Curriculum Vitae
Oronzio Manca

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Posizione: professore ordinario all' Università degli Studi della Campania "Luigi Vanvitelli".

Oronzio Manca, ha conseguito, con lode, la laurea in Ingegneria Meccanica presso la Facoltà di Ingegneria dell'Università di Napoli il 27 luglio 1979. Attualmente afferisce al Dipartimento di Ingegneria dell'Università degli Studi della Campania "Luigi Vanvitelli" già Seconda Università degli Studi di Napoli.

Borse di studio e altre attività
È stato borsista CNEN dal 3/3/80 al 14/3/82, sull'"Analisi delle esperienze in acqua sulla termoidraulica dei fasci di barre"
è stato consulente dal 15/3/82 al 15/6/83 per il C.R.A.I.E.S., Centro di Ricerca Applicata per l'Impiego dell'Energia Solare; presso l'Istituto di Fisica Tecnica della Facoltà di Ingegneria dell'Università degli Studi di Napoli.
Ha usufruito di una borsa di studio CNR-NATO SENIOR bimestrale, usufruita presso il Department of Mechanical and Aerospace Engineering della RUTGERS - The State University of New Jersey, dal 13/07/95 al 12/09/95.
Professore invitato all'Université Paris-Est, Marne-la-Vallée, dal 25 Febbraio, 2013 al 25 Marzo, 2013 con l'attività n.PR2093.

Esperienze professionali:
Professore ordinario dall'1.11.2002 a oggi, in regime di tempo pieno nel raggruppamento ING-IND/10 presso il Dipartimento di Ingegneria dell'Università degli Studi della Campania "Luigi Vanvitelli" già Seconda Università degli Studi di Napoli;
è stato professore straordinario in regime di tempo pieno nel raggruppamento ING-IND/10 dal 1.11.1999 al 31.10.2002 presso la Facoltà di Ingegneria della Seconda Università degli Studi di Napoli;
è stato professore di II fascia in regime di tempo pieno nel raggruppamento I050 dal 1.11.1992 al 31.10.1995 presso la Facoltà di Ingegneria dell'Università degli Studi di Napoli Federico II e dal 1.11.1995 al 31.10.1999 presso la Facoltà di Ingegneria della Seconda Università degli Studi di Napoli;
è stato ricercatore di Fisica tecnica presso la Facoltà di Ingegneria dell'Università degli Studi di Napoli dal febbraio 1984 all'ottobre 1992.
Insegnamenti:
ha tenuto corsi di Fisica tecnica e Misure termotecniche presso l'Università degli Studi di Napoli Federico II dal e l'Università degli Studi della Campania "Luigi Vanvitelli" già Seconda Università degli Studi di Napoli;
correlatore di numerose tesi di laurea teoriche, numeriche e sperimentali, circa 400, svolte presso gli insegnamenti della Fisica tecnica, con particolare riferimento al risparmio energetico e alla trasmissione del calore.

Incarichi di gestione accademica:
è stato presidente del corso di laurea in Ingegneria Meccanica dal Novembre 2000 al Dicembre 2004;
è stato presidente del Consiglio di Corso di Studi Aggregati dell'area Industriale dal Gennaio 2005 all'Ottobre 2011;
coordinatore del corso di Dottorato in Ingegneria Industriale e Informatica dal Settembre 2015
direttore della Scuola di Dottorato Politecnica e delle Scienze di Base dal Giugno 2016.

Ricerca:
È stato responsabile scientifico di contratti di ricerca Bilaterali finanziati dal CNR dal 1994 al 1998;
è stato responsabile scientifico di contratti di ricerca finanziati con fondi di Ateneo dalla Seconda Università degli studi di Napoli dal 1995 al 2007;

è stato responsabile scientifico di un contratto di ricerca finanziario dalla Regione Campania 1997-2000;
è stato ed è responsabile di convenzioni di ricerca con aziende pubbliche e private;
è stato responsabile scientifico locale per il progetto " Laboratorio nazionale pubblico-privato per lo sviluppo di tecnologie per l'energia solare termica ad alta temperatura presso il Centro Ricerche ENEA di Portici";
è stato responsabile scientifico del Progetto di Formazione associato al progetto di ricerca "ELIOSLAB";
è stato responsabile scientifico locale di ricerche cofinanziate dal MURST (PRIN) per i bienni 1997-1999, 1999-2001, 2001-2003 e 2003-2005, 2005-2007
è stato responsabile scientifico nazionale di una ricerca cofinanziata dal MURST (PRIN 2009) per il biennio 2011-2013.
è responsabile scientifico nazionale di una ricerca cofinanziata dal MURST (PRIN 2017) per il triennio 2019-2022.

è membro del "Management Committee" e responsabile del "Working Group 1" in NanoUptake Project COST Action 15119 "Overcoming Barriers to Nanofluids Market Uptake"
è membro dell'American Society of Mechanical Engineering (ASME) e fa parte del comitato K-8 dell'Heat Transfer Division dell'ASME, dell'Unione Italiana di Termofluidodinamica (UIT), dell'Associazione Italiana dell'Automobile (ATA), vice presidente dell'Associazione Italiana Gestione dell'Energia (AIGE).
Membro dello Scientific Council of International Center for Heat and Mass Transfer;

è stato Associate Editor (AE) del Journal of Heat Transfer da Luglio 2010 fino a Giugno 2016 ed è AE del Journal of Porous Media da Settembre 2010 a oggi, di Heliyon-Engineering Section dal 2019.
è membro dell'Editorial Advisory Boards delle riviste: Advances in Mechanical Engineering, Advances in Theoretical and Applied Mechanics, Heat Transfer Research, International Journal of Advanced Thermofluid Research, Journal of Engineering, Open Journal of Heat, Mass and Momentum Transfer, The Open Thermodynamics Journal, The Open Fuels and Energy Science Journal, Thermal Science and Engineering Progress, Inventors, Sci.
Lead Guest Editor dell'Advances in Mechanical Engineering per gli Special Issue su "Heat Transfer in Nanofluids" 2010, 2012 e 2013;
Guest Editor di Nanoscale Research Letters per lo Special Issue su "Nanofluids" 2011 e dell'International Review of Mechanical Engineering per gli Special Issue su "Heat Transfer", 2010, 2011,2012 and 2013; Heat Transfer Engineering per lo Special Issue "Selected Papers from the ASME-ATI-UIT 2015 Conference on Thermal Energy Systems: Production, Storage, Utilization, and the Environment"; Computational Thermal Science, Journal of Enhanced Heat Transfer, High Temperature Material Processes: An International Quarterly of High-Technology Plasma Processes and Multiphase Science and Technology per lo special issue "Selected papers from the 7th International Symposium on Advances in Computational Heat Transfer, CHT-17".
Co-chair per
ASME-ATI-UIT 2010 Conference on Thermal and Environmental Issues in Energy Systems, Sorrento, Italy,May 16-19, 2010;
3rd Int. Conf. on Porous Media and its Applications in Science, Engineering and Industry, Montecatini Terme, Italy, June 20-24, 2010;
5th Int. Conf. on Porous Media and its Applications in Science, Engineering and Industry, Kona, Hawaii, USA, June 22-27, 2014.
ASME-ATI-UIT 2015 Conference on Thermal Energy Systems: Production, Storage, Utilization and the Environment, Napoli, Italy,May 17-20, 2015.
1st AIGE-IIETA International Conference on Energy Conversion, Management, Recovery, Saving, Storage and Renewable Systems, Napoli, Italy,June 9-10, 2016.
6th Int. Conf. on Porous Media and its Applications in Science, Engineering and Industry, Waikoloa, Hawaii, USA, July 3-8, 2016.
7th International Symposium on Advances in Computational Heat Transfer, CHT-17, Napoli, Italy, 28 May - 02 June 2017.
Membro Local Organizing Committee del 5th International Conference on Diffusion in Solids and Liquids DSL 2009, Rome, Italy, 24-26 June, 2009.
Chair of Track 15 Measurement Techniques and Thermophysical Properties in Micro/Nanoscale atthe 4th ASME Micro/Nanoscale Heat & Mass Transfer International Conference (MNHMT-13), The University of

Hong Kong, Hong Kong, December 11-14, 2013 and at the 5th ASME Micro/Nanoscale Heat & Mass Transfer International Conference (MNHMT-16), Singapore, January 3 - 6, 2016.
Membro dell'International Executive Committee of
1st Int. Conf. on Computational Methods for Thermal Problems, Naples, Italy, 2009,
2nd Int. Conf. on Computational Methods for Thermal Problems, Dailan, China, September 5-7, 2011.
Membro dello Scientific Commitee of CMEM XIII, Prague (CZ), 2-4 July, 2007; CMEM XIV, Algarve, Portugal, 10-12 June, 2009; 7th Int. Cong. Materials Science and Engineering, Iasi, Romania, May 28-31, 2009; 6th International Conference on Diffusion in Solids and Liquids DSL 2010, Paris, France, 05-07 July, 2010; 7th International Conference on Diffusion in Solids and Liquids DSL 2011, Algarve, Portugal, 27-29 June, 2011; 8th Int. Cong. Materials Science and Engineering, Iasi, Romania, May 26-29, 2011; 4th Int. Conf. on Porous Media and its Applications in Science, Engineering and Industry, Potsdam, Germany, June 17-22, 2012; 8th International Conference on Diffusion in Solids and Liquids DSL 2012, Istanbul, Turkey, June 25-29, 2012; 5th International Conference on Applications of Porous Media August 25-28, Cluj-Napoca, Romania; 9th International Conference on Diffusion in Solids and Liquids DSL 2013, Madrid, Spain, June 24-28, 2013; 10th International Conference on Diffusion in Solids and Liquids DSL 2014; 11th International Conference on Diffusion in Solids and Liquids DSL 2015; 12th International Conference on Diffusion in Solids and Liquids DSL 2016; 13th International Conference on Diffusion in Solids and Liquids DSL 2017; 14th International Conference on Diffusion in Solids and Liquids DSL 2018.
Esaminatore Esterno nel Thesis Examining Committee for PhD examination in Mechanical Engineering a The University of Hong Kong, Hong Kong nel 2014, 2017 e 2018, The University of Limerick nel 2012 e 2014, The University of Queensland, University of Pretoria, South Africa, opposer nell'esame finale al KTH Royal Institute of Technology di Stoccolma in Svezia nel 2017.
Membro della Commissione per la valutazione dei Candidati ad Assistant Professor all'University of Southern Denmark
Reviewer per una posizione Associate Professor all'University of Pretoria, South Africa.

Collaborazioni scientifiche

con Università Italiane: Università di Bologna, Università di Catania, Università di Napoli Federico II;Università di Genova, Università di Padova, Università di Roma Tor Vergata, Politecnico di Torino, Università di Trieste, Università di Udine;
con Università estere: Professor Wilson K. S. Chiu, University of Connecticut, CT USA; Professor Vanessa Egan, University of Limerick, Ireland; Professor Yogesh Jaluria, Rutgers University, NJ USA; Professor Guy Lauriat, Université Paris-Est Marné la Valleé, France; Professor Alina Minea, Technical University GH.Asachi Iasi, Romania; Professor Moghtada Mobedi, Shizuoka University, Japan; Professor Akira Nakayama, Shizuoka University, Japan; Professor Mohsen Sharifpur, University of Pretoria; Professor Mikhail Sheremet, Tomsk University, Russian Federation; Professor Kambiz Vafai, University of California Riverside, CA USA; Professor Liqiu Wang, The University of Hong Kong, Hong Kong; Professor Gongnan Xie, Northwestern Polytechnical University, China.

È autore o coautore di 570 lavori scientifici (154 su riviste internazionali, 8 su riviste nazionali, 15 capitoli di libri), coautore del libro "Applied Diffusion Processes from Engineering to Finance", Wiley-ISTE, 2013; co-editor del libro "Heat Transfer Enhancement with Nanofluids", Publisher CRC, Taylor and Francis Group, 2015; coautore di 5 libri didattici.
È autore o coautore di 305 documenti registrati in SCOPUS, con 3610 citazioni (3025 senza autocitazioni) da 2484 documenti, h-index di 32 (29 senza autocitazioni) e i10-index pari a 79 al 28 Agosto 2019. In Scholar Google le citazioni sono 5340 (3305 dal 2014), h-index 35 (28 dal 2014) e i10-index 100 (66 dal 2014) al 28 Agosto 2019.
L'attività di ricerca è svolta ed è stata svolta soprattutto in Energetica e Trasmissione del calore e può suddividersi nei seguenti filoni:
- sistemi solari attivi: impianti a pompa di calore elioassistita;
- sistemi solari passivi: collettori non capacitivi, collettori solari ibridi fotovotaici-termici;
- fluidi refrigeranti sostitutivi;
- conduzione: soluzioni analitiche e numeriche nell'impiego di sorgenti laser e fascio elettronico nei processi tecnologici;
- irraggiamento e conduzione in film sottili multistrato;
- convezione naturale e mista per il controllo termico dei sistemi elettronici e nei processi tecnologici;
- convezione forzata, mista e naturale in mezzi porosi;

- convezione forzata e mista in nanofluidi.
- preparazione e caratterizzazione dei nanofluidi;
- sistemi per l'accumulo termico sensibile e latente con PCM e nano-PCM;
- incremento dello scambio termico.

RIVISTE INTERNAZIONALI

1. R. Festa, O. Manca, V. Naso, A comparison between models of thermal fields in laser and electron beam surface processing, International Journal of Heat and Mass Transfer, vol.31 n.1, pp.99-106, 1988, DOI: 10.1016/0017-9310(88)90226-8.
2. O. Manca, R. Mastrullo, P. Mazzei, On calibration of hot-wire probes at low velocities in air with variable fluid temperature, Dantec Information, n.6, pp.6-8, February 1988.
3. O. Manca, S. Nardini, V. Naso, Surface periodic on-off heat flux over a semi-infinite body, International Communications in Heat and Mass Transfer, vol.17, n.2, pp. 125- 135, 1990, DOI: 10.1016/0735-1933(90)90047-N.
4. R. Festa, O. Manca, V. Naso, Simplified thermal models in laser and electron beam surface hardening, International Journal of Heat and Mass Transfer, vol.33, n.11, pp.2511-2518, 1990, DOI: 10.1016/0017-9310(90)90008-I.
5. R. Festa, O. Manca, V. Naso, F. Nenci, Thermal design and experimental analysis of laser and electron beam hardening, ASME Journal of Engineering for Industry, vol 115, pp.309-314, 1993, DOI: 10.1115/1.2901665.
6. O. Manca, V. Naso, Solution to Steady-State Three-Dimensional Conduction for a Rectangular Surface Heat Source on Semi-Infinite Body, International Communications in Heat and Mass Transfer, vol.21, pp.799-808, 1994, DOI: 10.1016/0735-1933(94)90033-7.
7. O. Manca, B. Morrone, V. Naso, Quasi-Steady State Three-Dimensional Temperature Distribution Induced by Moving Circular Gaussian Heat Source in a Finite Depth Solid, International Journal of Heat and Mass Transfer, vol.38, pp.1305-1315, 1995, DOI: 10.1016/0017-9310(94)00231-J.
8. B. Morrone, A. Campo, O. Manca, Optimum Plate Separation in a Vertical Parallel-Plate Channel for Natural Convection Flows: Incorporation of Large Spaces at the Channel Extremes, International Journal of Heat and Mass Transfer, vol. 40, pp. 993-1000, 1997, DOI: 10.1016/0017-9310(96)00197-4.
9. N. Angelucci, N. Bianco, O. Manca, Thermal Transient Analysis of Thin Film Multilayers Heated by Pulsed Laser, International Journal of Heat and Mass Transfer, vol 40, pp. 4487-4491, 1997, DOI: 10.1016/S0017-9310(97)00059-8.
10. N. Bianco, O. Manca, B. Morrone, Conjugate Optical-Thermal Models of Back and Front Laser Treatments of Thin Multilayer Films, International Journal of Heat and Technology, vol.15, n. 2, pp.49-56, 1997.
11. N. Bianco, O. Manca, B. Morrone, Instationary Conjugate Optical-Thermal Field in Thin Films Due to Pulsed Laser Heating: a Comparison between Back and Front Treatment, Heat and Mass Transfer, vol.34, pp.255-261, 1998, DOI: 10.1007/s002310050257.
12. S. Avagliano, N. Bianco, O. Manca, V. Naso, Conjugate Thermal and optical Analysis of laser Back Scribing for Amorphous Silicon Photovoltaic Cells Processing, International Journal of Heat and Mass Transfer, vol. 42, pp. 645-656, 1999, DOI: 10.1016/S0017-9310(98)00200-2.
13. O. Manca, B. Morrone, S. Nardini, Thermal Analysis of Solids at High Peclet Numbers Subjected to Moving Heat Source, ASME Journal of Heat Transfer, vol. 121, pp.182-186, 1999, DOI: 10.1115/1.2825939.
14. O. Manca, S. Nardini, Composite Correlation for Air Natural Convection in Tilted Channels, Heat Transfer Engineering, vol. 20, no. 3, pp. 64-72, 1999, DOI:10.1080/014576399271439.
15. A. Campo, O. Manca, B. Morrone, Numerical Analysis of Partially Heated Vertical Parallel Plates in Natural Convective Cooling, Numerical Heat Transfer - Part A: Applications, vol. 36, pp. 129-151, 1999, DOI:10.1080/104077899274813.
16. O. Manca, S. Nardini, V. Naso, Experimental Analysis of Air Natural Convection on Inclined Discretely Heated Plates with Parallel Shroud below, International Journal of Heat and Technology, vol.18, n.1, pp.27-36, 2000.
17. O. Manca, B. Morrone, S. Nardini, Experimental Analysis of Thermal Instability in Natural Convection Between Horizontal Parallel Plates Uniformly Heated, ASME Journal of Heat Transfer, vol. 122, n. 1, pp. 50-57, 2000, DOI: 10.1115/1.521427.

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20. A. Andreozzi, O: Manca, Thermal and fluid dynamic behaviour of symmetrically heated vertical channels with auxiliary plate, International Journal of Heat and Fluid Flow, vol. 22, pp.424-432, 2001, DOI: 10.1016/S0142-727X(01)00080-7.
21. O. Manca, S. Nardini, Thermal design of uniformly heated inclined channels in natural convection with and without radiative effects, Heat Transfer Engineering, vol. 22, n. 2, pp. 13-28, 2001, DOI:10.1080/01457630118178.
22. A. Auletta, O. Manca, B. Morrone, V. Naso, Heat transfer enhancement by the chimney effect in a vertical isoflux channel, International Journal of Heat and Mass Transfer, vol.44 pp. 4345-4357, 2001, DOI: 10.1016/S0017-9310(01)00064-3.
23. N. Bianco, O. Manca, V. Naso, Transient conductive-radiative analysis of multilayer thin films heated by different laser pulses, International Journal of Thermal Sciences, vol. 40, pp.959-968, 2001, DOI: 10.1016/S1290-0729(01)01282-0.
24. G. Barbaro, N. Bianco, O. Manca, One Dimensional Approximate Analytical Solutions of Heat Conduction in Solids with Temperature Dependent Properties, Hybrid Methos in Engineering, , vol. 3, pp. 345-379, 2001.
25. A. Andreozzi, O. Manca, B. Morrone, Numerical Solution to the Natural Convection on Vertical Isoflux Plates by Full Elliptic Equations, Numerical Heat Transfer, Part A, vol. 41, pp. 263-283, 2002, DOI: 10.1080/10407780252780162.
26. O. Manca, S. Nardini, V. Naso, Effect on Natural Convection of the Distance Between an Inclined Discretely Heated Plate and a Parallel Shroud Below, ASME Journal of Heat Transfer, vol. 124, pp. 441-451, 2002, DOI: 10.1115/1.1470488.
27. A. Andreozzi, O. Manca, V. Naso, Natural convection in vertical channels with auxiliary plate, International Journal for Numerical Methods in Heat and Fluid Flow, vol. 12, pp. 716-734, 2002, DOI: 10.1108/09615530210438364.
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29. O. Manca, S. Nardini, K. Khanafer, K. Vafai, Effect of Heated Wall Position on Mixed Convection in a Channel with an Open cavity, Numerical Heat Transfer, Part A, vol. 43, pp. 259-282, 2003, DOI: 10.1080/10407780307310.
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39. A. Campo, O. Manca, B. Morrone, Numerical investigation of the natural convection flows for low-Prandtl fluids in vertical parallel-plates channels, Journal of Applied Mechanics, vol. 73, pp. 96-107, 2006.
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43. O. Manca, S. Nardini, Experimental investigation on natural convection in horizontal channels with the upper wall at uniform heat flux, International Journal of Heat and Mass Transfer, vol. 50, pp. 1075-1086, 2007, DOI: 10.1016/j.ijheatmasstransfer.2006.07.038.
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50. O. Manca, S. Nardini, K. Vafai, Experimental analysis of opposing flow in mixed convection in a channel with an open cavity below, Experimental Heat Transfer, vol. 21, pp. 99-114, 2008.
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57. A. A. Minea, O. Manca, Techniques for intensifying heat transfer: from basics to nanofluids, Metalurgia

International, vol. XIV, pp. 54-61, 2009. ISSN 1582-2214
58. V. Bianco, O. Manca, S. Nardini, M. Roma, Numerical investigation of transient thermal and fluidynamic fields in an executive aircraft cabin, Applied Thermal Engineering, vol. 29, pp. 3418–3425, 2009, DOI: 10.1016/j.applthermaleng.2009.05.020.
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60. V. Bianco, F. Chiacchio, O. Manca, S. Nardini, Numerical investigation of nanofluids forced convection in circular tubes, Applied Thermal Engineering, vol. 29, pp. 3632–3642, 2009, doi:10.1016/j.applthermaleng.2009.06.019.
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