

RESUME - CV

Dr. Luigi T. DeLuca

Professor of Aerospace Propulsion at Politecnico di Milano, Italy

Personal

First Name: **Luigi**; Middle Name Initial: **T.**, Family Name: **DeLuca**.

Nationality: Italy

Place of birth: Barisciano, AQ, Italy, 13/03/1944.

Residence: 11 Via Alfonso Corti, I-20133 Milan, MI, Italy

Employer: Politecnico di Milano, Milan, MI, Italy



Full business address

Prof. Luigi T. DeLuca

Politecnico di Milano - Campus Bovisa Sud

DAST – Department of Aerospace Sciences and Technologies

SPLab – Space Propulsion Laboratory

34 Via La Masa

I – 20156 Milan, MI, Italy

Phone: +39-02-2399-8512 office

Phone: +39-02-2399-8068 lab

Fax: +39-02-2399-8334 Dept.

Fax: +39-02-2399-8060 lab

Full private address

Prof. Luigi T. DeLuca

11 Via Alfonso Corti

I – 20133 Milan, MI, Italy

Phone: +39-02-266-3604 home

Phone: +39-339-347-5635 mobile

email-1: luigi.deluca@polimi.it

email-2: luigi.t.deluca@gmail.com

Professional Career

- 1989: Full Professor of Aerospace Propulsion, Politecnico di Milano, Milan, MI, Italy.
- 1983: Associate Professor of Aerospace Propulsion, Politecnico di Milano, Milan, MI, Italy.
- 1973: Assistant Professor of Aerospace Propulsion, Politecnico di Milano, Milan, MI, Italy.

Education

- 1976: Ph.D. Aerospace and Mechanical Sciences, Princeton University, Princeton, NJ, USA under the supervision of Prof. Martin Summerfield.
- 1972: Scholarship, Guggenheim Foundation, Princeton University, Princeton, NJ, USA.
- 1971: Scholarship, Guggenheim Foundation, Princeton University, Princeton, NJ, USA.
- 1970: Scholarship, Rotary International Foundation, Princeton University, Princeton, NJ, USA.
- 1967: Laurea Aeronautical Engineering, Politecnico di Milano, Milan, MI, Italy.

International Background

- 2010: Honorary Professor OmSTU (Omsk State Technical University, Omsk, Russia).
- 1998: Visiting Scholar, Kyushu Institute of Technology, Japan.
- 1997: Visiting Scientist, CalTech, Pasadena, CA, USA.
- 1993: Visiting Scholar, Brigham Young University, Provo, UT, USA.
- 1977: Visiting Scientist, Princeton University, Princeton, NJ, USA.

Dr. Luigi T. DeLuca has directed several international collaborative research efforts in particular with the former Soviet Union countries (CNR, RAS, INTAS, ISTC), acted as a referee for a number international research proposals as well as international technical magazines, and organized several International Workshops (IWCP) attended by the most qualified international scientists. He has been invited for specialized lectures and presentations in most of the leading countries in aerospace propulsion.

Responsibilities

- Space Propulsion Laboratory (SPLab), Aerospace Engineering Dept., Politecnico di Milano.
- Associate Fellow, AIAA (American Institute of Astronautics and Aeronautics).
- Vice-President EUCASS (European Conference for AeroSpace Sciences), Belgium.
- Editorial Board, IJEMCP (International Journal of Energetic Materials and Chemical Propulsion).
- Editorial Board, Aerotecnica Missili e Spazio, Propulsion Section, 2009-2012.
- Editorial Board, FGV (Combustion Explosion and Shock Waves), Russian Academy of Sciences, 2005-2008.
- Editorial Board Progress Series, AIAA (American Institute of Astronautics and Aeronautics), 1992-2000.
- Editorial Board, Aerotecnica Missili e Spazio, Propulsion Section, 1990-1998.
- National Representative, NATO RTO AVT/TCPPS (Applied Vehicle Technology / Technical Committee Propulsion and Power Systems), 1998-2004.
- National Representative, NATO AGARD PEP (Propulsion and Energetics Panel), 1984-1997.

- Referee for numerous international peer-reviewed scientific journals.
- Referee for numerous international scientific projects.

Scientific Activity

For years the scientific activity has mostly been devoted to fundamental combustion problems of solid-phase energetic materials, from both experimental and theoretical viewpoints, with specific attention to: steady burning rates and temperature profiles, radiant ignition, static and dynamic extinction, nonsteady burning, linear and nonlinear intrinsic burning stability, radiation assisted/augmented burning, deflagration limits, frequency response functions, transient flame modeling, and so on.

In the more recent years, interests have moved to combustion of innovative high-energy condensed materials, nanoenergetics for propulsion, performance of metallized formulations, agglomeration and aggregation, dual metal formulations, quasi-steady regression rates, solid and hybrid rocket motors, space launchers, in-space propulsion.

SELECTED PUBLICATIONS: Special Issues of International Journals

1. Special Issue of the *European Journal of Aerospace Science and Technology* (AST) “Propellant Combustion Phenomena”. Vol. 11, No. 1, pp. 1-90, Jan 2007, including 15 papers. Elsevier SAS (with Dr. Kuentzmann P. and Prof. Rudakov A.S.).
2. Special Issue of *Fizika Goreniya i Vzryva* (FGV), Russian Academy of Sciences Siberian Branch, Novosibirsk, Russia, Vol. 36, No. 1, Jan-Feb 2000, including 25 papers (with Prof. Zarko V.E.).
3. Special Issue of *AIAA Journal of Propulsion and Power* “Martin Summerfield Commemorative Issue”. Vol. 15, pp. 737-944, Nov-Dec 1999, ISSN: 0748-4658. AIAA, USA (with Dr. Brown R.S. and Prof. Novozhilov B.V.).






SELECTED PUBLICATIONS: Edited Books

1. “*Progress in Propulsion Physics*”, EUCASS Book Series Advances in Aerospace Sciences, Vol. 4, Edited by L. T. DeLuca, C. Bonnal, O. Haidn, and S. Frolov; Proceedings of the Fourth European Conference for Aerospace Sciences, Saint Petersburg, Russia, 04-08 Jul 11; Torus Press, Moscow, Russia; EDP Sciences, Paris, France; 2013, 822 pages; ISBN: 978-2-7598-0876-2.
2. “*Progress in Propulsion Physics*”, EUCASS Book Series Advances in Aerospace Sciences, Vol. 2, Edited by L. T. DeLuca, C. Bonnal, O. Haidn, and S. Frolov; Proceedings of the Third European Conference for Aerospace Sciences, Versailles, Paris, France, 05-09 Jul 09; Torus Press, Moscow, Russia; EDP Sciences, Paris, France; 2011, 864 pages; ISBN: 978-2-7598-0673-7.
3. “*Progress in Propulsion Physics*”, EUCASS Book Series Advances in Aerospace Sciences, Vol. 1, Edited by L. T. DeLuca, C. Bonnal, O. Haidn, and S. Frolov; Proceedings of the Second European Conference for Aerospace Sciences, Brussels, Belgium, 01-06 Jul 07; Torus Press, Moscow, Russia; EDP Sciences, Paris, France; 2009, 764 pages; ISBN: 978-2-7598-0411-5.
4. “Energetic Problems in Aerospace Propulsion”, Notes for Students, Grafiche GSS, Bergamo, Italy, Revised and Extended Preliminary Edition, 2008, 910 pages + CD.
5. “Energetic Problems in Aerospace Propulsion”, Notes for Students, Grafiche GSS, Bergamo, Italy, Revised Preliminary Edition, 2007, 948 pages + CD.
6. “Energetic Problems in Aerospace Propulsion”, Notes for Students, Grafiche GSS, Bergamo, Italy, Preliminary Edition, 2006, 762 pages + CD.
7. “*In-Space Propulsion*”, Edited Proceedings of the Tenth International Workshop on Combustion and Propulsion (IWCP Vol. 10), Grafiche GSS, Bergamo, Italy, 2005, 534 pages (with Mr. R.L. Sackheim and Mr. B.A. Palaszewski).
8. “*Novel Energetic Materials and Applications*”, Edited Proceedings of the Ninth International Workshop on Combustion and Propulsion (IWCP Vol. 09), Grafiche GSS, Bergamo, Italy, 2004, 654 pages (with Prof. L. Galfetti and Dr. R.A. Pesce-Rodriguez).
9. “*Rocket Propulsion: Present and Future*”, Edited Proceedings of the Eight International Workshop on Combustion and Propulsion (IWCP Vol. 08), Grafiche GSS, Bergamo, Italy, 2003, 856 pages.
10. “*Self-Propagating High-Temperature Synthesis of Materials*”, translated by Yu.B. Scheck, Combustion Science & Technology Book Series Vol. 5, ISBN 90-5699-706-8, Taylor & Francis, New York, NY, USA, 2002, 337 pages (with Dr. A.A. Borisov and Acad. A. Merzhanov).
11. “*Combustion of Energetic Materials*”, Vol. 5 ISICP, Begell-House Inc., New York, NY, USA, December 2001, ISBN 1-56700-198-X, XIV+1030 pages (with Prof. K.K. Kuo).

12. "Advances in Combustion Science: in Honor of Ya.B. Zeldovich", Vol. 173, 361 pages, 1997. ISBN: 1-56347-178-7. American Institute of Aeronautics and Astronautics, Progress Series. AIAA, USA (with Prof. Sirignano A.W. and Acad. Merzhanov A.G.).
13. "Nonsteady Burning and Combustion Stability of Solid Propellants", Vol. 143, 883 pages, 1992. ISBN: 1-56347-014-4. American Institute of Aeronautics and Astronautics, Progress Series. AIAA, USA (with Prof. Price E.W. and Prof. Summerfield M.).
14. "Recent Advances in Aerospace Propulsion", 357 pages, 1991. ISBN: 0-387-97417-2. New York, NY: Springer Verlag, USA (with Prof. Angelino G. and Prof. Sirignano A.W.).












List of publications and presentations reported here only for last 10 years (2013 through 2004).






PUBLICATIONS 2013 (partial) to be updated

1. De Luca L.T., Bernelli Zazzera F., Maggi F., Tadini P., Pardini C., Anselmo L., Grassi M., Pavarin D., Francesconi A., Branz F., Chiesa S., Viola N., Bonnal C., Trushlyakov V.I., Belokonov I.
Active Space Debris Removal by a Hybrid Propulsion Module, Acta Astronautica, Vol. 91, 2013, p. 20-33, doi:10.1016/j.actaastro.2013.04.025 [Scopus]
2. De Luca L.T., Galfetti L., Maggi F., Colombo G., Merotto L., Boiocchi M., Paravan C., Reina A., Tadini P., Fanton L.
Characterization of HTPB-based Solid Fuel Formulations: Performance, Mechanical Properties, and Pollution, Acta Astronautica, Vol. 92, N. 2, 2013, p. 150-162, doi:10.1016/j.actaastro.2012.05.002 [Scopus]
3. Favarò F.M., Sirignano W.A., Manzoni M., De Luca L.T.
Solid-Fuel Regression Rate Modeling for Hybrid Rockets, Journal of Propulsion and Power, Vol. 29, N. 1, 2013, p. 205-215, doi:10.2514/1.B34513 [Scopus]
4. Maggi F., Dossi S., De Luca L.T.
Combustion of Metal Agglomerates in a Solid Rocket Core Flow, Acta Astronautica, Vol. 92, N. 2, 2013, p. 163-171, doi:10.1016/j.actaastro.2012.04.036 [Scopus]
5. Sossi A., Duranti E., Manzoni M., Paravan C., De Luca L.T., Vorozhtsov A.B., Lerner M.I., Rodkevich N.G., Gromov A.A., Savin N.
Combustion of HTPB-Based Solid Fuels Loaded with Coated Nanoaluminum, Combustion Science and Technology, Vol. 185, N. 1, 2013, p. 17-36, doi:10.1080/00102202.2012.707261 [WoS/Scopus]

Presentations 2013 (partial) to be updated

6. Boiocchi M., Toson E., Gelosa S., Slipevich A., Galfetti L., De Luca L.T.
Pure Paraffin Waxes Analysis for Hybrid Rocket Solid Fuels: Rheological, Thermal and Mechanical Characterization, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-9 
7. De Luca L.T., Lavagna M., Maggi F., Tadini P., Pardini C., Anselmo L., Grassi M., Tancredi U., Francesconi A., Branz F., Chiesa S., Viola N., Trushlyakov V.I.
Active Removal of Large Massive Objects by Hybrid Propulsion Module, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-14 

8. Dossi S., Maggi F., Facciolati L., De Luca L.T.
Activation of Micrometric Aluminum - Metal Oxide Mixtures by Mechanical Milling, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-11 
9. Fassina M., De Luca L.T.
Combustion Anomalies in Solid Rocket Propellant, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105 
10. Fassina M., Dossi S., Galfetti L., De Luca L.T.
Comparing AP- and AN-based Propellants with Low Aluminum Content, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-10 
11. Favaro F.M., Manzoni M., Coronetti A., De Luca L.T.
Solid Fuel Regression Rate Modeling for Hybrid Rockets, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-15 
12. Gromov A.A., Paravan C., Maggi F., De Luca L.T., Teipel U.
On the Statistics of Nanoaluminum Thermal Characterization and Its Correlation with the Slow Oxidation/Combustion Parameters, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-9 
13. Kobald M., Toson E., Ciezki H., Schlechtriem S., Di Betta S., Coppola M., De Luca L.T.
Rheological, Optical and Ballistic Investigations of Para n-Based Fuels for Hybrid Rocket Propulsion Using a 2D Slab-Burner, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-14 
14. Lavagna M., Benvenuto R., De Luca L.T., Maggi F., Tadini P., Graziano M.
Contact-less Active Debris Removal: the Hybrid Propulsion Alternative, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105 
15. Maggi F., Dossi S., Reina A., Fassina M., De Luca L.T.
Advanced Aluminum Powders for Solid Propellants, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-13 
16. Platov Y.V., De Luca L.T.
Heterogeneous Condensation of Water Vapor and Carbon Dioxide in Rocket Engine Plumes, Operated in the Upper Atmosphere, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-9 
17. Qin Z., Paravan C., Colombo G., De Luca L.T., Shen R.Q.
Ignition and Combustion of HTPB-based Solid Fuels Loaded with Micron-sized Metals, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-12 
18. Reina A., Gorbenko T.I., Krawiec I., Colombo G., De Luca L.T.
Coating Nano-sized Aluminum to Improve Solid Rocket Propellant Performance, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-10 
19. Reina A., Paravan C., Morlacchi M., Frosi A., Maggi F., De Luca L.T.
Rheological and Mechanical Behavior of Coated Aluminum Loaded Nano-Composites, 5th

- European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-14 
20. Toson E., Kobald M., Di Betta S., De Luca L.T., Ciezki H., Schlechtriem S.
Rheological and Ballistic Investigations of Paraffin-based Fuels for Hybrid Rocket Propulsion using a 2D Radial Micro-Burner, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-12 
 21. Vadalà G., Paravan C., Leoni P., De Luca L.T., Vorozhtsov A.B., Rodkevich N.G., Lerner M.I.
Nano-Sized Bimetallic Aluminum-Copper Powders in HTPB-based Fuels, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-11 
 22. Weiser V., Franzin A., Gettwert V., De Luca L.T.
Combustion of Metallised ADN/GAP Solid Rocket Propellants with Focus on Agglomeration Effects, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105, p. 1-11 
 23. Zevenbergen J.F., Palmucci I., Dossi S., De Luca L.T.
Comparing Ballistics of AP- vs. ADN-based Composite Solid Rocket Propellants, 5th European Conference for Aerospace Sciences (EUCASS 2013), Munich, Germany, 1-5 July 2013, ISBN: 9788494153105 

PUBLICATIONS 2012

24. DeLuca L.T., Galfetti L., Maggi F., Colombo G., Reina A., Dossi S., Consonni D., Brambilla M., *Innovative Metallized Formulations for Solid or Hybrid Rocket Propulsion*, Hanneng Cailiao / Chinese Journal of Energetic Materials, Vol. 20, No. 4, 2012, pp. 465-474, doi:10.3969/j.issn.1006-9941.2012.04.018.
25. Fanton L., Paravan C., DeLuca L.T., *Testing and Modeling Fuel Regression Rate in a Miniature Hybrid Burner*, International Journal of Aerospace Engineering, 2012, 673838 (pages 15), doi:10.1155/2012/673838.
26. Maggi F., Gariani G., Galfetti L., DeLuca L.T., *Theoretical Analysis of Hydrides in Solid and Hybrid Rocket Propulsion*, International Journal of Hydrogen Energy, Vol. 37, No. 2, 2012, pp. 1760-1769, doi:10.1016/j.ijhydene.2011.10.018.
27. A. Sossi, E. Duranti, C. Paravan, L.T. DeLuca, A.B. Vorozhtsov, A.A. Gromov, Yu.I. Pautova, M.I. Lerner, and N.G. Rodkevich, *Non-Isothermal Oxidation of Aluminum Nanopowders Coated by Hydrocarbons and Fluorohydrocarbons*, Journal of Applied Surface Science 2012, under press.
28. Dossi S., Reina A., Maggi F., De Luca L.T.
Innovative Metal Fuels for Solid Rocket Propulsion, International Journal of Energetic Materials and Chemical Propulsion, Vol. 11, N. 4, 2012, p. 299-322, doi:10.1615/IntJEnergeticMaterialsChemProp.20130  [Scopus]

Presentations 2012

29. Galfetti L., De Luca L.T., Maggi F., Colombo G., Merotto L., Boiocchi M.
Experimental Investigation of Transient Combustion in a Hybrid 2D Lab-Scale Burner by a

- Wire-Cut Transducer Technique*, 9th International Symposium on Special Topics in Chemical Propulsion(9-ISICP), Québec City, Canada, 9-13 July 2012, p. 1-17 
30. A. Reina, F. Maggi, G. Colombo, and L.T. DeLuca, *Nanometric Powders Dispersion in Hybrid Fuels and Solid Propellants*, HEMS-2012, Gorniy Altai, Russia, 5-7 Sep 2012.
 31. L.T. DeLuca, *State of the Art in Metallized Fuels for Solid and Hybrid Rocket Propulsion*”, Workshop on Nano-sized Metals, Tomsk State University, Tomsk, Russia, 10-11 Sep 2012.
 32. L.T. DeLuca, F. Maggi, C. Paravan, P. Tadini, G. Vadalà, C. Pardini, and L. Anselmo, *Hybrid Rocket Propulsion: Energetic Additives and Perspectives for Space Applications*”, ICFD-2012, Sendai, Japan, 19-21 Sep 2012.
 33. De Luca L.T., Bernelli Zazzera F., Maggi F., Tadini P., Pardini C., Anselmo L., Grassi M., Pavarin D., Francesconi A., Branz F., Chiesa S., Viola N., Bonnal C., Trushlyakov V.I., Belokonov I.
Active Space Debris Removal by Hybrid Engine Module, 63rd International Astronautical Congress 2012 (IAC 2012), Naples, Italy, 1-5 Oct. 2012, ISBN: 9781622769797, p. 1-14, IAC-12-A6.5.8 
 34. Tadini P., Maggi F., De Luca L.T., Anselmo L., Pardini C., Grassi M., Trushlyakov V.I.
Active Debris Removal of a Cosmos-3M Second Stage by Hybrid Rocket Module, The Dynamics of Vehicles and Aircrafts, Omsk, Russia, 13-15 Nov. 2012, ISBN: 9785814913500, p. 218-237 

PUBLICATIONS 2011

35. F. Maggi, A. Bandera, L.T. DeLuca, V. Thoorens, J.F. Trubert, and T.L. Jackson, “*Agglomeration in Solid Rocket Propellants: Novel Experimental and Modeling Methods*”, in: Progress in propulsion physics. Vol. 2 (EUCASS advances in aerospace sciences series), L. T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, ISBN: 978-2-7598-0673-7, 2011, pp. 81-98.
36. L. Merotto, L. Galfetti, G. Colombo, and L.T. DeLuca, “*Characterization of nAl Powders for Rocket Propulsion*”, in: Progress in propulsion physics. Vol. 2 (EUCASS advances in aerospace sciences series), L. T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, ISBN: 978-2-7598-0673-7, 2011, pp. 99-120.
37. DeLuca, L.T., Galfetti, L., Colombo, G., Maggi, F., Bandera, A., Boiocchi, M., Gariani, G., Merotto, L., Paravan, C., and Reina, A., “*Time-Resolved Burning of Solid Fuels for Hybrid Rocket Propulsion*”, in: Progress in propulsion physics. Vol. 2 (EUCASS advances in aerospace sciences series), L. T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, ISBN: 978-2-7598-0673-7, 2011, pp. 405-426.
38. Duranti E., Sossi A., Paravan C., DeLuca L.T., Vorozhtsov A.B., Gromov A.A., Lerner M.I., Rodkevich N.G., Savin N., *Nano-Sized Aluminum Powders as Energetic Additives for Hybrid Propulsion: Physical Analysis and Performance Tests*, CEAS Air & Space 2011 Conference Proceedings, Venice, Italy, 24-28 Oct 2011, ISBN: 9788896427187, pp. 1-11.
39. Puccio R., Maggi F., Colombo G., DeLuca L.T., DeAmicis R., *Low Temperature Gas Generators Propellants*, CEAS Air & Space 2011 Conference Proceedings, Venice, Italy, 24-28 Oct. 2011, ISBN: 9788896427187, pp. 435-442.
40. Galfetti L., DeLuca L.T., Maggi F., Merotto L., Boiocchi M., *Relative Comparison of Additives-Filled Solid Fuels and Grain Geometry Effects on Regression Rate in Hybrid*

Rocket Propulsion, CEAS Air & Space 2011 Conference Proceedings, Venice, Italy, 24-28 Oct 2011, ISBN: 9788896427187, pp. 1042-1050.

41. Baietta A., Maggi F., DeLuca L.T., *Random Packing for Propellant Microstructure Simulation*, CEAS Air & Space 2011 Conference Proceedings, Venice, Italy, 24-28 Oct 2011, ISBN: 9788896427187, pp. 1051-1060.

Presentations 2011

42. L.T. DeLuca, L. Galfetti, F. Maggi, G. Colombo, L. Merotto, M. Boiocchi, C. Paravan, A. Reina, P. Tadini, and L. Fanton *Characterization of HTPB-Based Solid Fuel Formulations: Performance, Mechanical Properties, and Pollution*, 2nd IAA Symposium on Private Manned Access to Space, Arcachon, France, 30 May-1 June 2011, pp. 1-17, Paper S4.3.
43. Maggi F., Dossi S., DeLuca L.T., *Combustion of Metal Agglomerates in Solid Rocket Core Flow*, 2nd IAA Symposium on Private Manned Access to Space, Arcachon, France, 30 May-1 June 2011, pp. 1-11, Paper S4.5.
44. Maggi F., Baietta A., DeLuca L.T., *Solid Propellant Microstructure Representation: a Packing Code*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.
45. Maggi F., DeLuca L.T., *Assessment of Rocket Exhaust Pollution Through Thermochemistry*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.
46. Maggi F., Dossi S., DeLuca L.T., *Agglomeration and Pocket Structures in Composite Solid Rocket Propellants*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.
47. Merotto L., Boiocchi M., Mazzetti A., Maggi F., Galfetti L., DeLuca L.T., *Characterization of a Family of Paraffin-Based Solid Fuels*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-10.
48. Orlandi O., Blanchard H., Yvart P., Gautier P., Galfetti L., DeLuca L.T., Russo Sorge A., Carmicino C., *Scale Factor and Advanced Solid Fuels for Hybrid Propulsion in ORPHEE*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-9.
49. Paravan C., Sossi A., Reina A., Massini G., Manzoni M., Duranti E., Rambaldi G., Adami A., Seletti E., DeLuca L.T., *Micro and Nano-Sized Metal Additives for Solid Fuels in Hybrid Rocket Lab-Scale Burner*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-12.
50. Parissenti G., Pessana M., Gaia E., Zaccagnino E., Santilli F., Pavarin D., Bettella A., Ronningen J., Valle T., Van Put P., Tijsterman R., Popela R., Pistek A., Di Sotto E., Grandou D., Stasse V., DeLuca L.T., Galfetti L., Maggi F., *Throttleable Hybrid Engine for Planetary Soft Landing*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-13.
51. Puccio R., Maggi F., Colombo G., DeLuca L.T., DeAmicis R., *Low Temperature Gas Generator Propellants*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.
52. Reina A., Paravan C., Maggi F., Colombo G., DeLuca L.T., Belkova M., *Nanometric Powders Dispersion in a Polymeric Matrix*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.

53. Sossi A., Duranti E., Paravan C., DeLuca L.T., Vorozhtsov A.B., Gromov A.A., Lerner M.I., Rodkevich N.G., *Coated Nano-Sized Aluminum Powders: Physical Analyses and Performance Tests in Hybrid Propulsion*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-11.
54. Yutkin E., Trushlyakov V.I., Maggi F., Galfetti L., DeLuca L.T., *Active Onboard Deorbiting System for the Second Stage of Cosmos 3M: a Preliminary Study*, 4th European Conference for Aerospace Sciences (EUCASS), Saint Petersburg, Russia, 4-8 July 2011, pp. 1-9.
55. DeLuca L.T., Galfetti L., Maggi F., Colombo G., Paravan C., Reina A., Tadini P., Sossi A., Duranti E., *An Optical Time-Resolved Technique of Solid Fuels Burning for Hybrid Rocket Propulsion*, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit 2011, San Diego, CA, USA, 31 July-3 Aug. 2011, ISBN: 9781618394576, pp. 2516-2532, AIAA-2011-5753.
56. Galfetti L., Maggi F., Merotto L., Boiocchi M., DeLuca L.T., *Ballistic and Rheological Characterization of Paraffin-Based Fuels for Hybrid Rocket Propulsion*, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit 2011, San Diego, CA, USA, 31 July-3 Aug. 2011, ISBN: 9781618394576, pp. 1769-1785, AIAA-2011-5680.

PUBLICATIONS 2010

57. L.T. DeLuca, L. Galfetti, G. Colombo, F. Maggi, and A. Bandera, V.A. Babuk, and V.P. Sinditskii, “*Microstructure Effects in Aluminized Solid Rocket Propellants*”, AIAA Journal of Propulsion and Power, Vol. 26, No. 4, 2010, pp. 724-733, doi:10.2514/1.45262.
58. L.T. DeLuca, E. Marchesi, M. Spreafico, A. Reina, F. Maggi, L. Rossettini, A. Bandera, G. Colombo, and B.M. Kosowski, “*Aggregation vs. Agglomeration in Metallized Solid Rocket Propellants*”, IJEMCP (International Journal of Energetic Materials and Chemical Propulsion), Editor-in-Chief Kenneth Kuo, Begell-House, Vol. 9, No. 1, 2010, pp. 91-105, doi:10.1615/IntJEnergeticMaterialsChemProp.v9.i1.
59. Maggi F., Bandera A., Galfetti L., DeLuca L.T., Jackson T.L., *Efficient Solid Rocket Propulsion for Access to Space*, Acta Astronautica, Vol. 66, No. 11-12, 2010, pp. 1563-1573, doi:10.1016/j.actaastro.2009.10.012.
60. A. Reina, G. Colombo, F. Maggi, L.T. DeLuca, I. Lesniak, D.B Lempert, and G.B. Manelis, “*Magnesium and Aluminum Ignition in CO₂ Atmosphere*”, Aerotecnica, Missili e Spazio, Vol. 89, No. 1, 2010, p. 14-24.

Presentations 2010

61. Maggi F., Galfetti L., DeLuca L.T., Trushlyakov V.I., Kudentsov V.Y., Lempert D.B., *Thermochemical Considerations in Support of ADOS Propulsion*, Space Debris Mitigation Workshop, Moscow, Russia, 26-27 Apr 2010, Presentation.
62. Trushlyakov V.I., Kudentsov V.Y., Lempert D.B., Maggi F., Galfetti L., DeLuca L.T. *New Combinations of Energetic Compounds for Creation Propellant for Additional Propulsion Jet Systems*, Space Debris Mitigation Workshop, Moscow, Russia, 26-27 Apr 2010, pp. 1-12.
63. DeLuca L.T., Paravan C., Reina A., Marchesi E., Maggi F., Bandera A., Colombo G., Kosowski B.M., *Aggregation and Incipient Agglomeration in Metallized Solid Propellants and Solid Fuels for Rocket Propulsion*, 46th AIAA/ASME/SAE/ASEE Joint Propulsion

Conference and Exhibit, Nashville, TN, USA, 25-28 Jul 2010, AIAA 2010-6752, ISBN: 9781600867477, pp. 1-16.

64. Maggi F., Bandera A., DeLuca L.T., *Approaching Solid Propellant Heterogeneity for Agglomerate Size Prediction*, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Nashville, TN, USA, 25-28 Jul 2010, AIAA 2010-6751, ISBN: 9781600867477, pp. 1-11.
65. Duranti E., Sossi A., Rodkevich N.G., Vorozhtsov A.B., Lerner M.I., Gromov A.A., Paravan C., DeLuca L.T., *Comparison Between Nano-Sized Aluminum Powders with Different Coatings: Physical Analyses and Performance Test*, 5th International Workshop HEMS-2010: Demilitarization, Antiterrorism and Civil Application, Biysk-Naukograd, Russia, 8-10 Sep 2010, pp. 1-24.

PUBLICATIONS 2009

66. V. Babuk, A. Glebov, I. Dolotkazin, A. Conti, L. Galfetti, L.T. DeLuca and A. Vorozhtsov, “*Condensed Combustion Products from Burning of Nanoaluminum-Based Propellants: Properties and Formation Mechanism*” in: Progress in propulsion physics. Vol. 1 (EUCASS advances in aerospace sciences series), L.T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, ISBN: 978-2-7598-0411-5, 2009, pp. 3-16.
67. S. Levi, D. Signoriello, A. Gabardi, M. Molinari, L. Galfetti, L.T. DeLuca, S. Cianfanelli, and G. F. Klyakin, “*Metallized Solid Rocket Propellants Based on AN/AP and PSAN/AP for Access to Space*”, in: Progress in propulsion physics. Vol. 1 (EUCASS advances in aerospace sciences series), L. T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, 2009. ISBN: 978-2-7598-0411-5, 2009, pp. 97-108.
68. F. Maggi, L. T. DeLuca, G. Colombo, A. Bandera, and L. Galfetti, “*Modeling of Diffusion and Premixed Flame of AP/HTPB Laminate Propellant*”, in: Progress in Propulsion Physics. Vol. 1 (EUCASS advances in aerospace sciences series), L. T. DeLuca, et al. (Eds.), Torus Press and EDP Sciences, 2009, ISBN: 978-2-7598-0411-5, 2009, pp. 109-120.
69. G. Tussiwand Sandri, V.E. Saouma, R. Terzenbach, and L.T. DeLuca, “*Fracture Mechanics of Composite Solid Rocket Propellant Grains: Material Testing*”, AIAA Journal of Propulsion and Power, Vol. 25, No. 1, pp. 60-73, 2009.
70. V. Babuk, I. Dolotkazin, A. Gamsov, A. Glebov, L.T. DeLuca, and L. Galfetti, “*Nanoaluminum as a Solid Propellant Fuel*”, AIAA Journal of Propulsion and Power, Vol. 25, No. 2, pp. 482-489, 2009, doi: 10.2514/1.36841.
71. L.T. DeLuca, E. Marchesi, M. Spreafico, A. Bandera, F. Maggi, G. Colombo, L. Galfetti, J.P. Consaga and B. M. Kosowski, “*Agglomeration Effects in Metallized Solid Rocket Propellants*”, Presented in “2009 International Autumn Seminar On Propellants, Explosives and Pyrotechnics”, Kunming, China, September 22-25, 2009.
72. A. Bandera, L. T. DeLuca, L. Galfetti, F. Maggi, G. Colombo, S. Cerri, L. Merotto, L. Rossettini, P. Donega', “*Nano-Ingredients for Rocket Propulsion: Performance Evaluation and Diagnostics*”, Applied Particles Technology: Proceedings of an International Seminar, Forschungszentrum Karlsruhe, Karlsruhe, Germany, 2009, ISSN: 0947-8620.

Presentations 2009

73. "Nano Vs. Micro Catalyst Effects on Solid Rocket Propellants", P. Donegà, A. Bandera, F. Maggi, G. Colombo, L.T. DeLuca, and B. M. Kosowski, Presented in "XX AIDAA Congress", Milano, Italy, June 29 - July 3, 2009, Electronic Proceedings.
74. "Magnesium and Aluminum Ignition in CO₂ Atmosphere", A. Reina, G. Colombo, L.T. DeLuca, F. Maggi, I. Lesniak, D.B Lempert, and G.B. Manelis, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
75. "Anomalous Burning of Ammonium Perchlorate-Based Nonmetallized Solid Rocket Propellants", A. Bandera, A. Baronio, F. Maggi, G. Colombo, L.T. DeLuca, G. Manelis, and V. A. Strunin, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
76. "Manufacture and Combustion of Pressed Ammonium Perchlorate Pellets", C. Fedeli, A. Bandera, F. Maggi, L.T. DeLuca, F. Lillo, and R. Massimi, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
77. "Anisotropy Effects in Hybrid Fuels Burning in a Microburner", C. Paravan, M. Viscardi, L.T. DeLuca, L. Prada Lopez, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
78. "Numerical Analysis of the Specific Impulse for Hybrid Fuels with Energetic Materials", G. Gariani, F. Maggi, and L. Galfetti, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009", Electronic Proceedings.
79. "Influence Of Bonding Agents On Steady Burning Rate And Mechanical Properties Of Solid Propellants", M. Spreafico, L.T. DeLuca, F. Maggi, A.C. Condo, J.P. Consaga and B. M. Kosowski, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
80. "Hybrid Rocket Stage as a Substitute for Third and Fourth Stages of VEGA Launcher", M. Viscardi, G. Gariani, L. T. DeLuca, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
81. "Regression Rate Measurements of Metallized Hybrid Rocket Solid Fuels: Influence of Oxidizer Mass Flux and Pressure", L. Merotto, M. Boiocchi, L. Galfetti, G. Colombo and L.T. DeLuca, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
82. "Regression Rate Measurements of Ammonium Nitrate Based Rocket Solid Propellants: Influence of Metal Oxides", M. Boiocchi, L. Merotto, L. Galfetti, G. Colombo and L.T. DeLuca, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
83. "Effects of Metallized Powders as Fuel Additives in AP/HTPB-based Solid Rocket Propellants", E. Marchesi, A. Bandera, G. Colombo, F. Maggi, L.T. DeLuca, and B. M. Kosowski, Presented in "XX AIDAA Congress", Milan, Italy, June 29 - July 3, 2009, Electronic Proceedings.
84. "Size Evaluation of Solid Rocket Propellants Agglomerates", A. Bandera, F. Maggi, L.T. DeLuca, V. Thoorens, J.F. Trubert, and O. Prusova, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
85. "Using Statistics for Agglomerates Prediction in Aluminized Rocket Propellants", F. Maggi, L.T. DeLuca, and T.L Jackson, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
86. "Regression Rates and Anisotropy Effects in Hybrid Fuels Burning in a Microburner", C. Paravan, M. Viscardi, L.T. DeLuca, L. Prada Lopez, and A. Kazakov, Presented in "3rd

- European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
87. "2D Numerical Simulation of Combustion Processes in a Slab Hybrid Rocket Motor", G. Gariani, F. Maggi, T. Lucchini, T. Faravelli, and L. Galfetti, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
 88. "Chemical and Physical Characterization of Nano-Aluminum Powders", L. Merotto, L. Galfetti, G. Colombo, and L. T. DeLuca, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
 89. "Experimental Investigation of Metallized Hybrid Rocket Fuels", L. Merotto, M. Boiocchi, S. Carea, G. Colombo, L. Galfetti and L. T. DeLuca, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
 90. "Condensed Combustion Residues of Micro vs. Nano Metallized Rocket Propellants", L. T. DeLuca, L. Galfetti, F. Maggi, S. Cerri, and L. Merotto, Presented in "3rd European Conference for Aerospace Sciences (EUCASS)", Versailles, France, 06-09 Jul 2009.
 91. "Agglomeration of Aluminized Solid Rocket Propellants", A. Bandera, F. Maggi, L.T. DeLuca, Presented in "45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, August 2-5, 2009, Denver, Colorado", AIAA 2009-5439.
 92. "Ballistic Characterization of AlH₃ Based Propellants for Solid and Hybrid Rocket Propulsion", L.T. DeLuca, L. Rossettini, C. Kappenstein, V. Weiser, Presented in "45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, August 2-5 2009, Denver, Colorado", AIAA 2009-9874.
 93. "Comparing Nano Vs. Micro Iron Oxide Catalysts for Composite Solid Rocket Propellants", P. Donegà, A. Bandera, F. Maggi, A. Reina, G. Colombo, L.T. DeLuca, and B. M. Kosowski, Presented in "Chemical and Radiation Physics (CRP 09)", Moscow, Russia, 24-29 Aug 2009.
 94. "Iron Oxide Catalysis: Comparison of Micro and Nano Sized Particles", P. Donegà, A. Bandera, F. Maggi, A. Reina, G. Colombo, L.T. DeLuca, and B. M. Kosowski, Presented in "Applied Particle Technology, 3rd International Seminar", Tomsk, Russia, 4-5 Sep 2009.
 95. "Aggregation Vs. Agglomeration in Metallized Solid Rocket Propellants", L. T. DeLuca, E. Marchesi, M. Spreafico, A. Reina, F. Maggi, L. Rossettini, A. Bandera, G. Colombo and B.M. Kosowski, Eighth International Symposium on Special Topics in Chemical Propulsion (8-ISICP), Cape Town, South Africa, 2-6 Nov 2009.
 96. "Regression Rate and CCPs Measurement of Metallized Solid Fuels", L. Galfetti, L. T. DeLuca, C. Paravan, L. Merotto, M. Boiocchi, Eighth International Symposium on Special Topics in Chemical Propulsion (8-ISICP), Cape Town, South Africa, 2-6 Nov 2009.
 97. "Iron Oxide Catalysis for Composite Solid Rocket Propellants", A. Reina, F. Maggi, A. Bandera, P. Donegà, G. Colombo, L.T. DeLuca, and B. M. Kosowski, Presented in "VI International Scientific Conference, Development Trends in Space Propulsion Systems", Warsaw, Poland, 20-21 Nov 2009.

PUBLICATIONS 2008

98. V. Sinditskii, V. Ergoshev, D. Tomasi, and L.T. DeLuca, "Combustion Mechanism of Ammonium Nitrate Based Propellants", AIAA Journal of Propulsion and Power, Vol. 24, No. 5, pp. 1068-1078, 2008, doi: 10.2514/1.35233.

99. L. Galfetti, L. T. DeLuca, P. Grassi, C. Paravan, V. Luoni, A. Bandera, G. Colombo, A. De Cillia, R. Sempio, and H. Raina, “*Combustion Behavior Investigation of Solid Fuels Using a Micro-Sized Hybrid Rocket Motor*”, in: *Advancements in Energetic Materials and Chemical Propulsion*, K. K. Kuo, K. Hori (Eds.), Begell House, New York, 2008, pp. 199-213.
100. V. Sinditskii, V. Ergoshev, D. Tomasi, L.T. DeLuca, “*Study of the Combustion Mechanism of AN-Based Propellants*”, in: *Advancements in Energetic Materials and Chemical Propulsion*, K. K. Kuo, K. Hori (Eds.), Begell House, New York, 2008, pp. 154-171.
101. L.T. DeLuca and L. Galfetti, “*Burning of Metallized Composite Solid Rocket Propellants: from Micrometric to Nanometric Aluminum Size*”. Presented in 3rd Asian Joint Conference on Propulsion and Power (AJCPP) 2008 - Book of Proceedings. Gyeongju, Korea, 06-08 Mar 2008.
102. S. Cerri, L. Galfetti, and L.T. DeLuca, “*Condensed Combustion Product Characterization of Composite Rocket Propellants Using Advanced Analytical Techniques*”, 39th International Annual Conference of ICT, June 24-27, 2008, Karlsruhe, Germany, paper 87.

Presentations 2008

103. “Burning of metallized composite solid rocket propellants: toward nanometric fuel size”, L.T. DeLuca, L. Galfetti, F. Maggi, G. Colombo, A. Bandera, S. Cerri, and P. Donega', 2nd International Symposium on Propulsion for Space Transportation, Heraclion, Crete, Greece, 5-8 May 2008.
104. “Ecological Solid Rocket Propellants Based on Dual Oxidizer Mixes”, L. Galfetti, L.T. DeLuca, M. Boiocchi, A. Gabardi, and M. Molinari, 2nd International Symposium on Propulsion for Space Transportation, Heraclion, Crete, Greece, 5-8 May 2008.
105. “Efficient solid propulsion for private manned access to space”, F. Maggi, A. Bandera, L. Galfetti, L.T. DeLuca, T.L. Jackson, AA-1-2008-047, 1st Symposium on Private Manned Access to Space, Arcachon, France, 28-30 May 2008.
106. “Human Access to Space: Interest of Hybrid Propulsion”, M. Calabro, L.T. DeLuca, C. Perut, 1st Symposium on Private Manned Access to Space, Arcachon, France, 28-30 May 2008.
107. Burning of Stabilized AlH₃ in Solid and Hybrid Rocket Propulsion, L.T. DeLuca et al. (2008), CNES Workshop on Metal Hydrides, Paris, France, 14 Nov 08. Electronic Proceedings.

PUBLICATIONS 2007

108. L. Meda, G. Marra, L. Galfetti, F. Severini, L.T. DeLuca, “*Nano-aluminum as Energetic Material for Rocket Propellants*”, *Materials Science and Engineering*, C 27, 2007, pp. 1393-1396.
109. L.T. DeLuca, L. Galfetti, F. Severini, L. Rossettini, L. Meda, G. Marra, B. D'Andrea, V. Weiser, M. Calabro, A.B. Vorozhtsov, A.A. Glazunov, G.J. Pavlovets, “*Physical and Ballistic Characterization of AlH₃-based Space Propellants*”, *Aerospace Science and Technology*, No. 11, 2007, pp. 18-25.
110. L. Galfetti, L.T. DeLuca, F. Severini, G. Colombo, L. Meda, G. Marra, “*Pre and Post-burning Analysis of Nano-aluminized Solid Rocket Propellants*”, *Aerospace Science and Technology*, No. 11, 2007, pp. 26-32.

111. L.T. DeLuca, “*Burning of Aluminized Solid Rocket Propellants: from Micrometric to Nanometric Fuel Size*”, In Theory and Practice of Energetic Materials, Vol. VII, Proceedings of the 2007 International Autumn Seminar on Propellants, Explosives and Pyrotechnics, Supported by National Natural Science Foundation of China (NSFC), Edited by HUANG Ping, WANG Yajun, LI Shengcai, Science Press, ISBN 978-7-03-020254-3, pp. 277-289.
112. G. Tussiwand Sandri, F. Maggi, A. Bandera, L.T. DeLuca, “*Intrinsic structural-ballistic interactions in composite energetic materials. Part I: experiments*”; Chemical Journal of Armenia, Special Issue Edited by Kharatyan S.L., Vol. LX, No. 2, 2007, ISSN 0515-9628, Part I: experiments, pp. 186-200.
113. G. Tussiwand Sandri, F. Maggi, A. Bandera, L.T. DeLuca, “*Intrinsic structural- ballistic interactions in composite energetic materials. Part II: modeling*”; Chemical Journal of Armenia, Special Issue Edited by Kharatyan S.L., Vol. LX, No. 2, 2007, ISSN 0515-9628, Part II: modeling, pp. 201-215.

Presentations 2007

114. L.L. Rossettini, F. Magistrelli, M. Mantegazza, L. Marini, L. DeCillia, A. Conti, P. Simontacchi, C. Renna, P. Mittino, G. Rapicano, G. Festa, L.T. DeLuca, L. Galfetti, A. Russo Sorge, C. Carmicino, “*Advanced Hybrid Propellant for a Moon Orbiter Thruster*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 1-06-05.
115. V. Babuk, A. Glebov, I. Dolotkazin, A. Conti, L. Galfetti, L.T. DeLuca, A. Vorozhtsov, “*Condensed Combustion Products from Burning of Nanoaluminum Based Propellants: Properties and Formation Mechanism*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-01-01.
116. A.B. Vorozhtsov, V.A. Arkhipov, S.S. Bondarchuk, G. Colombo, L. Galfetti, L.T. DeLuca, “*Transient Burning of Nanoaluminized Solid Propellants*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-01-03.
117. S. Levi, D. Signoriello, L. Galfetti, L.T. DeLuca, S. Cianfanelli, G. F. Klyakin, “*Metallized Solid Rocket Propellants based on AN/AP and PSAN/AP for Low Cost Access to Space*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-03-05.
118. G.B. Brunella, G. Tussiwand, F. Maggi, L.T. DeLuca, L. Galfetti, B. D’Andrea, “*Mechanical Characterization of Composite Solid Propellants*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-03-07.
119. L.L. Rossettini, D. Orsini, L. Galfetti, L.T. DeLuca, “*Radiant Ignition of Solid Rocket Propellants for Space Propulsion*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-04-06.
120. D. Pastrone, L. Galfetti, G. Colombo, L.T. DeLuca, “*Radiative Heat Feedback in Aluminized Hybrid Fuel Combustion*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-13-06.
121. G. Colombo, S. Cerri, A. Bandera, L. Galfetti, L.T. DeLuca, G. Marra, L. Meda, “*PDL of Micro and Nanoaluminized Laboratory Propellants for Space Applications*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-SP-49.
122. M. Boiocchi, F. Severini, L. Galfetti, G. Colombo, L.T. DeLuca, “*Influence of Additives on the Ballistic Behavior of Natural and Syntetic Elastomers/AN-based Solid Propellants*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-

SP-50.

123. M. Caccia, S. Moroni, F. Maggi, L.T. DeLuca, F. Carea, “*Aluminized Gels or Clouds for Low Thrust Space Applications*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-SP-62.
124. Natale, G. Tussiwand, F. Maggi, L.T. DeLuca, L. Galfetti, L. Gobbi, G. Colombo, “*Mechanical Behavior of Aluminized Solid Fuels for Hybrid Rockets*”, 2nd European Conference for Aerospace Sciences, Brussels, Belgium, July 1-7, 2007. Paper 5-SP-67.
125. S. Cerri, Galfetti, L., DeLuca, L.T., D’Andrea, B., and Cianfanelli, S.: “*Experimental Investigation of the Condensed Combustion Products of Micro Aluminized Solid Rocket Propellants*”, AIAA Paper 07-5766, 08-11 Jul 07.
126. L. Galfetti, L.T. DeLuca, P. Grassi, C. Paravan, V. Luoni, A. Bandera, G. Colombo, L. DeCillia, R. Sempio, H. Raina, “*Advances in Hybrid Propulsion*”, 7-ISICP, Kyoto, Japan, 17-21 September 2007.
127. M. Calabro, L.T. DeLuca, L. Galfetti, C. Perut, “*Advanced Hybrid Solid Fuels*”, International Astronautical Congress, Hyderabad, India, 24-28 September 2007. Paper IAC-07-C4.2.09.
128. E. Gambino, L.T. DeLuca, V.P. Sinditskii, V.Yu. Egorshv, V.V. Serushkin, “*Combustion Study of Ammonium Nitrate-based Propellants with Ecologically Friendly Combustion Catalysts*”, High Energy Materials Workshop: Performance and Civil Applications, Arcachon, France, 1-3 October 2007.
129. Bandera, L. Rossettini, G. Colombo, S. Cerri, L.T. DeLuca, V.A. Arkhipov, S.S. Bondarchuk, A.B. Vorozhtsov, A. Korotkikh, “*Steady and Transient Burning of Microaluminized Solid Rocket Propellants*”, High Energy Materials Workshop: Performance and Civil Applications, Arcachon, France, 1-3 October 2007.
130. Conti, A. Bandera, D.A. Orsini, L. Rossettini, L.T. DeLuca, B. D’Andrea, K.P. Ford, P.O. Curran, A.I. Atwood, “*Laser Ignition of Composite Solid Rocket Propellants*”, High Energy Materials Workshop: Performance and Civil Applications, Arcachon, France, 1-3 October 2007.
131. V. Arkhipov, A. Vorozhtsov, S. Bondarchuk, G. Klyakin, L.T. DeLuca, L. Galfetti, “*Ignition and Combustion of HEM Based on Nonchloric Oxidizers*”, High Energy Materials Workshop: Performance and Civil Applications, Arcachon, France, 1-3 October 2007.
132. A. Bandera, L. Rossettini, L.T. DeLuca, V.A. Arkhipov, A.B. Vorozhtsov, “*Steady and Unsteady Burning Behavior of Solid Rocket Propellants*”, HEMCE Conference, Chennai, India, 13-15 Dec 2007.

PUBLICATIONS 2006

133. Bandera A., DeLuca L.T., Maggi F., Annovazzi A., Subith V.S., "Burn-rate measurement on small-scale rocket motors", Defence Science Journal, Vol. 56, No. 3, July 2006, pp. 1-10.

Presentations 2006

134. Maggi F., Dossi S., DeLuca L.T., *Combustion of Metal Agglomerates in Solid Rocket Core Flow*, 2nd IAA Symposium on Private Manned Access to Space, Arcachon, France, 30 May-1 June 2011, pp. 1-11, Paper S4.5.

135. Regi, M, Marchetti, M., Meda, L., Marra, G., Galfetti, L., DeLuca, L.T., Bellucci, S., Micciulla, F., Sen, P. and Gamba, M., “*Sviluppo di Propellenti Solidi Nanostrutturati per Applicazioni di Propulsione Aerospaziale*”, Convegno Segredifesa, Roma, Giugno 2006.
136. Cerri S., DeLuca L.T., Galfetti L., Bellucci S., Marchetti M., Micciulla F., Regi M., "Development of nanostructured solid propellants for aerospace propulsion applications", CANEUS 2006, pp. 1-10.
137. Levi, S., Galfetti, L., DeLuca, L.T., Cianfanelli, S., Babuk, V.A., Klyakin, G.F., Sinditskii, V.P. and Vorozhtov, A.B., “*Metallized Dual-Oxidizer Solid Propellants for Green Space Access*”, 3rd International Conference on Green Propellants for Space Propulsion, Poitiers, France, September 2006.
138. Signoriello, D., Galfetti, L., DeLuca, L.T., Cianfanelli, S., Babuk, V.A., Klyakin, Sinditskii, V.P. and Vorozhtsov, A.B., “*Solid Propellants based on AN/AP Co-crystal for Green Space Access*”, 3rd International Conference on Green Propellants for Space Propulsion, Poitiers, France, September 2006.
139. DeLuca, L.T., Dondè, R., Prato, A., Galfetti, L., Colombo, G., Maggi, F., Meda, L., Marra, G. and Bandera, A., “*Micro and Nano Aluminized Solid Propellants Behavior under Transient Burning Conditions*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.2.07.
140. DeLuca, L.T., Galfetti, L., Bosisio, F., Raina, H., Colombo, G. and Maggi, F., “*An Hybrid Microcombustor for Regression Rate Measurements*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.2.01.
141. Maggi, F., Miccio, F., Galfetti, L. and DeLuca, L.T., “*Flame Structure Simulation of Nanoaluminized Composite Propellants*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.P.3.03.
142. Galfetti, L., DeLuca, L.T., Severini, F., Meda, L., Marra, G., Lentini, L., Cerri, S. and Babuk, V.A., “*Experimental Investigation and Numerical Modeling of the Condensed Combustion Products of Micro and Nano-Aluminized Solid Propellants*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.3.03.
143. DeLuca, L.T., Tomasi, D., Signoriello, D., Levi, S., Cianfanelli, S., Sinditskii, V.P., Babuk, V.A., Klyakin, G.F. and Vorozhtov, A.B., “*Dual-Oxidizer Metallized Solid Propellants for Low-Cost Space Access*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.P.3.02.
144. Tussiwand Sandri, G., Maggi, F., DeLuca, L.T., Sala, G., Bettini, P. and Severini, F., “*Burning Rate Measurements on Damaged Propellant Samples under Mechanical Loads*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.P.3.04.
145. Bandera, A., DeLuca, L.T. and Glick, R., “*Aluminized Solid Propellant Combustion under Vibratory Conditions*”, 57th International Astronautical Congress, Valencia, Spain, 2-6 October 2006. Paper IAC-06-C4.3.01.
146. Bosisio, F., DeLuca, L.T., Galfetti, L., Raina, H., Colombo, G., “*Kickoff Meeting – AlH₃ for Hybrid Propulsion*”, SNPE HQ, Paris, France, 24 November 2006. Electronic Proceedings.

PUBLICATIONS 2005

147. Babuk V., Glebov A., Arkhipov V.A., Vorozhtsov A.B., Klyakin G.F., Severini F., Galfetti L., DeLuca L.T., *Dual-Oxidizer Solid Rocket Propellants for Low-Cost Access to Space*, In-Space Propulsion, L.T. DeLuca, B. A. Palaszewski, R.L. Sackheim (Eds.), Grafiche GSS, Bergamo, 2005, pp. 15.1-15.19.
148. DeLuca L.T., Galfetti L., Severini F., Meda L., Marra G., Vorozhtsov A.B., Sedoi V., Babuk V., *Burning of Nano-Aluminized Composite Rocket Propellants*, Combustion, Explosion, and Shock Waves, Vol. 41, N. 6, 2005, p. 680-692, doi:10.1007/s10573-005-0080-5.
149. Meda L., Marra G., Galfetti L., Inchingalo S., Severini F., DeLuca L.T. *Nano-Composites for Rocket Solid Propellants*, Composites Science and Technology, Vol. 65, N. 5, 2005, p. 769-773, doi:10.1016/j.compscitech.2004.10.016.
150. Galfetti L., DeLuca L.T., Severini F., Meda L., Marra G., Marchetti M., Regi M., Bellucci S., *Nanoparticles for Solid Rocket Propulsion*, Nanoscience & Nanotechnology, Frascati, Italy, 14-16 Nov 2005, p. 1-8, doi:10.1088/0953-8984/18/33/S15.

Presentations 2005

151. Babuk V., Glebov A., Dolotkazin I., Dosychev A., DeLuca L.T., D'Andrea B., Vorozhtsov A.B., Klyakin G.F., *New Generation of Cheap and Ecologically Safe Solid Propellants for Space Applications*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, pp. 1-7.
152. DeLuca L.T., Galfetti L., Severini F., Rossettini L., Meda L., Marra G., D'Andrea B., Weiser V., Calabro M., Vorozhtsov A.B., Glazunov A.A., Pavlovets G.J., *Physical and Ballistic Characterization of AlH₃-Based Space Propellants*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, pp. 1-7.
153. Galfetti L., DeLuca L.T., Severini F., Colombo G., Meda L., Marra G. *Pre and Post-Burning Analysis of Nano-Aluminized Solid Rocket Propellants*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, pp. 1-7.
154. Maggi F., DeLuca L.T., Miccio F., *Effect of Heterogeneity on Flame Structure of AP/HTPB Propellants*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, pp. 1-7.
155. Rashkovsky S.A., Iannetti A., DeLuca L.T., *Direct Numerical Simulation of Aluminum Agglomeration in Composite Solid Propellant Combustion*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, Poster.
156. Vorozhtsov A.B., Arkhipov V.A., Bondarchuk S., Popok N., Klyakin G.F., Babuk V., Kuznetsov V., Sinogina E., DeLuca L.T., Galfetti L., *Ballistic Characteristics of Solid Propellants Containing Dual Oxidizer*, European Conference for Aerospace Sciences (EUCASS), Moscow, Russia, 4-7 July 2005, pp. 1-8.
157. Rossettini L., Maggi F., Colombo G., Galfetti L., DeLuca L.T., *Nano Energetics for Aerospace Propulsion*, NanoForum, Milano, Italia, 28-29 Sep. 2005, Poster.

158. Maggi F., Galfetti L., Severini F., Groppelli G., Guizzetti G., Maghetti D., DeLuca L.T. *New Solid Propellant Formulations Based on HNBR and Isoprene Binders*, XVIII Congresso nazionale AIDAA, Volterra, Italia, 19-22 Sep 2005, pp. 1-11.

PUBLICATIONS 2004

159. Marra G., Meda L., Braglia R., Abis L., Gallo R., Severini F., Galfetti L., DeLuca L.T., A Wide Characterization of Aluminum Powders for Propellants, Novel energetic materials and applications, L.T. DeLuca, L. Galfetti, R.A. Pesce-Rodriguez (Eds.), Grafiche GSS, Bergamo, 2004, pp. 17.1-17.14.
160. Galfetti L., Severini F., DeLuca L.T., Marra G., Meda L., Braglia R., Ballistics and Condensed Residues of Aluminized Solid Rocket Propellants, Novel energetic materials and applications, L.T. DeLuca, L. Galfetti, R.A. Pesce-Rodriguez (Eds.), Grafiche GSS, Bergamo, 2004, pp. 18.1-18.17.
161. Maggi F., Bandera A., Petracca A., DeLuca L.T., Annovazzi A., Grain Processing Effects on Steady Burning Rate in Small Scale Test Motors, Novel energetic materials and applications, L.T. DeLuca, L. Galfetti, R.A. Pesce-Rodriguez (Eds.), Grafiche GSS, Bergamo, 2004, pp. 27.1-27.19.
162. Lucca D.A., Klopstein M.J., Rossi P., Rossetini L., DeLuca L.T., Investigation of Near Surface Mechanical Properties of Ammonium Perchlorate Using Nanoidentation, Novel energetic materials and applications, L.T. DeLuca, L. Galfetti, R.A. Pesce-Rodriguez (Eds.), Grafiche GSS, Bergamo, 2004, pp. 31.1-31.10.
163. Babuk V., Vasilyev V.A., Glebov A., Dolotkazin I., Galeotta M., DeLuca L.T., Combustion Mechanism of AN-Based Aluminized Solid Rocket Propellants, Novel energetic materials and applications, L.T. DeLuca, L. Galfetti, R.A. Pesce-Rodriguez (Eds.), Grafiche GSS, Bergamo, 2004, pp. 44.1-44.20.
164. DeLuca L.T., Galfetti L., Kondrikov B., Meda L., Sedoi V., Severini F., Vorozhtsov A.B., Ballistic Properties of Nanoaluminized Solid Rocket Propellants, Progress in Combustion and Detonation, A. Borisov, S. Frolov, A. Kuhl (Eds.), TORUS PRESS, Moscow, 2004, ISBN: 5945880272, pp. 149-150.
165. Galfetti L., Severini F., DeLuca L.T., Meda L., Nano Propellants for Space Propulsion, 4th International Spacecraft Propulsion Conference (ESA SP-555), Chia Laguna, (CA), Italy, 2-9 Jun 2004, ISBN: 9290928662, pp. 125.1-125.6.
166. DeLuca L.T., Galfetti L., Severini F., Galeotta M., De Amicis R., Babuk V., Kondrikov B., Vorozhtsov A.B., Low-Cost and Green Solid Propellants for Space Propulsion, 2nd International Conference on Green Propellants for Space Propulsion (ESA SP-557), Chia Laguna, (CA), Italy, 7-8 Jun 2004, ISBN: 9290928689, pp. 23.1-23.6.

Presentations 2004

167. Babuk V., Colombo G., DeLuca L.T., Galfetti L., Kondrikov B., Meda L., Sedoi V., Severini F., Vorozhtsov A.B., Ballistic Properties of Nano-Aluminized High-Energy Materials (HEM), Symposium on Design, Test, Integration and Packaging of MEMS/MOEMS (DTIP), Montreux, Switzerland, 12-14 June 2004.
168. DeLuca L.T., Galfetti L., Meda L., Severini F., Babuk V., Sedoi V., Vorozhtsov A.B., Nano-Propellants for Aerospace Propulsion, International Symposium on Energy Conversion Fundamentals, Istanbul, Turkey, 21-25 June 2004.

169. Babuk V., DeLuca L.T., Galfetti L., Klyakin G.F., Kondrikov B., Severini F., Taiariol P., Vorozhtsov A.B., Ballistic Properties of Solid Rocket Propellants Based on Dual-Oxidizer (ammonium Perchlorate and Ammonium Nitrate) Mixtures, International Conference on Combustion and Detonation, dedicated to the memory of Academician Ya. B. Zel'dovich (Zel'dovich Memorial), Moscow, Russia, 30 Aug-3 Sep 2004.
170. Babuk V., DeLuca L.T., Galfetti L., Meda L., Severini F., Physical Characterization of Nanoaluminum Formulations, International Conference on Combustion and Detonation, dedicated to the memory of Academician Ya. B. Zel'dovich (Zel'dovich Memorial), Moscow, Russia, 30 Aug.-3 Sep 2004.
171. DeLuca L.T., Galfetti L., Severini F., Galeotta M., Taiariol P., De Amicis R., Babuk V., Kondrikov B., Vorozhtsov A.B., Klyakin G.F., Ballistic Properties of Solid Rocket Propellants Based on AP+AN Dual-Oxidizer System, International Workshop HEMS-2004: High Energy Materials: Demilitarization and Civil Applications, Belokurikha, Russia, 6-9 Sep 2004, pp. 85-94.
172. Galfetti L., DeLuca L.T., Severini F., Maggi F., Meda L., Marra G., Babuk V., Kondrikov B., Vorozhtsov A.B., Sedoi V., Characterization of Nano-Aluminum Powders for Solid Rocket Propellants, International Workshop HEMS-2004: High Energy Materials: Demilitarization and Civil Applications, Belokurikha, Russia, 6-9 Sep 2004, pp. 208-217.
173. DeLuca L.T., New Energetic Ingredients for Improved Chemical Propulsion, Journée de Travail "Infrastructures Spatiales et Systèmes Propulsifs", Toulouse, France, 1 Dec 2004.