"CURRICULUM VITAE"

Personal data:

Name:	Emanuele Serra
Sex:	Male
Date of birth:	25 April 1964
Place of birth:	Firenze (Italy)
Nationality:	Italian
Home address:	Vicolo degli Arcacci 29, Cap. 00061, Anguillara Sabazia (Roma). mobile: +39 348 7614969.
Workplace:	ENEA, Italian National Agency for New Technologies, Energy and Environment. Via Anguillarese 301, 00060 S.M. di Galeria. Roma.
e-mail (work):	emanuele.serra@enea.it
e-mail (home):	emanuele_serra@libero.it

Actual position:

Senior researcher at ENEA (Italian National Agency for New Technologies, Energy and Economic Suistanable Development), Casaccia Research Center (Rome), Laboratory Chemical and physical technologies

Education:

1999 Post-Doctorate in Engineering awarded at the Dipartimento di Energetica of the Politecnico di Torino (Italy).

1996 Ph.D. in Physics awarded at the Department of Pure and Applied Physics, University of Salford (England), under supervision of Professor D.K. Ross (Chairman of the Department). The thesis is entitled: Hydrogen and tritium kinetics in fusion reactor materials

1992 I graduated in physics at the "Università degli Studi" in Milan with a thesis on diffusivity and solubility of hydrogen isotopes in the martensitic steel DIN 1.4914. The research was carried on at the Joint Research Centre (JRC), Institute for Safety Technology, Ispra (VA) Italy, under the supervision of Professor E. Sindoni ("Università degli Studi", Milan) and Dr. F. Reiter (JRC).

1983 I was granted my "Diploma di maturità scientifica" at the Liceo Scientifico "Leonardo da Vinci" (Milano)

Work Experience

I am a senior researcher (permanent position) in the Materials Section of ENEA. I am involved in several research fields for developing new materials such as carbon nanotubes, biomaterials,

martensitic steels, ceramic SiC/SiC composites, new materials that undergo to severe operational conditions (e.g. corrosion and erosion at high temperature).

For a number of years I got specialised in the field of hydrogen, deuterium and tritium interactions through materials. For this study I used different methods such as the permeation gas-phase technique, the gas release technique, the microgravimetric technique (Intelligent Gravimetric Analyzer, IGA) and a plasma simulator facility.
I have been active in the production and testing of tritium permeation barriers for fusion reactors. Nevertheless my work in this area has involved the selection and preparation of surface layers by various techniques (e.g. vacuum plasma spray, chemical vapour deposition, hot-dip process, jet detonation, pack cementation, unbalanced magnetron sputtering) and the use of different methods to investigate the composition of surface layers. Thus, I have practical experience of assembling Ultra High Vacuum (UHV) equipment, and surface analysis methods such as: optical microscopy, SEM, X-ray diffraction, XPS and Auger analysis.
In the course of my research, I have become acquainted with a number of the material problems in fusion technology such as the effects of irradiation on mechanical properties, plasma wall interactions and the corrosive behaviour of some tritium breeding materials.

Additional Skills

I am referee of important Journals such as *Journal of the American Ceramic Society, Biomaterials, Journal of Nuclear Materials, Journal of Alloys and Compounds and Journal of Surface and Coatings Technology*.

Winner of the 2002 **BIOLOX® prize** awarded by **CeramTec AG, Plochingen, Germany**, for major research with regard to sliding couple wear in endoprostheses with the work: E Serra, A Tucci, L Esposito, C Piconi “Volumetric Determination of the Wear of Ceramics for Hip Joints”, Bioceramics, 23, (2002), 1131-1137.

Finally, in addition to my native language, Italian, I am fluent in English.

Leisure Time
I play classic guitar (professional level) and I enjoy playing squash, tennis, running and cycling. I like very much travelling.

Publications

1. F. Reiter, S. Alberici, J. Camposilvan, E. Serra, K.S. Forcey and A. Perujo,"Diffusivity and Solubility of Hydrogen Isotopes in the Martensitic Steel DIN 1.4914 (MANET) after thermal exposure at 900 K". Presented at the Int. Symposium on Metal Hydrogen Systems, Uppsala (Sweden) Jun 8-12, 1992. Z. f. Physik. Chemie. Bd. 181, S. 151-157 (1993), 693-699.

2. F. Reiter, S. Alberici, J. Camposilvan, G.B. Cueroni, K. Douglas, K.S. Forcey, G. Gervasini, P.L. Lolli-Ceroni, A. Perujo, E. Serra and S. Tominetti, "Hydrogen Isotopes-Material Interaction Studies at JRC-Ispra", report EUR 15269 En (1993).

3. A. Perujo, S. Alberici and E. Serra, "Surface Effects on Martensitic Stainless Steels". Presented at 2nd International Workshop on Tritium Effects on Plasma Facing Components. Nagoya University, Nagoya Japan, May 19-20, 1994, NIFS-PROC-19, 62-66, (1994).

4. G. Benamati, A. Perujo, A. Agostini, E. Serra and N. Antolotti, "Tritium Permeation Barrier Formation on DIN 1.4914 martensitic stainless steel (MANET) by Detonation Jet", proceedings of the 18th Symposium on Fusion Technology, August 22-26, Karlsruhe, Germany. Fus. Tech. 1994, (1995), Vol. 2, 1341-1344.

5. E. Serra and A. Perujo, "The Surface Rate Constants of Deuterium in the Martensitic Steel DIN 1.4914 (MANET)", J. Nucl. Mater., 223 (1995), 157-162.

6. A. Perujo, K. Douglas and E. Serra, "Low pressure tritium interaction with Inconel 625 and 316 L stainless steel surfaces: an evaluation of the recombination and absorption constants", Fusion Eng. Des., 31, (1996), 101-108.

7. H. Glasbrenner, A. Perujo and E. Serra, "Hydrogen permeation behaviour of hot-dip aluminized MANET steel", presented at the Fifth Topical Meeting on Tritium Technology in Fission, Fusion and Isotopic Applications, 28 May - 3 June 1995 Belgirate, Italy. Fusion Technology, 28, (1995) 1159-1164.

8. A. Perujo, T. Sample, E. Serra and H. Kolbe, "Low aluminium content permeation barrier coatings for DIN 1.4914 martensitic steel (MANET)", presented at the Fifth Topical Meeting on Tritium Technology in Fission, Fusion and Isotopic Applications, 28 May - 3 June 1995 Belgirate, Italy. Fusion Technology, 28, (1995), 1256-1261.

9. C. Racault, E. Serra and P. Fenici, "Reduction of deuterium permeation through SiC/SiC composites by plasma-spray deposited eutectic AL-SI", J. Nucl. Mater, 227, (1995), 50-57.

10. A. Perujo, E. Serra, H. Kolbe and T. Sample, "Hydrogen permeation reduction by post-oxidation of aluminide coatings on DIN 1.4914 martensitic steel (MANET)". Presented at the Seventh International Conference on Fusion reactor materials, 25-29 September 1995 Obnisk, Kaluga Region, Russia. J. Nucl. Mater, 233-237, (1996), 1102-1106.

11. C. Racault, E. Serra and P. Fenici, "Formation of permeation barriers on ceramic SiC/SiC composites". Presented at the Seventh International Conference on Fusion reactor materials, 25-29 September 1995 Obnisk, Kaluga Region, Russia. J. Nucl. Mater, 233-237, (1996), 1262-1265.

12. C. Racault, E. Serra, P. Fenici and F. Brossa, "Deuterium permeation properties of plasma-sprayed eutectic AL-SI coated on ceramics SiC/SiC composites". Presented at the Fourth Conference of European Ceramic Society, 2-6 October 1995 Riccione, Italy, FOURTH EURO CERAMICS- Vol. 9 - pp. 335-342.

13. E. Serra, A. Perujo, E. Franconi and S. Casadio, "Tritium permeation barrier by pack cementation aluminization of steel tubes: nuclear (TRINE experiment) and non nuclear tests". Presented at the Fourth International Workshop on Ceramic Breeder Blanket Interactions, Kyoto, Japan, October 9-11, 1995.

14. C. Racault, P. Fenici, E. Serra, H. Kim, E.J. Nicol, “Effect of impurity scattering on a d + s wave superconductor: Low temperature behavior of penetration depth”, Journal of Physics and Chemistry of Solids, (Impact Factor: 1.53). 01/1995; 56(12). DOI: 10.1016/0022-3697(95)00136-0

15. E. Serra, A. Perujo, K.S. Forcey, "Influence of traps on deuterium diffusion in the martensitic steel DIN 1.4914 MANET". Presented at XIII Congresso Nazionale sulla Scienza e Tecnologia del Vuoto, Milano, Italy, February 14-16, 1996, Vuoto, XXVI, N. 3 – Luglio-Settembre (1997), 18-23.

16. C. Labatut, D. Gilliland, C. Racault, E. Serra, F. Brossa and P. Fenici, "C.V.D. Coatings as Diffusion Barrier for Ceramics", The Materials Challange 9, February 1996, page 29.

17. A. Perujo, E. Serra, S. Alberici, S. Tominetti and J. Camposilvan, "Hydrogen in the martensitic DIN 1.4914: a review", J. Alloys Comp., 253-254, (1997), 152-155.

18. E. Serra, A. Perujo and G. Benamati, "Tic and surface oxidation as hydrogen permeation barrier in F82H: a comparison", proceedings of the 19th Symposium on Fusion Technology, September 16-20, Lisbon, Portugal. Fus. Tech. 1996, (1997), Vol. 2, 1439-1442.

19. E. Serra and A. Perujo, "Influence of the surface conditions on permeation in the deuterium-MANET system", J. Nucl. Mater., 240, (1997), 215-220.

20. E. Serra and A. Perujo, "Hydrogen Isotopes Interaction with the unirradiated and He-irradiated Pd-25%Ag alloy", report EUR 16454 EN.

21. E. Serra, Ph.D. thesis, report EUR 16471 EN.

22. E. Serra, A. Perujo and G. Benamati, "Influence of traps on deuterium behaviour in the low activation martensitic steels F82H and Batman", J. Nucl. Mater., 245, (1997), 108-114.

23. E. Serra, C. Racault and P. Fenici, "Formation of hydrogen permeation barriers on SiC/SiC: an overview", in SiC/SiC Ceramic Composites for Fusion Structural Applications, report EUR 17352 EN.

24. E. Serra, H. Glasbrenner and A. Perujo, "Hot-dip aluminium deposit as permeation barrier for MANET steel", presented at the Fourth International Symposium on Fusion Nuclear Technology, April 6-11, 1997, Tokyo Japan, Fusion Eng. Des., 41, (1998), 149-155.

25. E. Serra and G. Benamati, "Hydrogen behaviour in the aged low activation martensitic steel F82H for fusion reactor applications", Material Science and Technology, 14, (1998), 573.

26. E. Serra and G. Benamati, "Hydrogen behaviour in the aged low activation martensitic steel F82H for fusion reactor applications" ENEA report RT/ERG/FUS/97/6, ISSN/0393-6317.

27. E. Serra, M. Kemali, A. Perujo and D.K. Ross, "Hydrogen and deuterium diffusion in the Pd-25%Ag alloy", Metall. and Mat. Transactions A – Physical Metallurgy and Material Science, Vol 29, Iss 3A, (1998), 1023-1028.

28. E. Serra and A. Perujo, “Hydrogen and deuterium transport and inventory parameters in a Cu-0.65Cr-0.08Zr alloy for fusion reactor applications”, presented at the 8th ICFRM conference (October 26-31, 1997, Sendai, Japan), J. Nucl. Mater., 258-263) (PART 1 A), (1998), 1028-1032.

29. E. Serra, G. Benamati and O.V. Ogorodnikova, “Hydrogen isotopes transport parameters in fusion reactor materials”, J. Nucl. Mater., 255 (2-3), (1998), 105-115.

30. E. Serra, G. Benamati, A. Casagrande, E. Filippini and M. Agostini, "Hydrogen permeation barrier for MANET steel by means of the Detonation Jet process". Proceedings of the First International Workshop on

Liquid Metal Blanket Experimental Activities, September 16-18, 1997, CEA Headquarters, Paris, France, CEA report DMT 97/442, SERMA/LCA 2113, pag 191.

31. E. Serra, C. Fazio, A. Sabbioni, A. Laino, “ENEA activities on tritium permeation barrier development”, ENEA annual report 1997, ERG FUS ISP CMAT 004.

32. G. Benamati, M. Beghini, L. Bertini, E. Serra, R. Valentini, “Hydrogen related problems in martensitic steels”, ENEA report ERG FUS ISP CMAT 005.

33. E. Serra, P.J Kelly, D.K. Ross and R.D. Arnell, "Alumina sputtered on MANET as an effective deuterium permeation barrier", J. Nucl. Mater., 257, (1998), 194-198.

34. A. Perujo, C. Housiadas, E. Serra, L. Sedano and J. Camposilvan, “ITER Task T227: Tritium Permeation and Inventory-H/D/T Gas and Ion-Driven Permeation”, final report EUR 18078 EN.

35. C. Chabrol, F. Schuster, E. Serra, G.Le Marois, "Development of Fe-Al CVD coatings as tritium permeation barrier", proceedings of the 20th Symposium on Fusion Technology, September 7-11, 1998, Marseille, France, 1227-1230.

36. E. Serra, C. Fazio, G. Benamati, "Thermo-mechanical fatigue effects onto the tritium permeation barrier efficiency in liquid Pb-17Li: first results", proceedings of the 20th Symposium on Fusion Technology, September 7-11, 1998, Marseille, France, 1219-1222.

37. O. V. Ogorodnikova, M. A. Fütterer, E. Serra, G. Benamati, J.-F. Salavy, and G. Aiello, “Hydrogen isotope permeation through and inventory in the first wall of the water cooled Pb-17Li blanket for DEMO”, J. Nucl. Mater., 273 (1), (1999), 66-78.

38. O. V. Ogorodnikova, M. A. Fütterer, E. Serra, and G. Benamati, “Calculations of tritium re-emission rate in the DEMO first wall”, J. Nucl. Mater., 270 (3), (1999), 368-371.

39. E. Serra, C. Fazio, A. Sabbioni, G. Benamati, “ENEA Annual report of the tasks WPA 4.2.3 and Underlying technology”, ENEA annual report 1998, ERG FUS ISP MAT LB-A-R-004.

40. C. Martini, E. Serra, C. Fazio, V. Imbeni, “Controllo della concentrazione di O_2 in Pb e Pb-Bi mediante insufflazione di miscele Ar/H_2”, ERG FUS ISP MAT HS-A-N-001, 1999.

41. C. Fazio, L. Degli Esposti, M. Agostini, E. Serra, “ELTRA OH 900: TARATURA E MISURE”, ERG FUS ISP MAT HS-A-N-003, 1999.

42. C. Fazio, V. Imbeni, C. Martini, E. Serra, M. Servadei, “MISURA DEL CONTENUTO DI OSSIGENO IN Pb, Pb-Bi E METODOLOGIA DI PREPARAZIONE DEI CAMPIONI”, ERG FUS ISP MAT HS-A-N-002, 1999.

43. C. Fazio, K. Stein-Fechner, E. Serra, H. Glasbrenner, G. Benamati “Investigation on the suitability of plasma sprayed Fe-Cr-Al coatings as tritium permeation barrier”, J. Nucl. Mater., 273 (3), (1999), 233-238.

44. E. Serra, E. Rigal, G. Benamati “Hydrogen and deuterium permeation measurements on the Double-Wall tubes material for the Water-Cooled Pb-17Li DEMO Blanket”, Fusion Eng. Des., 49-50, (2000), 675-679.

45. G. Benamati, E. Serra and C.H. Wu “Hydrogen and deuterium transport and inventory parameters through W and W-alloys for fusion reactor applications”, J. Nucl. Mater., 283-287, (2000), 1033-1037.

46. A. Aiello, C. Fazio, M. Chini, Z. Yao, D. Levtchouk, E. Serra, “Tritium Permeation Barrier qualification in Pb-17Li”, Annual report on EU task WPA 4.2.1, ENEA annual report 1999, ERG FUS ISP MAT LB-A-R-008.

47. A. Aiello, G. Benamati, M. Chini, C. Fazio, E. Serra, Z. Yao, “HYDROGEN PERMEATION THROUGH TRITIUM PERMEATION BARRIER IN Pb-17Li”, Fusion Eng. Des. 58-9, (2001), 737-742.

48. E. Serra “Caratterizzazione tridimensionale della superficie di campioni di materiale ceramico ottenuta con il profilometro ottico ZYGO NewView 5000” rapporto tecnico ENEA, 2000.

49. E Serra, A Tucci, L Esposito, C Piconi “Volumetric Determination of the Wear of Ceramics for Hip Joints”, Biomaterials, 23, (2002), 1131-1137.

50. E. Serra “Caratterizzazione tridimensionale ottenuta con il profilometro ottico ZYGO NewView 5000 di superfici di resine composite sottoposte a varie tecniche di finitura e lucidatura**”** rapporto tecnico ENEA, 2000.

51. A. Bucci, G.P. Celata, E. Serra, G. Zummo, “Analisi microscopica tridimensionale della superficie interna e caratterizzazione termoidraulica di capillari in acciaio da 172, 290 e 520 micron” rapporto tecnico ENEA, ERG-ING, EIGE 01/017, 2001.

52. L. Falzetti, B. Sardella, E. Serra, “Progetto CERTEM – Strumentazione Speciale “Rugosimetro areare”” rapporto tecnico ENEA, ERG-ING, EIHE 01023, 2001.

53. E. Serra, “Apparecchiatura per lo studio della permeazione dei gas nei materiali dalla temperatura ambiente fino 1800 ^{o}C” rapporto tecnico ENEA, FS-CE-LA03, Luglio 2002.

54. A. Bucci, G.P. Celata, M. Cumo, E. Serra, G. Zummo, "Water single-phase fluid flow and heat transfer in capillary tubes", 1st Int. Conf. On Microchannels and Minichannels, April 24-25, 2003, Rochester, New York USA, ICM2003-1037, 319-326.

55. A. Bucci, G.P. Celata, M. Cumo, E. Serra, G. Zummo, "Water single-phase fluid flow and heat transfer in capillary tubes", Thermal Science and Engineering, Vol. 11, n.6, pp. 81-89, 2003.

56. L. Esposito, E. Serra, A. Tucci, mailto:esposito@cencerbo.itE. Rastelli, “Surface abrasion of glazed ceramic tiles: a new investigation technique”, presented at Eighth Conference & Exhibition of the European Ceramic Cociety, 29 June - 03 July 2003, Istanbul, Turkey, Key Engineering Materials, 264-268 (II), (2004) 1515-1518.

57. E. Serra, A. Calza Bini, G. Cosoli, L. Pilloni, “HYDROGEN PERMEATION MEASUREMENTS ON ALUMINA”, Journal of the American Ceramic Society, 88 (1), (January 2005), 15-18.

58. A. Assettati, A. Grasso, V. Lombardi, B. Sardella, E. Serra, E. Cordano, C. Mao, M. Bet, “Materiali per alte temperature”, rapporto tecnico ENEA, ENE-IMP, EHE 04004, 2004.

59. A. Rizzo, M. A. Signore, M. Penza, M. A. Tagliente, F. De Riccardis, E. Serra, “RF sputtering deposition of alternate TiN/ZrN multilayers hard coatings”, Thin Solid Films, Vol. 515, Spec. Issue 2, (October 2006), 500-504.

60. Alvisi, G. Galtieri, L. Giorgi, R. Giorgi, E. Serra, M.A. Signore, “Sputter Deposition of Pt Nanocluster and Thin Film on PEM Fuel Cell Electrodes”, presentato all’ICMCTF (The International Conference On Metallurgical Coatings And Thin Films), 2005 May 2-6, San Diego, California, USA, Surface and Coatings Technology, 200 (5-6) (2005) 1325-1329.

61. L. Giorgi, L. Pilloni, R. Giorgi, E. Serra, Alvisi, G. Galtieri, A. Cemmi, C. Paoletti, M. Pasquali, “Electrodeposition and Sputter Deposition of Platinum Nanoparticles on Gas Diffusion Electrodes”, proceedings del 3rd European Forum on PEFC (Polymer Electrolyte Fuel Cell Forum), 2005 July 4-8, Lucerne Switzerland, PA36-143.

62. A. Rizzo, M. A. Signore, L. Mirenghi, E. Serra, “Properties of ZrNx films x>1 deposited by reactive R.F. magnetron sputtering”, Thin Solid Films, Vol. 515, 4, (October 2006), 1307-1313.

63. "Rapporto di avanzamento sulle attività di ricerca sulle membrane ceramiche compatte denominate SFC2 con trasporto selettivo di ossigeno", RT MAT-TS(2004)01

64. F. Antolini, T. Di Luccio, E. Serra, P. Aversa, L. Tapfer, S. Sangiorgi, "Deposition and Characterization of Langmuir-Blodgett films of cadmium arachidate/SWCNTs composites", Surface and Interface Analysis, 38 (2006) 1285-1290.

65. E. Serra, M. Alvisi, E. Casagrande, G. Bezzi, C. Mingazzini, A. La Barbera, "Oxygen- and hydrogen-permeation measurements on-mixed conducting SrFeCo0.5Oy ceramic membrane material", Renewable Energy 33 (2008) 241–247. Presented at EMRs 2006.

66. R. Rossi, M. Alvisi, G. Galtieri, R. Giorgi, R. Pentassuglia, A. Rizzo, E. Serra, M. A. Signore, "Low temperature growth of carbon nanotubes / carbon nanowalls by RF-PECVD", presented at E-MRS IUMRS ICEM 2006 Spring Meeting Nice, France, May 29 – June 2, 2006.

67. F. Fabbri, E. Borsella, M. Carpanese, R. Fantoni, R. Caterino, R. D'Amato, M. Falconieri and E. Serra, "Size and Surface Control of Optical Properties in Silicon Nanoparticles", presented at CIMTEC 2006, Advanced in Science and Technology, 45, (2006), 2620-2626.

68. M. Alvisi**,** G. Galtieri, L. Giorgi, E. Serra, T. Di Luccio and R. Giorgi, "Evolution of Pt nanoclusters morphology on PEMFC electrode due to methanol oxidation reaction studied by electron microscopy and synchrotron grazing incidence x-ray diffraction", presented at CIMTEC 2006, Advanced in Science and Technology, 51, (2006), 181-186.

69. M. Alvisi, T. Di Luccio, G. Galtieri, L. Giorgi, E. Piscopiello, E. Serra and R. Giorgi "ULTRA-LOW LOADING OF SPUTTERED PT AND PT-AU NANOCLUSTERS AS CATALYST FOR PEM FUEL CELL ELECTRODES", presented at VIII Italian Meeting on "NANOPHASE MATERIALS" – Rome, October 3-4, 2006

70. R. Rossi, M. Alvisi, G. Galtieri, R. Giorgi, R. Pentassuglia, A. Rizzo, E. Serra, M. A. Signore, "Low temperature growth of carbon nanotubes / carbon nanowalls by RF-PECVD", presented at VIII Italian Meeting on "NANOPHASE MATERIALS" – Rome, October 3-4, 2006

71. M. Penza, G. Cassano, R. Rossi, A. Rizzo, M. A. Signore, M. Alvisi, T. Dikonimos, E. Serra, and R. Giorgi, "Effect of growth-catalysts on gas sensitivity in carbon nanotube films-based chemiresistive sensors", Applied Physics Letters, 90 103101 (2007)

72. M. Penza, G. Cassano, R. Rossi, M. Alvisi, A. Rizzo, M. A. Signore, Th. Dikonimos, E. Serra, R. Giorgi "Enhancement of sensitivity in gas chemiresistors based on carbon nanotube surface functionalized with noble metal (Au, Pt) nanoclusters" Appl. Phys. Lett. 90, 173123 (2007)

73. M. Penza, M. Alvisi, G. Cassano, T. Dikonimos, N. Lisi, A. Rizzo, R. Rossi, E. Serra, M.A. Signore, and R. Giorgi, "Nanosized metal clusters PVD-deposited for carbon nanotube films growth and as surface-catalysts for enhanced gas sensing applications", will be presented at NANOMEC06 Symposium on Materials Science & Materials Mechanics at the Nanoscale 19-23 November 2006, Politecnico di Bari, Bari, Italy

74. M. Penza, G. Cassano, R. Rossi, M. Alvisi, M.A. Signore, A. Rizzo, Th. Dikonimos, N. Lisi, E. Salernitano, E. Serra, R. Giorgi "Metal functionalised carbon nanotubes thin films gas chemiresistors", presented at AISEM, Associazione Italiana Sensori e Microsistemi, Napoli, 12-14 febbraio 2007, Proceedings AISEM 2007, G. Di Francia, P. Maddalena, I. Rendina, C. Di Natale, A. D'Amico Editors, World Scientific, Singapore, pp. 177-184.

75. G. Maddaluno, M. Di Fino, F. Orsitto, A. Rufoloni, M. Montecchi, E. Nichelatti, E. Serra, A. Litnovsky, G. Sergienko, G. De Temmerman, L. Marot, "Tests of rhodium -coated molybdenum first mirrors for ITER diagnostics", presented at the 34th European Physical Society on Controlled Fusion and Plasma Physics (EPS2007), 02 - 06 July 2007, Warsaw, Poland, Volume 31, Issue 1, 2007, Pages 379-382.

76. F. Bezzi, M. Montecchi, L. Pilloni, E. Serra, “Preparazione di rivestimenti antiriflesso per l’impianto solare termodinamico” rapporto tecnico ENEA, ING-P931-R-001

77. F. Bezzi, M. Montecchi, L. Pilloni, E. Serra, S. Albonetti, S. Sangiorgi, "Antireflective properties of porous silica thin films obtained with the dip-coating process", J.G. Heinrich and C. Aneziris, Proc. 10th ECerS Conf., Göller Verlag, Baden-Baden, 2007, 261-264, ISBN: 3-87264-022-4

78. M. Penza, R. Rossi, M. Alvisi, G. Cassano, D. Suriano, R. Pentassuglia, M. A. Signore, Th. Dikonimos, E. Serra, R. Giorgi “GAS SENSORS FABRICATED FROM CARBON NANOTUBES FILMS FUNCTIONALISED WITH NANOCLUSTERS OF Au, Pt, AND Pd”, Proceedings of AISEM 2008, World Scientific Publication - Singapore, Eds. C. di Natale A. D'Amico, E. Martinelli, R. Paolesse, ISBN: 981-283-597-0, pag. 130-136.

79. M. Penza, P. Aversa, G. Cassano, R. Rossi, M. Alvisi, , D. Suriano, E. Serra, M. Benetti, D. Cannata, F. Di Pietrantonio, E. Verona, “SURFACE ACOUSTIC WAVE VAPOR SENSOR COATED WITH CARBON NANOTUBES-BASED NANOCOMPOSITE LANGMUIR-BLODGETT FILM”, Proceedings of AISEM 2008, World Scientific Publication - Singapore, Eds. C. di Natale A. D'Amico, E. Martinelli, R. Paolesse, ISBN: 981-283-597-0, pag. 124-129.

80. M. Penza, P. Aversa, D. Suriano, G. Cassano, E. Serra, E. Comini, G. Faglia, G. Sberveglieri, "Surface Acoustic Wave 915 MHz Resonator Oscillator Gas Sensors Using SnO2 Nanowires-Based Nanocomposite Layer", presented 2008 IEEE Sensors, SENSORS 2008; Lecce; Italy; 26 October 2008 through 29 October 2009; Code 76424, DOI: 10.1109/ICSENS.2008.4716418 Proceedings of IEEE Sensors 2008, art. no. 4716418, pp. 204-207

81. M. Penza, R. Rossi, M. Alvisi, M. A. Signore, E. Serra, R. Paolesse, A. D’Amico, C. Di Natale, "Gas Sensors Based on Carbon Nanotubes Networked Films Functionalized with Metalloporphyrins Layer", presented at IEEE SENSORS 2008, 26-29 October 2008, Lecce. last minute paper.

82. M. Penza, G. Cassano, R. Rossi, M. Alvisi, M. A. Signore, and A. Rizzo, "Surface modification of carbon nanotubes with Au nanoclusters for enhanced NO_2 gas sensing application", Journal of Sensor vol. 2008, Article ID 107057, 8 pages, 2008. doi:10.1155/2008/107057.

83. Claudia Paoletti, Alessia Cemmi, Leonardo Giorgi, Rossella Giorgi, Luciano Pilloni, Emanuele Serra, Mauro Pasquali, "Electro-deposition on carbon black and carbon nanotubes of Pt nanostructured catalysts for methanol oxidation", Journal of Power Sources 183 (2008) 84-91.

84. L. Giorgi, E. Serra, C. Paoletti, A. Cemmi, "Nanostructured Electrocatalysts for Polymer Electrolste fuel cells", ENEA RT/2008/5/FIM.

85. M. Penza, R. Rossi, M. Alvisi, M. A. Signore, E. Serra, R. Paolesse, C. Di Natale, A. D’Amico, "Metalloporphyrins-modified carbon nanotubes networked films-based chemical sensors for enhanced gas sensitivity ", presented at EUROSENSORS 2008, 07-10 September 2008, Dresda, Germany, Sensors and Actuators B 144 (2010) 387–394.

86. A. Cemmi, A. Pozio, E. Serra, Membrane catalizzate per elettrolizzatori a membrana polimerica", ENEA RT/2008/6/TER.

87. M. Penza, R. Rossi, M. Alvisi, G. Cassano, M. A. Signore, E. Serra, R. Giorni, “Pt- and Pd-nanoclusters functionalized carbon nanotubes networked films for sub-ppm gas sensors”, Sensor and Actuator B - Chemical, 135 (1), (2008), pp. 289-297.

88. C. Paoletti, A. Cemmi, E. Serra and A. Pozio, “PEFCs electrodes based on carbon black supporting electrocrystallized nanostructured Pt particles” presented at 2nd International Conference on Advanced Nano Materials, June 22nd -25th 2008, Aveiro, Portugal, **DOI:** 10.1504/IJNM.2010.029935, Int. J. Nanomanufacturing, Volume 5, Issue 1-2, 2010, Pages 179-193.

89. A. Cemmi, C. Paoletti, E. Serra and A. Pozio, “Membrane-electode assembly optimization for polymer electrolyte membrane electrolyzers” presented at 2nd International Conference on Advanced Nano Materials, June 22nd -25th 2008, Aveiro, Portugal.

90. R.Giorgi, L.Giorgi, M.Alvisi, Th.Dikonimos, N.Lisi, E.Serra, “Nanomaterials for polymeric electrolyte fuel cells”, NANOTEC IT NEWSLETTER numero giugno 2008, 22-26.

91. M. Penza, R. Rossi, M. Alvisi, M.A. Signore, G. Cassano, E. Piscopiello, E. Serra, M. Falconieri, "Metal-modified and vertically-aligned carbon nanotubes films gas sensors", presented at IEEE SENSORS 2008, 26-29 October 2008, Lecce.

92. M. Penza, R. Rossi, M. Alvisi, M. A. Signore, G. Cassano, D. Dimaio, R. Pentassuglia, E. Piscopiello, E. Serra, M. Falconieri, "Characterization of metal-modified and vertically aligned carbon nanotubes films for functionally enhanced gas sensors applications", presented at Semiconductor Gas Sensors, SGS-2008, Zakopane 14-19 September 2008, Poland, Thin Solid Films, 517 (2009) 6211-6216.

93. M. Penza, R. Rossi, M. Alvisi, G. Cassano, E. Serra, "Functional characterization of carbon nanotube networked films functionalized with tuned loading of Au nanoclusters for gas sensing applications", Sensors and Actuators B 140 (2009) 176–184

94. M. Penza, R. Rossi, M. Alvisi, and M. A. Signore, E. Serra, " Effects of reducing interferers in a binary gas mixture on NO_2 gas adsorption using carbon nanotube networked films based chemiresistors", Journal of Physics D: Applied Physics, 42 (2009) 072002.

95. M. Penza, R. Rossi, M. Alvisi, M. A. Signore, G. Cassano, R. Pentassuglia, D. Suriano, V. Pfister, "Metal-functionalized and vertically-aligned multi-walled carbon nanotube layers for low temperature gas sensing applications" presented at 14th Italian Conference on Sensors and Microsystems, AISEM 2009; Pavia; Italy; 24 February 2009 through 26 February 2009; Code 80319, DOI: 10.1007/978-90-481-3606-3_35, Lecture Notes in Electrical Engineering, Volume 54 LNEE, 2010, Pages 185-191.

96. A. Cemmi, C. Paoletti, A. Pozio and E. Serra, “Electro-deposited platinum on activated multiwall carbon nanotubes: Single-cell tests, morphological and electrochemical characterizations” 3rd European Fuel Cell Technology and Applications - Piero Lunghi Conference, EFC 2009; Rome; Italy; 15 December 2009 through 18 December 2009; Code 110942, EFC 2009 - Piero Lunghi Conference, Proceedings of the 3rd European Fuel Cell Technology and Applications Conference 2009, Pages 327-328

97. M. Penza, R. Rossi, M. Alvisi, and E. Serra, "Metal-modified and vertically-aligned carbon nanotube sensors array for landfill gas monitoring applications", Nanotechnology 21 (2010), Issue 10, Article number 105501, (14pp).

98. L. Giorgi, R. Giorgi, S. Gagliardi, E. Serra, M. Alvisi, M.A. Signore, E. Piscopiello, "Platinum-Gold Nanoclusters as Catalyst for Direct Methanol Fuel Cells", presented at NANOSMAT 2009 (Roma, October 2009), Journal of Nanoscience and Nanotechnology, Vol. 11, 8804–8811, 2011.

99. Michele Penza, Riccardo Rossi, Marco Alvisi, Daniele Valerini, Emanuele Serra, Roberto Paolesse, Eugenio Martinelli, Arnaldo D’Amico, Corrado Di Natale, "Metalloporphyrins-functionalized carbon nanotube networked films for room-temperature VOCs sensing applications”, Proceedings of the Eurosensors XXIII conference, Procedia Chemistry 1 (1), (2009), pp. 975-978.

100. D. Laurito, L. Lamazza, G. Garreffa, E. Serra, M.G. Ammendolia, A. De Biase, “L’efficacia della strumentazione piezoelettrica nel trattamento parodontale della superficie radicolare: studio comparativo in procedure di scaling e root planing”, Genova 30-31 ottobre 2009 Simposio Chirurgia Ossea Piezoelettrica Stato Dell’arte e Nuove Prospettive

101. M. Penza, R. Rossi, M. Alvisi, D. Valerini, E. Serra, E. Martinelli, C. Di Natale, A. D'Amico, " Thermoelectric properties of carbon nanotubes layers ", presented at 15th Italian Conference on Sensors and Microsystems, AISEM 2010, Messina, Italy, 8-10 February 2010, DOI: 10.1007/978-94-007-1324-6_10, Sensors and Microsystems, Lecture Notes in Electrical Engineering, Volume 91, 2011, pag. 73-79

102. M Penza, M Alvisi, R Rossi, E Serra, R Paolesse, A D'Amico and C Di Natale, "Carbon nanotube films as a platform to transduce molecular recognition events in metalloporphyrins", Nanotechnology 22 (2011), Article number 125502, (8pp).

103. M Penza, R Rossi, M Alvisi, D. Valerini, E Serra, R Paolesse, E. Martinelli, A. D'Amico, and C. Di Natale, "Metalloporphyrin-modified carbon nanotube layers for gas microsensors", DOI: 10.1166/sl.2011.1643, Sensor Letters, Volume 9, Issue 2, April 2011, Pages 913-919

104. M. Penza, R. Rossi, M. Alvisi, D. Valerini, G. Cassano, E. Serra, R. Paolesse, E. Martinelli, A. D'Amico, C. Di Natale, "Gas Microsensors with Metalloporphyrin-Functionalized Carbon Nanotube Networked Layers", presented at 15th Italian Conference on Sensors and Microsystems, AISEM 2010, Messina, Italy, 8-10 February 2010, DOI: 10.1007/978-94-007-1324-6_15, Sensors and Microsystems, Lecture Notes in Electrical Engineering, Volume 91, 2011, pag. 105–111.

105. M. Penza, P. Aversa, R. Rossi, M. Alvisi, G. Cassano, D. Suriano, E. Serra, "Enhanced Mass Sensitivity of Carbon Nanotube Multilayer Measured by QCM-Based Gas Sensors", presented at 15th Italian Conference on Sensors and Microsystems, AISEM 2010, Messina, Italy, 8-10 February 2010, DOI: 10.1007/978-94-007-1324-6_42, Sensors and Microsystems, Lecture Notes in Electrical Engineering, Volume 91, 2011, pag. 271–277.

106. R. Giorgi, L. Giorgi, S. Gagliardi, E. Salernitano, M. Alvisi, Th. Dikonimos, N. Lisi, D. Valerini, M.F. De Riccardis , E. Serra, "Nanomaterials-based PEM electrodes by combining chemical and physical depositions", Journal of Fuel Cells Science and Technology, AUGUST 2011, Vol. 8 / 041004-1

107. M. Penza, R. Rossi, M. Alvisi, D. Suriano, E. Serra, "Pt-modified carbon nanotube networked layers for enhanced gas microsensors", presented at SGS-2010, special issue of Thin Solid Films 520 (2011) 959–965.

108. A. Cemmi, A. Pozio and E. Serra, "Preparazione e caratterizzazione di materiali anodici e catodici per elettrolizzatori ad eletrolita polimerico", ENEA RT/2010/39/ENEA.

109. Alfonso Pozio, Alessia Cemmi, Francesco Mura, Amedeo Masci, Emanuele Serra, Rodrigo Ferreira Silva, "Long-term durability study of perfluoropolymer membranes in low humidification conditions", J Solid State Electrochem, DOI 10.1007/s10008-010-1193-7, (2011) 15:1209–1216

110. M. Alvisi, P. Aversa, G. Cassano, E. Serra, M. A. Tagliente, M. Schioppa, R. Rossi, D. Suriano, E. Piscopiello, M. Penza, "Organic vapor detection by QCM sensors using CNT-composite films", 16th Conference AISEM 2011; Rome; Italy; 7-9 February 2011, DOI**:** 10.1007/978-1-4614-0935-9_14, Volume 109 LNEE (Lecture Notes in Electrical Engineering), 2012, Pages 79-85.

111. R. Rossi, M. Alvisi, G. Cassano, R. Pentassuglia, D. Dimaio, D. Suriano, E. Serra, E. Piscopiello, , M. Penza, "Tuned sensing properties of metal-modified carbon-based nanostructures layers for gas microsensors", presented at 16th Conference on Italian Association of Sensors and Microsystems, AISEM 2011, Rome, 7-9 February 2011, DOI: 10.1007/978-1-4614-0935-9_20, AISEM 2011 Sensors and Microsystems Lecture Notes in Electrical Engineering, Volume 109, 2012, pp 115-119.

112. G. Di Girolamo, F. Marra, C .Blasi, E. Serra, T. Valente, "Microstructure, mechanical properties and thermal shock resistance of plasma sprayed nanostructured zirconia coatings", Ceramics International 37 (2011) 2711–2717.

113. F. D'Annibale, L. Ghidini, A. Mariani, L. Pilloni, E. Serra and H. Poth, "Effect on Metal Surfaces induced by a Jet of Different Nanofluids", Nanotechitaly 2011, Venice, 23-25 November 2011.

114. Gian Piero Celata, Francesco D'Annibale, Andrea Mariani, Salvatore Sau, Emanuele Serra, Roberto Bubbico, Carla Menale, Heiko Poth, "Experimental Results of Nanofluids Flow Effects on Metal Surfaces", *Chemical Engineering Research and Design*, 92 (2014) 1616–1628.

115. Rosaria D'Amato, Mauro Falconieri, Serena Gagliardi, Ernest Popovici, Emanuele Serra, Gaetano Terranova, Elisabetta Borsella, "Synthesis of ceramic nanoparticles by laser pyrolysis: from research to applications", Journal of Analytical and Applied Pyrolysis 104 (2013) 461–469.

116. A. Cemmi, C. Paoletti, A. Pozio, S. Baccaro, L. Giorgi, E. Serra, "Radiation effects on platinum nanostructured electrocatalysts for polymer electrolyte fuel cells", Astroparticle, Particle and Space Physics, Detectors and Medical Physics Applications - Proceedings of the 10th International Conference on Advanced Technology and Particle Physics, ICATPP 2007, Como 8 October - 12 October 2007, Pages 540-546

117. A. Cemmi, S. Baccaro, S. Fiore, P. Gislon, E. Serra, S. Fassina, E. Ferrari, E. Ghisolfi, "Ceramic matrix composites performances under high gamma radiation doses", presentato come Extended abstract in Astroparticle, Particle and Space Physics, Detectors and Medical Physics Applications Proceedings of the 14th Conference Villa Olmo, Como, Italy 23-27/09/2013.

118. G. Di Girolamo, F. Marra, C .Blasi, M. Schioppa, G. Pulci, E. Serra, T. Valente, "High-temperature mechanical behavior of plasma sprayed lanthanum zirconate coatings", Ceramics International 40 (2014) 11433–11436.

119. G. Di Girolamo, A. Brentari, C. Blasi, E. Serra, "Microstructure and mechanical properties of plasma sprayed alumina-based coatings", Ceramics International 40 (2014) 12861-12867.

120. Giovanni Di Girolamo, Alida Brentari, Caterina Blasi, Luciano Pilloni & Emanuele Serra, *"High-Temperature Oxidation and Oxide Scale Formation in Plasma-Sprayed CoNiCrAlYRe Coatings",* Metallurgical and MaterialsTransactions A, ISSN 1073-5623, DOI 10.1007/s11661-014-2509-5, Volume 45A – Number 10 – Settember 2014

121. Giovanni Di Girolamo, Alida Brentari, Emanuele Serra, "Morphology and microstructure of NiCoCrAlYRe coatings after thermal aging and growth of an Al2O3-rich oxide scale", doi:10.3390/coatings4040701, *Coatings* 2014, *4*, 701-714.

122. Giovanni Di Girolamo and Emanuele Serra, "Thermally sprayed nanostructured coatings for anti-wear and TBC applications: state-of-the-art and future perspectives" Anti-Abrasive Nanocoatings, © 2015 Elsevier Ltd, doi:10.1016/B978-0-85709-211-3.00020-0, pages 513-541.

123. Ashu K. Bansal, Francesco Antolini, Shuyu Zhang, Lenuta Stroea, Luca Ortolani, Massimiliano Lanzi, Emanuele Serra, Sybille Allard, Ullrich Scherf and I. D. W. Samuel, "Highly Luminescent Colloidal CdS Quantum Dots with Efficient Near-Infrared Electroluminescence in Light-Emitting Diodes", Journal of Physical Chemistry C , Volume 120, Issue 3, 28 January 2016, Pages 1871-188

124. F. Zaza, V. Pallozzi, E. Serra and M. Pasquali, "Combustion Synthesis of LaFeO3 Sensing Nanomaterial", presented at 10th Nanoforum, Rome, 22-25 September 2014, *AIP Conference Proceedings*, doi: 10.1063/1.4922559

125. F. Zaza, G. Orio, E. Serra, F. Caprioli and M. Pasquali, "Low-Temperature Capacitive Sensor Based on Perovskite Oxides", presented at 10th Nanoforum, Rome, 22-25 September 2014, *AIP Conference Proceedings*, doi: 10.1063/1.4922560

126. Bansal, Ashu; Antolini, Francesco; Zhang, Shuyu; Stroea, Lenuta; Ortolani, Luca; Lanzi, Massimiliano; Serra, Emanuele; Allard, Sybille; Scherf, Ullrich; Samuel, Ifor, "Highly Luminescent Colloidal CdS Quantum Dots with Efficient Near-Infrared Electroluminescence in Light-Emitting Diodes", The Journal of Physical Chemistry C, December 2015, DOI: 10.1021/acs.jpcc.5b09109

127. V. Pallozzi, F. Zaza, E. Serra, A. Di Carlo, M. Villarini, M. Carlini, “Gas sensors for sustainable and safe bioenergy production from an integrated gasification-FC system”, 21st World Hydrogen Energy Conference 2016. Zaragoza, Spain. 13-16th June, 2016.

128. Marco Lollobrigida, Luca Lamazza, Cristina Capuano, Giuseppe Formisano, Emanuele Serra, Domenica Laurito, Maddalena Romanelli, Agnese Molinari, Alberto De Biase, “Physical Profile and Impact of a Calcium-Incorporated Implant Surface on Preosteoblastic Cell Morphologic and Differentiation Parameters: A Comparative Analysis”, The International Journal of Oral & Maxillofacial Implants, January/February 2016 Volume 31, Issue 1, pag. 223-231.

129. Fabio Zaza, Giovanna Orio, Emanuele Serra, "Multiple regression analysis of perovkite synthesis for reproducible sensing nanomaterials" has been received by journal Acta Materialia.

130. Sebastian Marian Zaharia, Camil Lancea, Lucia Antoneta Chicos, Mihai Alin Pop, Giampaolo Caputo, Emanuele Serra, "Cellular cores for sandwich structures of 316 L stainless steel manufacturing by selective laser melting: microstructure, mechanical proprieties and accelerated corrosion test", has been received by International Journal of Precision Engineering and Manufacturing

131. Giovanni Di Girolamo, Alida Brentari and Emanuele Serra, “Some recent findings on the use of SEM-EDS in microstructural characterisation of as-sprayed and thermally aged porous coatings: a short review” AIMS Materials Science, 3(2): 404-424. DOI: 10.3934/matersci.2016.2.404

132. Fabio Zaza, Giovanna Orio, Emanuele Serra, "Quality by Design Approach for SrTiO3 Perovskite Nanomaterials Synthesis", Journal of Materials Science, DOI: 10.1007/s10853-016-0198-8, November 2016, Volume 51, Issue 21, pp 9649–9668

133. Maritato Manuela, Orazi Larenzia, Laurito Domenica, Formisano Giuseppe, Serra Emanuele, Lollobrigida Marco, Dr. Molinari Agnese, Prof. De Biase Alberto, “Root surface alterations following manual and mechanical scaling: a comparative study”, International Journal of Dental Hygiene, DOI: 10.1111/idh.12349, pag. 553-558.

134. *Sebastian Marian Zaharia*, *Camil Lancea*, *Lucia Antoneta Chicos*, *Mihai Alin Pop*, *Giampaolo Caputo*, *Emanuele Serra*, “MECHANICAL PROPERTIES AND CORROSION BEHAVIOUR OF 316L STAINLESS STEEL HONEYCOMB CELLULAR CORES MANUFACTURED BY SELECTIVE LASER MELTING”, journal Transactions of FAMENA XLI-4 (2017), https://doi.org/10.21278/TOF.41402, ISSN 1333-1124, eISSN 1849-1391

135. D. De Meis, M. Richetta, Emanuele Serra, “Microporous Inorganic Membranes for Gas Separation and Purification”, Interceram - International Ceramic Review, doi: 10.1007/s42411-018-0023-2, Vol. 67, Issue 4, pag. 16-21, 17 July 2018.

136. Domenico De Meis, Giacomo Bruni, Emanuele Serra, Tosti Silvano, “Measurement of single gas permeances of different gases through ceramic membranes for the separation of plasma enhancement gases from deuterium-tritium mixtures in a fusion reactor”,

137. Fabio Zaza, Vanessa Pallozzi and Emanuele Serra, “Optimization of Working Conditions for Perovskite-Based Gas Sensor Devices by Multiregression Analysis”, Hindawi, Journal of Nanotechnology, Volume 2019, Article ID 4628765, 19 pages, https://doi.org/10.1155/2019/4628765

138. D. De Meis, E. Serra, S. Tosti, M. Richetta, A. Tati, G. Bruni, “Ceramic Membranes for the Separation of Plasma Enhancement Gases” Interceram - International Ceramic Review, DOI: 10.1007/s42411-018-0050-z Volume 67, Issue 6, 1 October 2018, Pages 8-13

139. Emanuele Serra, Richard J. Ciora Jr, Domenico De Meis, Maria Richetta, “Plasma enhancement gases (PEGs) separation using a carbon molecular sieve (CMS) membrane”, Fusion Engineering and Design, DOI: 10.1016/j.fusengdes.2019.04.013

140. Domenico De Meis, Maria Richetta, Emanuele Serra, Eric Louradour, “Low pressure fusion exhaust gases separation”, Fusion Engineering and Design, DOI: 10.1016/j.fusengdes.2019.03.012

141. D. De Meis, E. Serra, M. Richetta, M. A. Llosa Tanco, D. A. Pacheco Tanaka, “Fusion Exhaust Gas Separation with a Carbon Molecular Sieve (CMS) Membrane” Interceram - International Ceramic Review, DOI: 10.1007/s42411-019-0010-2, Volume 68, Issue 4, 1 October 2018, Pages 14-17