchers	19
out of which	
Scientific researcher I	15
Scientific researcher II	2
Scientific researcher III	2
PhD.	16
Academy members	1



Research Centre Karlsruhe, Germany (7 projects), Institute for Plasma Physics, Garching, Germany (2 projects), ENEA, Frascati, Italy (5 projects), KTH, Sweden (1 project), Institute for Plasma Physics, Prague, Czech Republic (1 project), CIEMAT Madrid, Spain (4 projects), Institute for Plasma Physics, the Netherlands, Belgium (1 project), etc.

National and International Programs CERES

The Institute of Atomic Physics has accomplished the management of the CERES Program within the National Plan of Research, Development and Innovation, based on the financial contract between the Institute of Atomic Physics and the Ministry of Education, Research and Youth. In the period 2001-2004, IFA organized annual competitions for project proposals and for priority projects, and concluded with the winners of the competition a number of 682 financial contracts that were carried out between 2001-2006.

During the successive execution phases of the projects the Institute of Atomic Physics performed the scientific and economic monitoring of the intermediate, annual and final reports.

CEEX

Since the year 2005 the Institute of Atomic Physics has accomplished the management of the Module I, subject areas D8, D10 and D11 within CEEX Program, through a management unit similar to that of the CERES Program. There were concluded 189 financial contracts for the period 2005-2008 with the winners of the competition organized by ANCS in 2005 and 2006 and it was performed the scientific and economic monitoring of the intermediate and final reports.

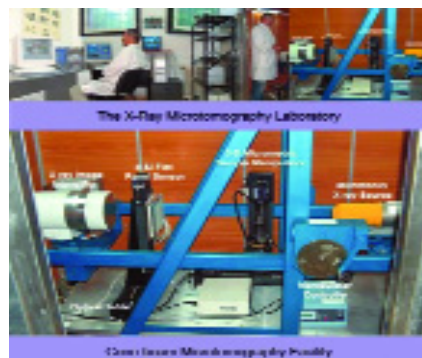
5th and 6th Framework Program of the European Union Commission

Romania participated in the 5th and 6th Framework Programs of the European Union in the field of nuclear fusion (EURATOM), since the first year in which access was granted to the acceding countries, on the basis of the Contract of Association signed with the European Commission in 1999. The Institute of Atomic Physics, nominated in 2000 as the Research Unit for unitary coordination of the activities within the projects concluded on the basis of the Contract of Association with EURATOM, ensured this coordination through the complex project "Research, development and specialization in

the field of nuclear energy (nuclear fusion)" within the frame of Corint Program, based on the contract between the IFA and the Ministry of Education, Research and Youth. The projects approved (in average 10-15 projects per year) are implemented on the basis of the financial contracts between the Institute of Atomic Physics and the executive institutions: the National Institute for Laser, Plasma and Radiation Physics, Magurele, "Horia Hulubei" National Institute for Physics and Nuclear Engineering, Magurele, the National Institute for Cryogenics and Isotope Technologies, Râmnicu Vâlcea, the University of Craiova, the Technical University of Cluj Napoca, "Alexandru Ioan Cuza" University of Iași. According to the Contract of Association, the responsibility for the quality of project execution as well as for their completion in due time rests upon the Institute of Atomic Physics.

The main achievements of the activities performed by the Institute of Atomic Physics and the executive institutions are:

- inclusion of the nuclear fusion researches performed in Romania in the European Research Area of Nuclear Fusion;
- collaboration of the Romanian researches with the most important fusion research centers and the access at high performance fusion facilities in Europe;
- formation of highly qualified scientific researches;
- enhance the competitiveness of the Romanian scientific community in the field of nuclear fusion;



- integration of Romanian researchers into the scientific committee and subcommittee structures.

The Institute of Atomic Physics and the executive institutions are visited every year by personalities from the European Commission and from EURATOM Association partners.

At present, there are in operation two Memorandums of Understanding: one with Forshungzentrum Karlsruhe, Germany,



Research & Development activity volume (RON)			
Year	Budget financed activity	Income from other activity	Total activity
2003	109,500.00	404,154.10	513,654.10
2004	123,000.00	701,531.00	824,531.00
2005	155,917.00	809,700.00	965,617.00
2006	201,000.00	1,074,912.00	1,275,912.00
2007	241,000.00	1,139,720.00	1,380,720.00
Income resources			
	From national contracts	From international contracts (Euro)	
2003	18,417,129.81	211,610.00	
2004	25,910,075.16	258,486.00	
2005	42,382,421.50	398,539.00	
2006	72,473,603.36	226,885.00	
2007	93,516,875.98	290,258.00	

concluded in 2003 (renewed in 2007) and another with ENEA, Frascati, Italy, concluded in 2004.

Participation in Consortia, Networks, Technological Platforms: 0

RESULTS OF RESEARCH-DEVELOPMENT ACTIVITY

Products, Technologies, Prototypes

Within the EURATOM projects there were achieved:

Products:

- catalysts for water detritiation systems

Facilities/Apparatus

- X-ray Microtomograph for non-destructive control of materials used in fusion facilities;
- Complex equipment for the evaluation of the irradiation effects on optical and optoelectronic components;
- Complex equipment for deposition of wolfram (W) layers on carbon fiber composite (CFC) tiles at industrial scale;
- Complex equipment for deposition of beryllium (Be) markers on CFC and inconel tiles.

Technologies:

- Technology for deposition of W layers on CFC tiles, a possible technological solution for ITER fusion reactor, selected to this end for testing on the Joint European Torus (JET)
- Technology for performing the Be markers for the JET divertor wall.

Technological Transfer: 0

Patents: 0

Organization of National & International Scientific Events

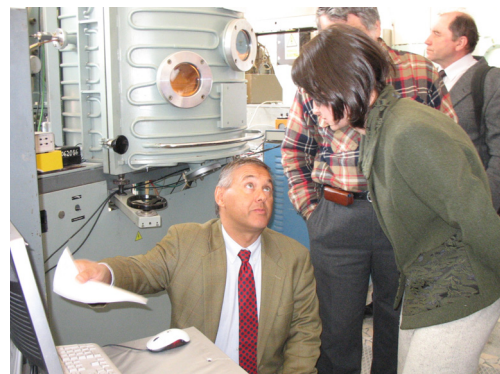
- "Days of Association EURATOM /MEdC", 10-12 November 2004, Măgurele Romania;
- "Days of Association EURATOM/MEdC", 27-28 October 2005, Iași, Romania;
- International Exhibition "Fusion Expo" 5-15 October, Bucharest and 19-25 October 2005, Iași, Romania;
- "Days of Association EURATOM /MECT", 10-11 October 2006, Cluj-Napoca, Romania;
- "Days of Association EURATOM/MECT", 1-3 October 2007, Râmnicu Vâlcea.

Outstanding Results Obtained at Fairs & Exhibitions: 0

Infrastructure Units for Technological Transfer: 0

National and International Affiliations: 0

Success Stories: 0



Publications:

Papers published in ISI quoted journals **129**
(selected publications)

1. *Stationary vortical flows in 2-dimensional plasma and planetary atmosphere*, Spineanu F., Vlad M., Physical Review Letters 94 (2005) 235003;
2. *Overview of ASDEX Upgrade results - development of integrated operating scenarios for ITER*, GFCnter S., Angioni C., Atanasiu C.V., et al., Nuclear Fusion, 10 (2005) 98;
3. *Stationary vortical flows in 2-dimensional plasma and planetary atmosphere*, Spineanu F., Vlad M., Physical Review Letters 94 (2005) 235003;
4. *Larmor radius effects on impurity transport in turbulent plasmas*, Vlad M., Spineanu F., Plasma Physics and Controlled Fusion 47 (2005) 1015-1029;
5. *Turbulent transport of the ions with large Larmor radii*, Vlad M., Spineanu F., Itoh S., Itoh K., Yagi M., Plasma Physics and Controlled Fusion 47 (2005) 281-294;
6. *Statistical properties of an ensemble of vortices interacting with a turbulent field*, Spineanu F., Vlad M., Physics of Plasmas 12 (2005) 112303;
7. *Anisotropic electrostatic turbulence and zonal flow generation*, Balescu R., Petrisor I. and Negrea M., Plasma Phys. Controlled Fusion, 47, 2145 (2005);
8. *Stochastization as a possible cause of fast reconnection in the frequently interrupted regime of neoclassical modes*, O.Dumbrajs, V. Igorchine, D. Constantinescu, H. Zohm, Physics of Plasmas 12 (2005), 110704;
9. *12, 1s22pns(1P0) autoionizing levels in Be-like Al and C ions*, Stancalie, V, Physics of Plasmas 12, 043301(2005);
10. *Complements to nonperturbative treatment of radiative damping effect in dielectronic recombination: $\Delta n = 2$ transition in C IV*, Stancalie, V. Physics of Plasmas 100705 (2005).
11. *Analysis of deuteron elastic scattering on 6,7Li up to 50 MeV*, Avrigeanu M, von Oertzen W., Fischer U., Avrigeanu V., Nucl. Phys. A759 (2005) 327;
12. *Radiated power and impurity concentrations in the Extrap-T2R reversed-field pinch*, Corre, Y., Rachlew, E., Ceconello, M., Gravesstijn, R.M., Hedqvist, A., Schunke, B., and Stancalie, V. Physica Scripta 71(2005)523;
13. *Setup for the in situ monitoring of the irradiation-induced effects in optical fibers in the ultraviolet-visible optical range*, Sporea D. G., Sporea R., Rev. Sci. Instr. 76, (2005);
14. *YBCO films and CeO₂/YSZ/CeO₂ buffer layers grown on Ni-Cr-W RABiTS with a Pd seed layer*, Celentano G., Galuzzi V., Mancini A., Rufoloni A., Augieri A., Petrisor T., Ciontea L., Gambardella U., IEEE Transactions on Applied Superconductivity, 15 (2 PART II), (2005), 2691;
15. *Deposition and characterization of Y1-xCaxBa 2Cu3O7- δ epitaxial thin films*, Cancellieri C., Augieri A., Boffa V., Celentano G., Ciontea L., Fabbri F., Galuzzi V., Petrisor T., Tebano R., IEEE Transactions on Applied Superconductivity 15 (2 PART III), (2005), 3038;
16. *Formation of nanostructured Re-Cr-Ni diffusion barrier coatings on Nb superalloys by TVA method*, Lungu C. P., I. Mustata I, G. Musa G., Lungu A. M., Zaroschi V., Iwasaki K., Tanaka R., Matsumura Y., Iwanaga Y., Tanaka H, Oi T., Fujita K.: Surf and Coat. Techn, 200 (2005) 399;
17. *Radiative Gaunt Factors*, Chelms, A.R.D., Stancalie, V., Journal of Optoelectronics and Advanced Materials, 7(2005)2405;
18. *1s22pns(1P0) autoionizing levels in Be-like Al and C ions* Stancalie, V. Physics of Plasmas 12, 043301(2005);
19. *Complex atoms modelling for plasma diagnostics*, Mihailescu, A., Stancalie, V. Journal of Optoelectronics and Advanced Materials 7(2005)2413.
20. *Impurity pinch from a ratchet process*, Vlad M., Spineanu F., Benkadda S., Phys. Rev. Letters 96 (2006)
21. *Stochastization as a possible cause for fast reconnection during MHD mode activity in the ASDEX Upgrade tokamak*, Igochine V., Dumbrajs O.,

- Constantinescu D., Zohm H., Zvejnieks G. and ASDEX Upgrade Team, Nuclear Fusion 46 (2006) 741-751;
22. *Effective collision strength for electron-impact excitation of Al10+*, Stancalie V., Pais V.F., Laser and Particle Beams 24(2006)235;
23. *Using Web Services for Remote Data Access and Distributed Applications*, Pais V., Stancalie V., Fusion Engineering and Design, 81(2006)15;
24. *YBa2Cu3O7-x films prepared by TFA-MOD method for coated conductor application*, Rufoloni A., Augieri A., Celentano G., Galluzzi V., Mancini A., Vannozi A., Petrisor T., Ciontea L., Boffa V. and Gambardella U., Journal of Physics 43 (2006) 199-202;
25. *Radial and poloidal particle and energy fluxes in a turbulent non-Ohmic plasma: An ion-cyclotron resonance heating case*, N. Pometescu, B. Weyssow, Physics of Plasmas, Vol.14, 022305 (2007);
26. *Dynamics of the radiation induced color centers in optical fibers for plasma diagnostics*, Dan Sporea, Adelina Sporea, Fusion Engineering and Design, vol. 82, issues 5-14, 2007;
27. *Analysis of angular dependence of pinning mechanisms on Ca-substituted YBa2Cu3O7- δ epitaxial thin films*, Augieri, A., Celentano, G., Gambardella, U., Halbritter, J., Petrisor, T., Superconductor Science and Technology 20 (4), pp. 381-385 (2007);
28. *YBa2Cu3O7- δ films with BaZrO₃ inclusions for strong-pinning in superconducting films on single crystal substrate*, Galluzzi, V., Augieri, A., Ciontea, L., Celentano, G., Fabbri, F., Gambardella, U., Mancini, A., Petrisor, T., Pompeo, N., Rufoloni, A., Silva, E., Vannozi, A., IEEE Transactions on Applied Superconductivity 17 (2), pp. 3628-3631 (2007);
29. *Cube textured substrates for YBCO coated conductors: Influence of initial grain size and strain conditions during tape rolling*, Rufoloni, A., Mancini, A., Petrisor, T., IEEE Transactions on Applied Superconductivity 17 (2), pp. 3436-3439 (2007);
30. *W coatings deposited on CFC tiles by combined magnetron sputtering and ion implantation technique*, C. Ruset, E. Grigore, H. Maier, R. Neu, X. Li, H. Dong, R. Mitteau, X. Courtois Physica Scripta T128, p.171-174, 2007;
31. *Tungsten Coatings for the JET ITER-like Wall Project*, H. Maier, R. Neu, H. Greuner, Ch. Hopf, G.F. Matthews, G. Piazza, T. Hirai, G. Counsell, X. Courtois, R. Mitteau, E. Gauthier, J. Likonen, G. Maddaluno, V. Philipps, B. Riccardi, C. Ruset, EFDA-JET Team, Journal of Nuclear Materials, Vol. 363-365, 2007, p 1246-1250;
32. *Tungsten and Beryllium Armour Development for the JET ITER-like Wall Project*, H. Maier, T. Hirai, M. Rubel, R. Neu, Ph. Mertens, H. Greuner, Ch. Hopf, G. F. Matthews, O. Neubauer, G. Piazza, E. Gauthier, J. Likonen, R. Mitteau, G. Maddaluno, B. Riccardi, V. Philipps, C. Ruset, C.P. Lungu, I. Uytendhouwen and JET EFDA contributors, Nucl. Fusion, Vol. 47, 2007, pp. 222-227;
33. *Investigation of Tungsten Coatings on Graphite and CFC*, R.Neu, H. Maier, E. Gauthier, H. Greuner, T. Hirai, Ch. Hopf, J. Likonen, G. Maddaluno, G. F. Matthews, R. Mitteau, V. Philipps, G. Piazza, C. Ruset, JET EFDA contributors, Phys. Scr. T128, 2007, 150 – 156;
34. *Overview of the ITER-like wall project*, G. F. Matthews, P. Edwards, T.Hirai, M. Kear, A. Lioure, P. Lomas, A. Loving, C. Lungu, H. Maier, P. Martens, D. Neilson, R. Neu, J. Pamela, V. Philipps, G. Piazza, V. Riccardo, M. Rubel, C. Ruset, E. Villedieu and M. Way, Phys. Scr. T128, 2007, 137 – 143;
35. *R&D on full tungsten divertor and beryllium wall for JET ITER-like wall project*, T. Hirai, H. Maier, M. Rubel, Ph. Mertens, R. Neu, E. Gauthier, J. Likonen, C. Lungu, G. Maddaluno, G.F. Matthews, R. Mitteau, O. Neubauer, G. Piazza, V.Philipps, B. Riccardi, C. Ruset, I. Uytendhouwen, Fusion Engineering and Design 82 (2007) 1839-1845;
36. *Role of stochastic anisotropy and shear on magnetic field lines diffusion*, M. Negrea, I. Petrisor, B.Weyssow, Plasma Physics and Controlled Fusion 49, 1767 (2007).

Papers published in the proceedings of important international conferences **194**
(selected papers)

1. *A model for resistive wall mode control*, Atanasiu C.V., Miron I.G., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, 19-23 June, 2006;

2. *Helicity fluctuation, generation of link number and effect on resistivity*, Spineanu F., Vlad M., TH/P3-12, 21st IAEA Fusion Energy Conference, Chengdu, China, October 2006;
3. *Test particle statistics and turbulence in magnetically confined plasmas*, Vlad M., Spineanu F., TH/P2-18, 21st IAEA Fusion Energy Conference, Chengdu, China, October 2006;
4. *Electron impact excitation of Fe-peak ions of astrophysical interest*, Burke P.G., Burke V.M., Hibbert A., McLaughlin B.M., Noble C.J., Ramsbottom C.A., Scott M.P., Stancalie V., the International Conference on Atomic and Molecular Data, October 15-19, 2006, Meudon, France;
5. *Multi-channel analyzer and perpendicular ion energy distribution in magnetised plasma*, Costin C., Grigoras L., Popa G., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, June 2006;
6. *A new-probe based method for measuring the diffusion coefficient in the tokamak edge region*, Brotankova J., Martines E., Adamek J., Stockel J., Popa G., Costin C., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, June 2006;
7. *Direct measurements of the plasma potential by Katsumata-type probes*, Schrittwieser R., Adamek J., Ionita C., Stockel J., Martines E., Brotankova J., Costin C., Popa G., van Oost G., van de Peppel L., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, June 2006;
8. *Floating sheath formation in a collisional magnetised plasma*, Lupu C., Tskhakaya D. D. sr., Kuhn S., Tskhakaya D. jr., Popa G., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, June 2006;
9. *Radiation effects in sapphire optical fibers*, Sporea, D., Sporea, A., 10th Europhysical conference on Defects in Insulating Materials, Milan, Italy, July 2006;
10. *Assessment of the Structural Integrity of a Prototypical Instrumented IFMIF High Flux Test Module Rig by Fully 3D X-Ray Microtomography*, Tiseanu I., Simon M., Craciunescu T., Mandache N.B., Heinzl V., Stratmanns E., Simakov S.P., Leichte D., contribution presented at the 24th SOFT, 11-15 Sep 2006 Warsaw, Poland 2006 under topic: "I - Materials Technology";
11. *Radiofrequency plasma torches at low and atmospheric pressure for surface treatments*, Ionita E.R., Dinescu G., 33rd European Physical Society (EPS) Conference on Controlled Fusion and Plasma Physics, Rome, Italy, June 2006. ECA Vol.30I, P-4.010 (2006);
12. *R&D on full tungsten divertor and beryllium wall for JET ITER-like Wall Project*, Hirai T., Maier H., Rubel M., Mertens Ph., Neu R., Gauthier E., Likonen J., Lungu C., Maddaluno G., Matthews G. F., Mitteau R., Neubauer O., Piazza G., Philipps V., Riccardi B., Ruset C., Uytendhouwen I. and JET EFDA contributors, 24th SOFT, 11-15 Sep 2006 Warsaw, Poland;
13. *Tungsten Coatings for the JET ITER-like Wall Project*, Maier H., Neu R., Greuner H., Hopf Ch., Matthews G.F., Piazza G., Hirai T., Counsell G., Courtois X., Mitteau R., Gauthier E., Likonen J., Maddaluno G., Philipps V., Riccardi B., Ruset C., EFDA-JET Team, 17th Int. Conf. on plasma surface interaction in controlled fusion devices, Hefei, China, 22-26 May, 2006;
14. *Tungsten and Beryllium Armour Development for the JET ITER-like Wall Project*, Maier H., Hirai T., Rubel M., Neu R., Mertens Ph., Greuner H., Hopf Ch., Matthews G. F., Neubauer O., Piazza G., Gauthier E., Likonen J., Mitteau R., Maddaluno G., Riccardi B., Philipps V., Ruset C., Lungu C.P., Uytendhouwen I. and JET EFDA contributors, 24th SOFT, 11-15 Sep 2006 Warsaw, Poland;
15. *R&D on full tungsten divertor and beryllium wall for JET ITER-like Wall Project*, Hirai T., Maier H., Rubel M., Mertens Ph., Neu R., Gauthier E., Likonen J., Lungu C., Maddaluno G., Matthews G. F., Mitteau R., Neubauer O., Piazza G., Philipps V., Riccardi B., Ruset C., Uytendhouwen I. and JET EFDA contributors, Proc of 24th Symposium on Fusion Technology, 11-15 September 2006, Warsaw, Poland;
16. *Optical emission diagnostic of thermionic vacuum arc plasma during beryllium film formation*, Lungu C.P., Mustata I., Zaruschi V., Lungu A.M., Chiru P., Anghel A., Burcea G., Bailescu V., Dinuta G., Din F., Proc. of 33rd European Physical Society Conference on Plasma Physics, 19-23 June, Roma, Italy, 2006;
17. *Turbulent Transport in non-Ohmic plasma: an ion-cyclotron resonance heating case*, N. Pometescu, European Fusion Theory Conference, Madrid – September 24-27, 2007;
18. *Diamagnetic effects on zonal flow generation in weak electrostatic turbulence*, M. Negrea, I. Petrisor, B. Weysow, European Fusion Theory Conference, Madrid – September 24-27, 2007;
19. *Electron diffusion in a sheared unperturbed magnetic field and an electrostatic stochastic field*, I. Petrisor, M. Negrea, B. Weysow, European Fusion Theory Conference, Madrid – September 24-27, 2007;
20. *On-line evaluation of gamma-ray irradiated large diameter optical fibers for plasma diagnostics*, Dan Sporea, Adelina Sporea, Constantin Oproiu, Proceedings of ICONE 15, 15th International Conference on Nuclear Engineering, April 22-26, 2007, Nagoya, Japan;
21. *Metal Propionate Synthesis of Epitaxial YBa2Cu3O7-x Films* L Ciotea, A Angrisani, G Celentano, T Petrisor jr., A Rufoloni, A Vannozzi, A Augieri, V Galuzzi, A Mancini, T Petrisor 8th European Conference on Applied Superconductivity, EUCAS'07 Brussels 16-20 September 2007;
22. *Operation Domains of an Inside-Gap RF Discharge*, C. Stancu, I. Luciu, R.E. Ionita, B. Mitu, G. Dinescu, Proceedings of the 28th ICPIG, July 15-20, 2007, Prague, Czech Republic, pag. 27-28;
23. *On the role of activation and particle-emission data for reaction model*, M. Avrigeanu, R. A. Forrest, A.J. Koning, F.L. Roman and V. Avrigeanu, Int. Conf. on Nuclear Data for Science and Technology (ND-2007), Nice, France, 22-27 Apr. 2007, 4 p;
24. *Marker Tiles Coating by Thermionic Vacuum Arc Method*, C. P. Lungu, I. Mustata, V. Zaruschi, A. Anghel, A. M. Lungu, P. Chiru, O. Pompilian, C. Surdu-Bob, M. Rubel, P. Coad, G. Matthews, L. Pedrick, R. Handley, T. Hirai, J. Linke and JET-EFDA Contributors, Thirteenth International Conference on Fusion Reactor Materials - ICFRM13, December 10-14, 2007, Nice, France;
25. *Influence of ions' bombardment on the beryllium film formation by thermionic vacuum arc*, C. P. Lungu, I. Mustata, A. Anghel, C. C. Surdu-Bob, P. Chiru, A. M. Lungu, V. Zaruschi, M. Ganciu, A. Surmeian, C. Diplasu, C. Oproiu, R. Minea, M. N. Nemtanu, G. Burcea, V. Turcanu, O. Dutulescu, F. Din, I. Vătă, E. Ivanov, D. Dudu, M. Lazarescu, C. Logofatu, C. Negrița, F. Miculescu, M. Miculescu, V. Midoni, 34th European Physical Society Conference on Plasma Physics, 2 - 6 July 2007, Warsaw, Poland, published in Europhysics Conference Abstracts, Vol 31F, 2007;
26. *Beryllium Coating on Inconel Tiles*, V. Bailescu, G. Burcea, C. P. Lungu, I. Mustata, A. M. Lungu, M. Rubel, P. Coad, G. Matthews, L. Pedrick, R. Handley and JET-EFDA Contributors, 13th International Conference on Fusion Reactor Materials, ICFRM 13, December 10-14, Nice, France;
27. *Arc plasma tailoring for the synthesis of quality W films*, C. Surdu-Bob, C. Iacob, C. Porosnicu, C. P. Lungu, O. Pompilian, 13th International Conference on Fusion Reactor Materials - ICFRM13, December 10-14, 2007, Nice, France;
28. *Hydrogen retention in ITER relevant mixed layer*, K. Sugiyama, K. Krieger, C.P. Lungu, J. Roth 18th International Conference on Plasma Surface Interactions, 26-30 May 2007, Spain;
29. *The Effects of CO2 Laser Beam Irradiation on Be-W Films Prepared by Thermionic Vacuum Arc Method*, C. P. Lungu, I. Mustata, A. Anghel, A.M. Lungu, C.C. Surdu-Bob, I. Morjan, E. Popovici, I. Voicu, I. Soare, D. Dudu, I. Ivanov, M. Lazarescu, A. Manea, C. Logofatu, C. Negrița, F. Miculescu, M. Miculescu, D. Bojin, EUROMAT 2007, 10-13 September, Nuremberg, Germany.

Scientific books published in Romania **0**

Scientific books published abroad **2**

1. *Soliton self-modulation of the turbulence amplitude and plasma rotation*, Spineanu F., Vlad M., Progress in Soliton Research, Editor L. V. Chen, Nova Publisher, ISBN 1-59454-769-6 (2005);
2. *Processing of Selective Contours on Flat Surfaces by Computer Assisted Beam Tracking in Plasma Polymers and Related Materials*, G. Vlad, R. Ionita, I. Ciobanu, C. Petcu, G. Dinescu eds. M. Mutlu, G. Dinescu, R. Forch, J.M. Martin-Martinez, J. Vyskocil, ISBN 975-491-194-0, Hacettepe University Press, 2005, pp. 84-90.

