

PERSONAL INFORMATION

Sergio Marinetti

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WORK EXPERIENCE

01/01/2021- today

Research Director

National Research Council –Construction Technologies Institute, Padova (Italy)

- Analytical and numerical heat transfer models
- Solution of the inverse thermal problem
- Experimental fluid-dynamics measurements
- IR Thermography

Business or sector Research

01/01/2007- 31/12/2020

Senior Researcher

National Research Council –Construction Technologies Institute, Padova (Italy)

- Analytical and numerical heat transfer models
- Solution of the inverse thermal problem
- Experimental fluid-dynamics measurements
- IR Thermography

Business or sector Research

20/12/2001 – 31/12/2006

Researcher

National Research Council –Construction Technologies Institute, Padova (Italy)

- Infrared thermography
- Thermal signal and image processing
- Thermal non-destructive testing
- Thermal diffusivity measurement in solids by optical methods.

Business or sector Research

11/05/1998 - 19/12/2001

Temporary Researcher

National Research Council –Construction Technologies Institute, Padova (Italy)

- Infrared thermography
- Thermal signal and image processing
- Thermal non-destructive testing
- Thermal diffusivity measurement in solids by optical methods.

Business or sector Research

1992 - 1997

External Research Collaborator

National Research Council –Cold Technique Institute, Padova (Italy)

- Stereoscopic vision
- Thermographic equipment characterization
- Image processing of thermal images by neural network
- Thermal non-destructive testing.

Business or sector Research

EDUCATION AND TRAINING

1993 - 1996

Ph.D. in Energetics

Doctoral School of Padua University

Title of thesis: *"Theoretical and experimental analysis of heat transfer processes by optical methods"*

- Heat transfer in solids
- Analytical and numerical models
- IR thermography
- Thermal non-destructive testing

1984 – 1992

Degree in Electronic Engineering - Specialisation in Informatics

University of Padua – Engineering Faculty

Title of the thesis: *"Implementation of a stereo vision system based on structured light"*.

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Good	Good	Good	Good	Good

Job-related skills

- infrared thermography
- thermal signal and image processing
- thermal non-destructive testing
- thermal diffusivity measurement in solids by optical methods
- analytical and numerical heat transfer models
- solution of the inverse thermal problem
- experimental fluid-dynamics measurements by PIV technique.

ADDITIONAL INFORMATION

01/05/2015 - today

Responsible of Padova branch of the Construction Technologies Institute (ITC). The ITC branch of Padova is devoted to the assessment and development of methods, systems and components conceived to enhance energy-related and technological performances as well as environmental sustainability of products in the air-conditioning and refrigeration sector.

01/02/2016 – 30/09/2021

Responsible of the Research Unit *"Systems, components and material for energy efficiency"* (team of 20 people).

25/03/2016 - today

Participating to the UNI Working Group *"Thermography"*, in the Technical Commission *"Non-destructive testing"*, as representative appointed by CNR.

2003 – today

Reviewer for scientific journals:

- Applied Thermal Engineering
- International Journal of Thermophysics
- Infrared Physics & Technology Journal
- Quantitative InfraRed Thermography Journal (QIRT)
- NDT & E International

- Corrosion Science
- Surface & Coating Technology
- International Journal of Thermal Sciences
- Advances in Materials Science and Engineering
- Measurement Science and Technology
- Journal of Reinforced Plastics and Composites
- International Journal of Physical Sciences
- Mathematical Problems in Engineering
- Journal of Building Engineering
- Journal of Food Engineering
- Measurement Science and Technology
- Journal of Thermal Spray Technology
- International Journal of Refrigeration

Relevant Publications

- X. Maldague, S. Marinetti: "Pulse Phase Infrared Thermography", Journal of Applied Physics, Vol. 79, Issue 5, pp. 2694-2698, 1 March 1996.
- S. Marinetti, X. Maldague, M. Prystay: "Calibration Procedure for Focal Plane Array Cameras and Noise Equivalent Material Loss for Quantitative Thermographic NDT", Materials Evaluation, Vol. 55 Issue 3, pp. 407-412, March 1997.
- S. Marinetti, E. Grinzato, P.G. Bison, E. Bozzi, M. Chimenti, G. Pieri, O. Salvetti: "Statistical analysis of IR thermographic sequences by PCA", Infrared Physics & Technology 46, Issue 1-2 Spec. Iss., (December 2004) pp. 85-91, (presented at AITA 7th, September 9-11 2003, Pisa, Italy).
- S. Marinetti, V. P. Vavilov: "Sensitivity analysis of classical heat conduction solutions applied to materials characterization", Heat transfer engineering, Vol. 26, N. 9, pp. 50-60, Taylor & Francis, November 2005.
- S. Marinetti, L. Finesso, E. Marsilio: "Matrix factorization methods: applications to thermal NDT/E", Proc. of the 5th International Workshop in Advances in Signal Processing for Non Destructive Evaluation of Materials, X. P. V. Maldague Editor, 2006, pp. 3-9, Québec (CANADA). Published in NDT&E International, Vol. 39, Issue: 8, December, 2006, pp. 611-616
- S. Marinetti, L. Finesso, E. Marsilio: "Archetypes and principal components of an IR image sequence", Infrared Physics & Technology 49 (2007) pp. 272-276, (presented at AITA 8th, September 7 - 10, 2005, Roma, Italy).
- S. Marinetti, D. Robba, F. Cernuschi, P. G. Bison, E. Grinzato: "Thermographic inspection of TBC coated gas turbine blades: Discrimination between coating over-thicknesses and adhesion defects", Infrared Physics & Technology 49 (2007) pp. 281-285, (presented at AITA 8th, September 7 - 10, 2005, Roma, Italy).
- S. Marinetti, V.P. Vavilov: "IR thermographic detection and characterization of hidden corrosion in metals: General analysis", Corrosion Science, Vol. 52, N. 3, pp 865-872, 2010.
- S. Marinetti, G. Cavazzini, L. Fedele, F. Dezan, P. Schiesaro, "Air velocity distribution analysis in the air duct of a display cabinet by PIV technique", Int. Journal of Refrigeration, Vol. 35, Issue 8, pp 2321-2331, DOI: 10.1016/j.ijrefrig.2012.07.017, 2012.
- S. Marinetti, P.G. Cesaratto: Title: "Emissivity estimation for accurate quantitative thermography", NDT & E International, Vol. 51, pp 127-134, 2012 DOI: 10.1016/j.ndteint.2012.06.001, 2012.
- S. Marinetti, A. Rossetti, F. Ferrari, S. Minetto: "Air curtain temperature measurement in an open refrigerated display cabinet by IR thermography" Quantitative InfraRed Thermography Journal, 12 (1), pp. 53-63. 2015

Seminars

- Invited speaker to the seminar on Thermographic methods applied to aeronautical components (held at the NASA-Langley Research Center - Hampton, Virginia, U.S.)
- Invited speaker to the seminar "Applications of IR thermography in NDE/T for defect detection and characterisation" (held at the Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren - Saarbrücken, Germany).
- Invited speaker to the seminar "Possible application of IR thermography as a tool for wall transmittance measurements" (held at Ricerca sul Sistema Energetico - RSE S.p.A. - Italy).

Projects

- Scientific referent in the research contract "*Development of processing methodologies of thermal images for the detection of detachment in thermal barrier coatings*"
- Scientific referent in the research contract "*PIV analysis of the air motion field in a commercial refrigerated cabinet component finalized to the development of a CFD model*"
- Scientific referent in the research contract "*Performance analysis of a system for the measurement of the thermal resistance of walls by means of a hot chamber and a heat flux meter*"
- Scientific referent in the research contract "*New technologies for the Made in Italy devoted to the production of commercial open refrigerated cabinets operating with natural refrigerants*"
- Scientific referent in the research contract "*New Frontiers for Environmental Sustainability and Consumer Satisfaction in Fabric Care Household Appliances*"