CURRICULUM VITAE OF SERGIO NARDINI

Birth date: 05 Jenuary 1964

Address: Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi della Campania "Luigi Vanvitelli", via Roma 29, 81031 Aversa (CE).

Title: Full Professor

EDUCATIONAL BACKGROUND

• He graduated cum summa laude in Mechanical Engineering at the Faculty of Engineering of the Università degli Studi di Napoli Federico II on March 29th, 1989, having discussed a thesis with the title "Theoretical and Experimental Analysis of the Thermal Treatments by Electronic and Laser Beam". The experimental part of the thesis was carried out at the Division of Materials Science of the Department of Innovative Technologies of base of the ENEA;

• He achieved the title of Ph. Doctorate in Ingegneria dei Sistemi termomeccanici on July 25th, 1994, having discussed the thesis with the title "Experimental Analysis of Natural Convection in Tilted Channels with Uniform Heat Flux".

TEACHING AND RESEARCH ACTIVITIES

• He is a professor in Heat Transfer, Applied Thermodynamics, Thermal Systems and Energy Efficiency in Buildings at the Università degli Studi della Campania "Luigi Vanvitelli".

• He has been tutor of many (about 150) theoretical, numerical and experimental thesis in Thermal Sciences and Heat Transfer;

• He has been tutor of 8 PhD students.

• Promoter and Board Chairman of Sun Energy Europe Srl, an Academic Spin-off company from Università degli Studi della Campania "Luigi Vanvitelli" which was established on June 29, 2015.

Research Interests

• His research activities are in Thermal Sciences and Heat Transfer. In particular: active solar systems; passive solar systems; heat conduction in solids irradiated by moving heat sources; natural and mixed convection in material processing and in thermal control of electronic equipments; thermal characterization of nanofluids, heat transfer with porous media; forecast of Energy consumption.

The more recent research activities are in the:

1. Heat Conduction: numerical and analytical evaluation and analysis of linear and non-linear problems in solids with moving or stationary heat sources such as laser and electron beams;

2. Natural and Mixed Convection in Open Ended Cavities: experimental investigations on natural and mixed convection of air in inclined and horizontal channels with secondary motions which determine three dimensional effects; evaluation of correlation and optimal geometrical configurations of vertical, inclined and horizontal channels and open cavities; numerical analysis of different geometrical configurations of vertical, inclined and horizontal channels and open cavities in steady-state or transient regime and laminar flow; thermal design and control of electronic systems. In the investigation on convergent channels the study has been extended on combined effect of heat conduction on natural and mixed convection; investigation of natural and mixed convection in open ended cavities filled with a porous medium.

3. Analysis of Active and Passive Solar Systems: experimental evaluation of thermal performances of active solar components in a heat pump plant; experimental of thermal performance of passive non-capacitive solar collectors; theoretical analysis of vapor-compression refrigeration systems with new refrigerant fluids. Within the Elioslab Project, funded by Italian Department of University and Research, a solar receiver for high temperature applications is under design. The numerical and experimental study is carried out with the cooperation of other research groups. Enhancement heat transfer techniques, such as baffles in channels and nanofluids are investigated. The storage system of the thermal energy delivered by the afore mentioned receiver is also under investigation. The aim of SEEM (Solar Eco-efficient Envelope Model) Project, founded by the Italian Department of Environment, is the energy efficiency and the energy conversion in electricity and heat from renewable sources integrated on building's facades, particularly with regard to commercial ones. Solar chimney effect will be used in order to heat the air in the chimney. The air drive a component, such as a wind turbine, installed in the chimney to generate electricity. The research activity deals with thermal optimization of the chimney performance. The research will be carried out by means both a numerical and experimental investigation. The effect of channels aspect ratio, radiative properties of opaque and transparent walls will be studied taking into account solar radiation characteristics.

4. Heat Transfer Enhancement: numerical and experimental investigations on impinging jets, extended surfaces, swirl flows also in presence of nanofluids.

• He is author of more than 250 publications, 62 on International Journals.

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EXPERIENCE IN SCIENTIFIC COLLABORATIONS:

Italian research networks with:

Università di Bologna, Università di Catania, Università di Napoli Federico II, Università di Genova, Università di Modena, Università di Trieste, Università di Udine;

International research collaboration with:

Professor Kambiz Vafai, University of California Riverside CA USA
Professor Alina Minea, Technical University GH.Asachi Iasi, ROMANIA.
Professor Guy Lauriat, , Université Paris-Est, France

International experience:

- Member of Local Organizing Committee of the 5th International Conference on Diffusion in Solids and Liquids DSL 2009, Rome, Italy, 24-26 June, 2009;
- Member of Local Organizing Committee of the ASME ATI UIT 2010 Conference, Sorrento, May, 16-19 2010.
- Member of Local Organizing Committee of the AIGE-IIETA 2016 Conference, Napoli, May 9-10, 2016.
- Co-Chair of Local Organizing Committee of the 7th International Symposium on Advances in Computational Heat Transfer, CHT-17, Naples, May 28 - June 2, 2017.

Member of International Executive Committee of:

- 1st International Conference on Computational Methods for Thermal Problems, Naples, September 8-10, 2009;
- 6th Conference on Diffusion in Solids and Liquids, Paris, 5-7 July, 2010;
- 1th International Conference on Heat Transfer, Tallinn, Estonia, 14 - 16 July 2010;
- 7th Conference on Diffusion in Solids and Liquids, Algarve, 26-30 June, 2011;
- 8th Conference on Diffusion in Solids and Liquids, Istanbul, 25-29 June, 2012;
- 9th Conference on Diffusion in Solids and Liquids, Madrid, 24-28 June, 2013;
- 10th Conference on Diffusion in Solids and Liquids, Paris, 23-27 June, 2014;
- 11th Conference on Diffusion in Solids and Liquids, Munich, 22-26 June, 2015;
- 12th Conference on Diffusion in Solids and Liquids, Split, 26-30 June, 2016;
- 13th Conference on Diffusion in Solids and Liquids, Vienna, 26-30 June, 2017;
- 14th Conference on Diffusion in Solids and Liquids, Vienna, 25-29 June, 2018
- 15th Conference on Diffusion in Solids and Liquids, Amsterdam, 24-28 June, 2019.

Guest Editor:

- Lead Guest Editor of the Special Issue “Natural and Mixed Convection in Open–Ended Cavities” of Advances Mechanical Engineering Journal.
- Lead Guest Editor of the Special Issue “Advances in Heat Transfer Enhancement” of Advances Mechanical Engineering Journal.
- Guest Editor of the Special Issue for Advances in Mechanical Engineering (SAGE): Advanced Approaches of Modelling & Measurement for Turbulence and Heat Transfer;
- Guest Editor of the Special Issue for Cogent Engineering: Recent Advances in Enhanced Heat Transfer and Engineering Applications;
- Guest Editor of the Special Issue of Heat Transfer Engineering on "Heat Transfer in Energy Conversion Systems" from AIGE-IIETA 2016 Conference
- Guest Editor of the Special Issue “Solar Thermal Systems” of Applied System Innovation

Member of the Editorial Boards:

- Journal of Thermal Engineering;
- Mechanical Engineering of The Scientific World Journal;
- Cogent Engineering
- Journal of Engineering;
- Metalurgia International;
- African Journal of Engineering;
- American Journal of Scientific Research and Essays
- MAYFEB Journal of Mechanical Engineering

Reviewer for evaluating research proposals for Research Grants Council (RGC) of Hong Kong