

PUBLICATIONS OF PROF.MARIO CARBONARO

Archival Journal Publications (last 10 years)

MASUTTI, D., SPINOSA, E., CHAZOT, O. Carbonaro, M. "Disturbance Level Characterization of a Hypersonic Blowdown Facility" AIAA Journal, Volume 50, No.12, pp. 2720-2730, December 2012 (JCR Impact factor 1.057).

BOTTIN, B.; CARBONARO, M.; CHAZOT, O.; DEGREGZ, G.; VANDEN ABEELE, D.; BARBANTE, P.F.; PARIS, S.; VANDERHAEGEN, V.; MAGIN, T.; PLAYEZ, M.
"A Decade of Aerothermal Plasma Research at the von Karman Institute", Contributions to Plasma Physics, 2004, Vol. 44, No. 5-6, pp. 472 – 477.
(JCR Impact factor 1.108).

Meeting papers

CARBONARO M., COLIN P.E., OLIVARI D.:

"The deflection of a jet by a counterflowing stream and its application to anemometry", paper R2 presented at the Fourth Cranfield Fluidics Conference, sponsored by the British Hydromechanics Fluidic Association, 17-20 March 1970, Coventry, UK.

CARBONARO M., OLIVARI D.:

"Some further contribution to fluidic anemometry", paper J5 presented at the Fifth Cranfield Fluidics Conference, sponsored by the British Hydromechanics Fluidic Association, 13-16 June 1972, Uppsala, Sweden.

CARBONARO M., BEKAERT G.A.P.L.:

"Investigation of the switching mechanism in fluidic bistable amplifiers", Final Technical Report, U.S. Army European Research Office, DAJA 37-72-C-0583, December 1972.

CARBONARO M.:

"Review of some problems related to the design and operation of low-speed wind tunnels for V/STOL testing", paper presented at the 8th meeting of the AGARD LaWs (Large Wind tunnels) working group, Marseille, 20-22 September 1972,
republished in AGARD-R-601 "Problems in Wind Tunnel Testing Techniques", April 1973.

CARBONARO M.:

"Use of a supersonic fluidic amplifier as a variable direction thruster for a space launcher roll-control system" ELDO-CECLES/ESRO-CERS, Scientif. and Techn. Review (1973) 5, pp 363-399.

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"Experimental study of the switching characteristics of bistable amplifiers in the turbulent flow regime", Final Technical Report, U.S. Army European Research Office, DAJA 37-73-C-1212, January 1974, AD 782892.

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"A supersonic fluidic amplifier for operation in a vacuum environment", paper J2 presented at the Sixth Cranfield Fluidics Conference, sponsored by the British Hydromechanics Fluidic Association, 26-28 March 1974, Cambridge, UK.

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"Experimental study of the switching characteristics of bistable amplifiers in the turbulent and laminar flow regimes", Final Technical Report, U.S. Army European Research Office, DAJA 37-74-C-2689, July 1975.

CARBONARO M.:

"Interference problems in V/STOL testing at low speeds", AGARD Symposium on Wind Tunnel Design and Testing Techniques, London, UK, 6-8 October 1975.

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“Study of the switching mechanism in bistable amplifiers with application to their development, optimization and construction, Final Technical Report, U.S. Army European Research Office, Grant D-AERO-75-G073, VKI-IN-57, November 1976.

CARBONARO M.:

“Phénomènes de dynamique des fluides influencant le comportement thermique d'une tour de réfrigération” VKI Preprint 1981-1, Hamon-Sobelco/CIFA Meeting on Cooling Towers, Rome, October 1981.

MANFRIANI L., SANDFORD J., CARBONARO M.:

“Enhanced mixing in co-flowing laminar streams”, VKI Preprint 1982-37, presented at the Fourth International Symposium on "Gas Flow and Chemical Lasers", September 1982, Stresa, Italy, republished in book “Gas Flow and Chemical Lasers”, edited by Michele Onorato, Plenum Press, N.Y. 1984.

CARBONARO M., D'AMATO E., TOMASINI E.:

“Improvement and application of a new type of three-component laser Doppler velocimeter”, VKI-TM-37, Oct. 1984.

CARBONARO M.:

“Aerodynamic Effects of De/Anti-Icing Fluids, and Description of a Facility and Test Technique for Their Assessment”, VKI-PP-1991-33, paper presented at AGARD-FDP Specialists Meeting, Toulouse, May 1991, published in “Effects of Adverse Weather on Aerodynamics”, paper NO. 18, AGARD-CP-496, December 1991.

CARBONARO M.:

“Aerodynamic Force Measurements in the VKI Longshot Hypersonic Facility”, paper presented at the Nato Advanced Research Workshop on the New Trends in Instrumentation for Hypersonic Research, Toulouse, May 1992, VKI-PP-1992-43
Republished in Book “New Trends in Instrumentation for Hypersonic Research”, NATO ASI Series, Series E, vol. 224, edited by A. Boutier, by Kluwer Academic Publishers, Dordrecht.

CARBONARO M., CUNHA F.:

“Aerodynamic Effects of De/Anti-Icing Fluids and Criteria for their Aerodynamic Acceptance”, VKI-PP-1993-23, paper presented at the Second SAE Conference on Aircraft Ground Deicing, Salt Lake City, Utah, 15-17 June 1993

CARBONARO M., CUNHA F.:

“Aerodynamic Effects of De/Anti-Icing Fluids and Description of a facility and Test Technique for Their Assessment”, VKI-PP-1993-31, paper presented at the AGARD-IIA Conference on Aircraft Flight Safety, TSAGI, Zhukowsky, Russia, August 31-September 5, 1993

CARBONARO M., CHARBONNIER J.M.:

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EPSTEIN R.J., CARBONARO M., CAUDRON F.

“An Experimental Investigation of the Flow Field About an Upswept Afterbody”, Journal of Aircraft, Vol 31, No.6, 1994.

JULES K., CARBONARO M., ZEMSCH S.

“Application of pressure sensitive paints in hypersonic flows”, VKI-PP-1995-04, paper presented at the 82nd meeting of the Supersonic Tunnel Association, Wright Patterson Air Force Base, Dayton, Ohio, October 1994. Republished as NASA TM 10-6824, February 1996.

CUNHA F., CARBONARO M.

“Surface wave instability on aircraft de/anti-icing fluid films”, VKI-PP-1995-40, paper presented at the First Biennial European Coating Symposium “The Mechanics of Thin Film Coatings”, Leeds, UK, September 12-22, 1995.

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“The Plasmatron Project”, VKI-RP-1996-16, paper presented at the 85th Meeting of the Supersonic Tunnel Association, Atlanta, USA, April 14-16, 1996

CHARBONNIER J-M., CARBONARO M.

“Hypersonic aerothermodynamics at VKI”, VKI-RP-1996-32, paper in “Aerothermodynamics and Propulsion Integration for Hypersonic Vehicles”, AGARD R-813, October 1996.

CUNHA F., CARBONARO M.

“A non-intrusive measurement technique for the study of surface waves on de/anti-icing fluids”, VKI-RP-1997-78, paper presented at the “First International Symposium on Flow Visualisation and Image processing” 1997, Honolulu, Hawaii, February 23-26, 1997, Pacific Center of Thermal Fluids Engineering, Vol. 1, pp 109-114. Accepted for publication in review in the review “Journal of Flow Visualization & Image Processing.

BOTTIN B., CARBONARO M., DECRE M., MAZAUURIC S., NOVELLI A.

“Design of a new inductively-coupled plasma wind tunnel for re-entry material testing at the von Karman Institute”, VKI-RP-1997-39, paper No.18 presented at the “Wind Tunnels and Wind Tunnel Test Techniques Symposium”, Churchill College, Cambridge, UK, April 14-16, 1997.

BOTTIN B., CARBONARO M., SCHRODER W.

“First runs of the adaptive wind tunnel T’3 at VKI: calibration and application of a flexible wall adaptation technique on a NACA 0012 airfoil”, VKI-RP-1997-21, presented at the 4th National Congress of Theoretical and Applied Mechanics, Leuven, Belgium, May 22-23, 1997.

BOTTIN B., CARBONARO M.

“Potential applications of induction heating to aerospace technologies in the 1.2 MW Plasmatron of the von Karman Institute”, VKI-RP-1997-20, paper presented at the International Congress on “Electromagnetic Processing of Materials”, Paris, France, May 26-29, 1997.

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LUMENS J-F., BOTTIN B., CARBONARO M.

“Design of a steady-state heat flux probe for measurements in an induction-heated plasma flow”, VKI-RP-1997-49, paper presented at the 17th International Congress on Instrumentation in Aerospace Simulation Facilities (ICIASF) Pacific Grove, USA, September 29-October 2, 1997.

CARBONARO M., OZGEN S.

“Aerodynamic effects of De/Anti-icing fluids and description of a facility and test technique for their aerodynamic acceptance”, paper A-1 in “Ice Accretion Simulation”, report of Fluid Dynamics Panel Working Group 20, published as AGARD-AR-344, December 1997.

BOTTIN, B.; CARBONARO, M.; PARIS, S.; VAN DER HAEGEN, V.; NOVELLI, A.; VENNEMANN, D.

“The VKI 1.2 MW Plasmatron facility for the thermal testing of TPS materials”, VKI RP 1998-10, paper presented at the 3rd European Workshop on Thermal Protection Systems, ESTEC, Noordwijk, The Netherlands, March 25-27, 1998

BOTTIN, B.; VANDEN ABEELE, D.; CARBONARO, M.; DEGREGZ, G.; SARMA, G.S.R.

“Thermodynamic and transport properties for induction plasma modeling”, VKI RP 1998-16, paper presented at the 7th AIAA/ASME Joint Thermophysics and Heat transfer Conference, Albuquerque, NM, USA, June 15-18, 1998,
AIAA paper 98-2938

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“Flow visualization with a cold model for ICP torch design”, VKI RP 1998-27, paper presented at the “Fifth European Conference on Thermal Plasma Processing”, St Petersburg, Russia, July 13-16, 1998.

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“Experimental study of wave formation on a layer of de/anti-icing fluid”, VKI RP 1998-53, presented at the “Ankara International Aerospace Conference” 1998, Ankara, Turkey, Sept. 9-11, 1998

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“Characterization of a “mini-plasmatron” facility by Pitot probe measurements”, VKI RP 1998-55, presented at the “29th Plasmadynamics and Lasers Conference”, Albuquerque, USA, June 15-18, 1998, AIAA 98-2478

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“Predicted and Measured Capability of the VKI 1.2 MW Plasmatron regarding re-entry simulation”, VKI RP 1999-06, presented at the 3rd European Symposium on Aerothermodynamics for Space Vehicles, ESTEC, Noordwijk, the Netherlands, November 24-26, 1998.

Editor of Books

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Introduction to Rheology, VKI Lecture Series 1976-085

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Measurement Techniques for High Enthalpy and Plasma Flows, RTO-EN-AVT-008, April 2000.

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Low Reynolds Number Aerodynamics on Aircraft including Applications in Emerging UAV Technology, RTO-EN-AVT 104, July 2005

Advances in Laminar-Turbulent Transition Modeling, RTO-EN-AVT-151, September 2009, ISBN 978-92-837-0900-6

Recent Developments in Unmanned Air Systems, VKI Lecture Series 2011-04, April 2011, ISBN 978-2-87516-017-1

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Mario Carbonaro: Sole inventor for Patents :

“Outil de forage rotatif équipé d’un dispositif de percussion”

Patent deposited in France under number 77.24268 by the “Compagnie Française des Pétroles”

“Dispositif à chenaux pour le mélange des flux secs et humides de réfrigérant atmosphérique mixte à flux d’air parallèles”, European Patent No. 0 017 517 deposited on 03.03.1980 by “Hamon Sobelco”

“Dispositif pour le mélange des flux secs et humides de réfrigérant atmosphérique mixte à flux d’air parallèles”, European Patent No. 0 020 191 deposited on 15.04.1980 by “Hamon Sobelco”