

# Anne Bourdon - Publication list and invited conferences up to August 2022

## Publication list

101. B Esteves, F. Marmuse, C. Drag, A. Bourdon, A. Alvarez-Laguna and P. Chabert (2022) Charged-particles measurements in low-pressure iodine plasmas used for electric propulsion *Plasma Sources Science and Technology* (in press)
100. N. Barleon, L. Cheng, B. Cuenot, O. Vermorel, A. Bourdon (2022) Investigation of the impact of NRP discharge frequency on the ignition of a lean methane-air mixture using fully coupled plasma-combustion numerical simulations *Proceedings of the Combustion Institute* (in press)
99. I Adamovich, S Agarwal, E Ahedo, L L Alves, S Baalrud, N Babaeva, A Bogaerts, A Bourdon, P J Bruggeman, C Canal, E H Choi, S Coulombe, Z Donko, D B Graves, S Hamaguchi, D Hegemann, M Hori, H-H Kim, G M W Kroesen, M J Kushner, A Laricchiuta, X Li, T E Magin, S Mededovic Thagard, V Miller, A B Murphy, G S Oehrlein, N Puac, R M Sankaran, S Samukawa, M Shiratani, M Simek, N Tarasenko, K Terashima, E Thomas Jr, J Trieschmann, S Tsikata, M M Turner, I J van der Walt, M C M van de Sanden, T von Woedtke (2022) The 2022 Plasma Roadmap : low temperature plasma science and technology *Journal of Physics D : Applied Physics*, 55 (37), 373001
98. A. Laguna, B. Esteves, A. Bourdon, P. Chabert (2022) A regularized high-order moment model to capture non-Maxwellian electron energy distribution function effects in partially ionized plasmas *Physics of Plasmas*, 29 (8), 083507  
**(article selected in the "editor's pick" collection of Physics of Plasmas)**
97. T. Ben Slimane, C. Honoré, T. Charoy, A. Bourdon and P. Chabert (2022) Analysis of small scale fluctuations in Hall effect thrusters using virtual Thomson scattering on PIC simulations, *Physics of Plasmas*, 29, 023501
96. P. Viegas, E. Slikboer, Z. Bonaventura, E. Garcia-Caurel, O. Guaitella, A. Sobota and A. Bourdon (2022) Quantification of surface charging memory effect in ionization wave dynamics, *Scientific Reports*, 12 (1), 1181
95. L. Cheng, N. Barléon, B. Cuenot, O. Vermorel and A. Bourdon (2022) Plasma assisted combustion of methane-air mixtures : Validation and reduction, *Combustion and Flame*, 240, 111990
94. T.L. Chng, D.Z. Pai, O. Guaitella, S.M. Starikovskaia and A. Bourdon (2022) Effect of the electric field profile on the accuracy of E-FISH measurements in ionization waves, *Plasma Sources Science and Technology*, 31 (1), 015010
93. A. Bourdon, F. Pechereau, F. Tholin, Z. Bonaventura (2021) Morphology of positive ionization waves in atmospheric pressure air : influence of electrode set-up geometry, *Plasma Sources Science and Technology*, 30 (10) 105022
92. T. Charoy, T. Lafleur, A. Alvarez-Laguna, A. Bourdon, P. Chabert (2021) The interaction between ion transit-time and electron drift instabilities and their effect on anomalous electron transport in Hall thrusters *Plasma Sources Science and Technology*, 30 (6), 065017.
91. T. Lafleur, P. Chabert, A. Bourdon (2021) The origin of the breathing mode in Hall thrusters and its stabilization *Journal of Applied Physics* 130 (5), 053305

90. F. Petronio, A. Tavant, T. Charoy, A. Alvarez-Laguna, A. Bourdon, P. Chabert (2021) Conditions of appearance and dynamics of the modified two-stream instability in  $E \times B$  discharges *Physics of Plasmas*, 28 (4), 043504
89. W. Villafana, F. Petronio, A. Denig, M. Jimenez, D Eremin, L Garrigues, F Taccogna, A. Alvarez-Laguna, JP Boeuf, A. Bourdon, P. Chabert, T. Charoy, B Cuenot, K Hara, F Pechereau, A Smolyakov, D Sydorenko, A Tavant, O Vermorel (2021) 2D radial-azimuthal particle-in-cell benchmark for  $E \times B$  discharges, *Plasma Sources Science and Technology* 30 (7), 075002
88. A. Bourdon, F. Pechereau, F. Tholin, Z. Bonaventura (2021) Study of the electric field in a diffuse nanosecond positive ionization wave generated in a pin-to-plane geometry in atmospheric pressure air, *Journal of Physics D : Applied Physics*, 54, 075204
87. I. D. Kaganovich, A. Smolyakov, Y. Raitses, E. Ahedo, I. G. Mikellides, B. Jorns, F. Taccogna, R. Gueroult, S. Tsikata, A. Bourdon, J.-P. Boeuf, M. Keidar, A. T. Powis, M. Merino, M. Cappelli, K. Hara, J. A. Carlsson, N. J. Fisch, P. Chabert, I. Schweigert, T. Lafleur, K. Matyash, A. V. Khrabrov, R. W. Boswell, A. Fruchtman (2020) Perspectives on physics of  $E \times B$  discharges relevant to plasma propulsion and similar technologies, *Physics of Plasmas* vol 27, 120601
86. P. Viegas, M. Hofmans, O. van Rooij, A. Obrushnik, B. Klarenaar, Z. Bonaventura, O. Guaitella, A. Sobota and A. Bourdon (2020) Interaction of an atmospheric pressure plasma jet with grounded and floating metallic targets : simulations and experiments, *Plasma Sources Science and Technology* vol 29, 095011
85. A. Alvarez Laguna, T. Pichard, T. Magin, P. Chabert, A. Bourdon, M. Massot (2020) An asymptotic preserving well-balanced scheme for the isothermal fluid equations in low-temperature plasma applications, *Journal of computational Physics*, vol 419, 109634
84. S. Boccelli, T. Charoy, A. Alvarez Laguna, P. Chabert, A. Bourdon and T. E. Magin (2020) Collisionless ion modeling in Hall thrusters : analytical axial velocity distribution function and heat flux closures *Physics of Plasmas*, vol 27, 073506
83. V. Désangles, S. Shcherbanev, T. Charoy, N. Clément, C. Deltel, P. Richard, S. Vincent, P. Chabert and A. Bourdon (2020) Fast camera analysis of plasma instabilities in Hall effect thrusters using a POD method under different operating regimes, *Atmosphere*, vol 11, 518
82. T. Charoy, T. Lafleur, A. Tavant, P. Chabert, and A. Bourdon (2020) Instability-enhanced electron transport in Hall-effect thrusters *Physics of Plasmas*, vol 27, 063510 **(article featured on the cover of Physics of Plasmas in June 2020)**
81. M. Hofmans, P. Viegas, O. van Rooij, B. Klarenaar, O. Guaitella, A. Bourdon and A. Sobota (2020) Characterization of a kHz atmospheric pressure plasma jet : comparison of discharge propagation parameters in experiments and simulations without target, *Plasma Sources Science and Technology*, vol 29, 034003
80. A. Alvarez-Laguna, T. Magin, M. Massot, A. Bourdon, P. Chabert (2020) Plasma-sheath transition in multi-fluid models with inertial terms under low pressure conditions : Comparison with the classical and kinetic theory, *Plasma Sources Science and Technology*, vol 29, 025003
79. P. Viegas, A. Bourdon (2020) Numerical study of jet-target interaction : influence of dielectric permittivity on the electric field experienced by the target, *Plasma Chemistry and Plasma Processing*, vol 40, pp 661-683

78. R. Lucken, A. Tavant, A. Bourdon, M. A. Lieberman, P. Chabert (2020) Saturation of the magnetic confinement in weakly ionized plasma, *Plasma Sources Science and Technology*, vol 29, 065014
77. T. Charoy, J.P. Boeuf, A. Bourdon, J.A. Carlsson, P. Chabert, B. Cuenot, D. Eremin, L. Garrigues, K. Hara, I.D. Kaganovich, A.T. Powis, A. Smolyakov, D. Sydorenko, A. Tavant, O. Vermorel, W. Villafana (2019) 2D axial-azimuthal Particle-In-Cell benchmark for low-temperature partially magnetized plasmas, *Plasma Sources Science and Technology*, vol 28 105010
76. E. Slikboer, P. Viegas, Z. Bonaventura, E. Garcia-Caurel, A. Sobota, A. Bourdon and O. Guaitella (2019) Experimental and numerical investigation of the transient charging of a dielectric surface exposed to a plasma jet, *Plasma Sources Science and Technology*, vol 28, 095016
75. R. Lucken, A. Bourdon, M. A. Lieberman, and P. Chabert (2019) Instability-enhanced transport in low temperature magnetized plasma, *Physics of Plasmas*, vol 26, 070702 **(article featured on the cover of Physics of Plasmas in July 2019)**
74. A. Tavant, R. Lucken, A. Bourdon, P. Chabert (2019) Non isothermal sheath model for low pressure plasmas, *Plasma Sources Science and Technology*, vol 28, 075007
73. R. Martorelli, T. Lafleur, A. Bourdon, P. Chabert (2019) Comparison between ad-hoc and instability-induced electron anomalous transport in a 1D fluid simulation of Hall-effect thruster, *Physics of Plasmas*, vol 26, 083502
72. A. Tavant, V. Croes, R. Lucken, T. Lafleur, A. Bourdon, P. Chabert, (2018) The effects of secondary electron emission on plasma sheath characteristics and electron transport in an ExB discharge via kinetic simulations, *Plasma Sources Science and Technology* vol 27, 124001
71. P. Viegas, E. Slikboer, A. Obruchnik, Z. Bonaventura, A. Sobota, E. Garcia-Caurel, O. Guaitella and A. Bourdon (2018) Investigation of a plasma-target interaction through electric field characterization examining surface and volume charge contributions : modeling and experiment, *Plasma Sources Science and Technology*, vol 27, 094002
70. V. Croes, A. Tavant, R. Lucken, R. Martorelli, T. Lafleur, A. Bourdon and P. Chabert (2018) The effect of alternative propellants on the electron drift instability in Hall-effect thrusters : Insight from 2D particle-in-cell simulations, *Physics of Plasmas*, vol 25, 063522
69. T. Lafleur, R. Martorelli, P. Chabert, and A. Bourdon (2018) Anomalous electron transport in Hall-effect thrusters : Comparison between quasilinear kinetic theory and particle-in-cell simulations *Physics of Plasmas*, vol 25, 061202
68. R. Lucken, V. Croes, T. Lafleur , J.-L. Raimbault, A. Bourdon and P. Chabert (2018) Edge-to-center plasma density ratios in two-dimensional plasma discharges *Plasma Sources Science and Technology*, vol 27, 035004
67. L. L Raja, A. Bourdon, P. L. G. Ventzek (2018) Recent advances in the modeling and computer simulations of non-equilibrium plasma discharges *J. Phys. D : Appl. Phys.*, vol 51, 150202
66. P. Viegas, F. Pechereau and A. Bourdon (2018) Numerical study on the time evolutions of the electric field in helium plasma jets with positive and negative polarities *Plasma Sources Science and Technology*, vol 27, 025007

65. S. Kobayashi, Z. Bonaventura, F. Tholin, N. Popov and A. Bourdon (2017) Study of nanosecond discharges in H<sub>2</sub>-air mixtures at atmospheric pressure for plasma assisted combustion applications *Plasma Sources Science and Technology*, vol 26, 075004
64. V. Croes, T. Lafleur, Z. Bonaventura, A. Bourdon and P. Chabert (2017) 2D particle-in-cell simulations of the electron drift instability and associated anomalous electron transport in Hall-effect thrusters *Plasma Sources Science and Technology*, vol 26, 034001
63. F. Pechereau, Z. Bonaventura and A. Bourdon (2016) Influence of surface emission processes on a fast-pulsed dielectric barrier discharge in air at atmospheric pressure, *Plasma Sources Science and Technology*, vol 25, 044004
62. A. Bourdon, T. Darny, F. Pechereau, J-M. Pouvesle, P. Viegas, S. Iséni, and E. Robert (2016) Numerical and experimental study of the dynamics of a  $\mu$ s helium plasma gun discharge with various amounts of N<sub>2</sub> admixture, *Plasma Sources Science and Technology*, vol 25, 035002
61. O. Chanrion, Z. Bonaventura, A. Bourdon and T. Neubert (2016) Influence of the angular scattering of electrons on the runaway threshold in air *Plasma Physics and Controlled Fusion*, vol 58, 044001 (**selected in the "Plasma Physics and Controlled Fusion highlights of 2016"**)
60. A. Guy, A. Bourdon, and M.Y. Perrin (2015) Consistent multi-internal-temperature models for vibrational and electronic nonequilibrium in hypersonic nitrogen plasma flows *Physics of Plasmas*, vol 22, 043507
59. M. Duarte, Z. Bonaventura, M. Massot and A. Bourdon (2015) A numerical strategy to discretize and solve the Poisson equation on dynamically adapted multiresolution grids for time-dependent streamer discharge simulations *Journal of Computational Physics*, vol 289, pp 129-148
58. T. Hoder, Z. Bonaventura, A. Bourdon and M. Simek (2015) Sub-nanosecond delays of light emitted by streamer in atmospheric pressure air : Analysis of N<sub>2</sub>(C<sup>3</sup>Π<sub>u</sub>) and N<sub>2</sub><sup>+</sup> (B<sup>2</sup>Σ<sub>u</sub><sup>+</sup>) emissions and fundamental streamer structure *Journal of applied physics*, vol 117, 073302
57. F. Tholin, A. Bourdon (2015) Influence of the external electrical circuit on the regimes of a nanosecond repetitively pulsed discharge in air at atmospheric pressure, *Plasma Physics and Controlled Fusion*, *Plasma Physics and controlled fusion*, vol 57, 014016
56. D. A Lacoste, A. Bourdon, K. Kuribara, K. Urabe, S. Stauss and K. Terashima (2014) Pure air-plasma bullets propagating inside microcapillaries and in ambient air, *Plasma Sources Science and Technology*, vol 23, 062006 (**selected in the "Plasma Sources Science and Technology highlights of 2014"**)
55. F. Pechereau, A. Bourdon (2014) Influence of the polarity of the applied voltage on the reignition of a discharge below a dielectric layer in air at atmospheric pressure, *Journal of Physics D : Applied Physics*, vol 47, 445206
54. F. Pechereau, P. Le Delliou, J. Jánský, P. Tardiveau, S. Pasquiers and A. Bourdon (2014) Large conical discharge structure of an air discharge at atmospheric pressure in a point-to-plane geometry, *IEEE Transactions on Plasma Science, special issue on images in plasma science*, vol 42, n10, pp 2346-2347
53. A. Bourdon, J. Annaloro, A. Bultel, M. Capitelli, G. Colonna, A. Guy, T.E. Magin, A. Munafó, M.Y. Perrin and L.D. Pietanza (2014) Reduction of State-to-State to

- macroscopic models for hypersonics, *The Open Plasma Physics Journal*, vol 7, (Suppl 1 : M4), pp 60-75
52. O. Chanrion, Z. Bonaventura, D. Çinar, A. Bourdon and T. Neubert (2014) Runaway electrons from a Beam-Bulk model of streamer : Application to TGFs, *Environ. Res. Lett.*, vol 9, 055003
  51. F. Tholin, D. A. Lacoste and A. Bourdon (2014) Influence of fast-heating processes and O atom production by a nanosecond spark discharge on the ignition of a lean H<sub>2</sub>-air premixed flame, *Combustion and Flame*, vol 161, pp 1235-1246
  50. J. Jánský and A. Bourdon (2014) Simulation of two counter-propagating helium discharges at atmospheric pressure, *Plasma Sources Science and Technology*, vol 23, 025001
  49. F. Tholin, A. Bourdon (2013) Simulation of the hydrodynamic expansion following a nanosecond pulsed spark discharge in air at atmospheric pressure, *Journal of Physics D : Applied Physics*, vol 46, 365205
  48. F. Tholin, A. Bourdon (2013) Simulation of the stable 'quasi-periodic' glow regime of a nanosecond repetitively pulsed discharge in air at atmospheric pressure, *Plasma Sources Science and Technology*, vol 22, 045014
  47. A. Guy, A. Bourdon and M.Y. Perrin (2013) Consistent multi-internal-temperatures models for nonequilibrium nozzle flows, *Chemical Physics*, vol 420, pp 15-24
  46. M. Fullekrug, D. Diver, J.-L. Pincon, A.D.R. Phelps, A. Bourdon, C. Helling, E. Blanc, F. Honary, G. Harrison, J.-A. Sauvaud, J.-B. Renard, M. Lester, M. Rycroft, M. Kosch, R.B. Horne, S. Soula, and S. Gaffet (2013) Energetic Charged Particles and Hard Radiation Above Thunderclouds, *Surveys of Geophysics*, vol 34, Iss 1, pp 1-41
  45. J. Jansky, Q. T. Algwari, D. O Connell and A. Bourdon (2012) Experimental-modeling study of an atmospheric pressure helium discharge propagating in a thin dielectric tube, *IEEE Transactions on Plasma Science, special issue on atmospheric pressure plasma jets*, vol 40, (11), pp 2912-2919
  44. F. Pechereau, J. Jansky and A. Bourdon (2012) Simulation of the reignition of a discharge behind a dielectric layer in air at atmospheric pressure, *Plasma Sources Science and Technology*, vol 21, 055011 (**selected in the "Plasma Sources Science and Technology highlights of 2012"**)
  43. Z. Bonaventura, M. Duarte, A. Bourdon, and M. Massot (2012) Derivation of a merging condition for two interacting streamers in air *Plasma Sources Science and Technology*, vol 21, 052001
  42. A. Munafo, M. Panesi, R. L. Jaffe, G. Colonna, A. Bourdon and T. E. Magin (2012) QCT-based vibrational collisional models applied to nonequilibrium nozzle flows, *The European Physical Journal D - Atomic, Molecular, Optical and Plasma Physics*, vol 66, n 7, 188
  41. M. Duarte, Z. Bonaventura, M. Massot, A. Bourdon, S. Descombes and T. Dumont (2012) A new numerical strategy with space-time adaptivity and error control for multi-scale streamer discharge simulations, *Journal of Computational Physics, special issue "Computational Plasma Physics"*, vol 231, Iss 3, pp 1002-1019
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- molecular nitrogen, *Chemical Physics, special issue "Chemical Physics of Low Temperature Plasmas (in honour of Prof Mario Capitelli)"*, vol 398, pp 90-95
39. J. Jansky, P. Le Delliou, F. Tholin, Z. Bonaventura, P. Tardiveau, A. Bourdon and S. Pasquiers (2011) Propagation of an air discharge at atmospheric pressure in a capillary glass tube : influence of the tube radius on the discharge structure, *IEEE Transactions on Plasma Science*, vol 39, n 11, pp 2106-2107
  38. F. Tholin, D.L. Rusterholtz, D.A. Lacoste, D.Z. Pai, S. Celestin, J. Jarrige, G. Stancu, A. Bourdon and C.O. Laux (2011) Images of a nanosecond repetitively pulsed glow discharge between two point electrodes in air at 300K and at atmospheric pressure, *IEEE Transactions on Plasma Science*, vol 39, n 11, pp 2254-2255
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  36. F. Tholin and A. Bourdon (2011) Influence of temperature on the glow regime of a discharge in air at atmospheric pressure between two point electrodes, *Journal of Physics D : Applied Physics*, vol 44, n 38, 385203
  35. J. Jansky, P. Le Delliou, F. Tholin, P. Tardiveau, A. Bourdon and S. Pasquiers (2011) Experimental and numerical study of the discharge propagation in a capillary tube in air at atmospheric pressure, *Journal of Physics D : Applied Physics*, vol 44, n 33, 335201
  34. J. Jansky and A. Bourdon (2011) Surface charge deposition inside a capillary tube by a atmospheric pressure discharge in air, *European Physical Journal - Applied Physics*, vol 55, n 1, 13810
  33. M. Panesi, T.E. Magin, A. Bourdon, A. Bultel and O. Chazot (2011) Influence of molecules in the analysis of the FIRE II flight experiment by means of a collisional radiative model, *Journal of Thermophysics and Heat Transfer*, vol 25, n 3, pp 361-373
  32. Z. Bonaventura, A. Bourdon, S. Celestin and V. P. Pasko (2011) Electric field determination in streamer discharges in air at atmospheric pressure, *Plasma Sources Science and Technology*, vol 20, 035012
  31. J.A. Rioussset, V.P. Pasko and A. Bourdon (2010) Air-density-dependent model for analysis of air heating associated with streamers, leaders, and transient luminous events, *Journal of Geophysical Research*, vol 115, A12321
  30. J. Jansky, F. Tholin, Z. Bonaventura and A. Bourdon (2010) Simulation of the discharge propagation in a capillary tube in air at atmospheric pressure, *Journal of Physics D : Applied Physics*, vol 43, 395201
  29. A. Bourdon, Z. Bonaventura and S. Celestin (2010) Influence of the pre-ionization background and simulation of the optical emission of a streamer discharge in preheated air at atmospheric pressure between two point electrodes, *Plasma Sources Science and Technology*, vol 19, 034012
  28. E. Marode, D. Djermoune, P. Dessante, C. Deniset, P. Ségur, F. Bastien, A. Bourdon and C. Laux (2009) Physics and applications of atmospheric non-thermal air plasma with reference to environment, *Plasma Physics and Controlled Fusion*, vol 51, n 12, 124002
  27. S. Celestin Z. Bonaventura, O. Guaitella, A. Bourdon and A. Rousseau (2009) Influence of surface charges on the structure of a dielectric barrier discharge in air at

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26. M. Panesi, T.E. Magin, A. Bourdon, A. Bultel and O. Chazot (2009) Analysis of the FIRE II flight experiment by means of a collisional radiative model, *Journal of Thermophysics and Heat Transfer*, vol 23, n 2, pp 236-248
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  20. A. Bourdon, A. Bultel (2008) Numerical simulation of stagnation line nonequilibrium air flows for re-entry applications, *Journal of Thermophysics and Heat Transfer*, vol 22, n 2, pp 168-177
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  16. S. Pancheshnyi, D.A. Lacoste, A. Bourdon, C.O. Laux (2006) Ignition of propane-air mixtures by a repetitively pulsed nanosecond gas discharge, *IEEE Transactions on Plasma Science*, vol 34, n 6, pp 2478-2487
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12. O. Witasse, J.P. Lebreton, M.K. Bird, R. Dutta-Roy, W.M. Folkner, R.A. Preston, S.W. Asmar, L.I. Gurvits, S.V. Pogrebenko, I.M. Avruch, R.M. Campbell, H.E. Bignall, M.A. Garrett, H.J. van Langevelde, S.M. Parsley, C. Reynolds, A. Szomoru, J.E. Reynolds, C.J. Phillips, R.J. Sault, A.K. Tzioumis, F. Ghigo, G. Langston, W. Brisken, J.D. Romney, A. Mujunen, J. Ritakari, S.J. Tingay, R.G. Dodson, C.G.M. van't Klooster, T. Blancquaert, A. Coustenis, E. Gendron, B. Sicardy, M. Hirtzig, D. Luz, A. Negrao, T. Kostiuik, T.A. Livengood, M. Hartung, I. de Pater, M. Adamkovich, R.D. Lorenz, H. Roe, E. Schaller, M. Brown, A.H. Bouchez, C.A. Trujillo, B.J. Buratti, L. Caillault, T.E. Magin, A. Bourdon and C.O. Laux (2006) Overview of the coordinated ground-based observations of Titan during the Huygens mission, *Journal of Geophysical Research*, vol 111, E07S01
11. A. Bultel, B. G. Chéron, A. Bourdon, O. Motapon and I.F. Schneider (2006) Collisional radiative model in air for earth re-entry problems, *Physics of plasmas*, vol 13, n 4, 043502
10. A. Bourdon, G. Rymer, R. Wanker (2005) Optimization of a 5-Step Kinetic Scheme for HCCI Applications, *Journal of engines, SAE 2004 Transaction Journal*, vol 3, pp 357-366
9. A. Bultel, C. Letellier, A. Bourdon (2004) Dynamical analysis of a helium glow discharge. I A model, *Physics Letters A*, vol 323, n 3-4, pp 267-277
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7. A. Bourdon, P. Vervisch (2000) Analytical models for the electron-vibration coupling in nitrogen plasma flows, *Journal of Thermophysics and Heat Transfer*, vol 14, n 4, pp 489-495
6. A. Bourdon, A. Leroux, P. Domingo, P. Vervisch (1999) Experiment-modeling comparison in a nonequilibrium supersonic air nozzle flow, *Journal of Thermophysics and Heat Transfer*, vol 13, n 1, pp 68-75
5. A. Bourdon, Y. Tereziak, P. Vervisch (1998) Ionization and recombination rates of atomic oxygen in high temperature plasma flows, *Physical Review E*, vol 57, n 4, pp 4684-4692
4. A. Bourdon, P. Vervisch (1997) Electron-vibration energy exchange models in nitrogen plasma flows, *Physical Review E*, vol 55, n 4, pp 4634-4641
3. A. Bourdon, P. Vervisch (1997) Study of a low pressure nitrogen plasma boundary layer over a metallic plate, *Physics of Plasmas*, vol 4, n 11, pp 4144-4157
2. A. Bourdon, P. Vervisch (1996) Three-body recombination rate of atomic nitrogen in low pressure plasma flows, *Physical Review E*, vol 54, n 2, pp 1888-1898
1. P. Domingo, A. Bourdon, P. Vervisch (1995) Study of a low pressure nitrogen plasma jet, *Physics of plasmas*, vol 2, n 7, pp 2853-2862

## Invited Conferences

26. A. Bourdon, P. Viegas, Z. Bonaventura, Recent advances in modeling low-temperature kHz atmospheric pressure plasma jets and their interactions with surfaces invited lec-



- ture at the *Workshop "plasma modelling", 74th Annual Gaseous Electronics Conference Virtual*, october 4, 2021
25. A. Bourdon, Current Modeling and Simulation Challenges of Low-Temperature Plasmas invited lecture at the *67th AVS, Virtual*, October 24-29, 2021
  24. A. Bourdon, The electron Boltzmann equation in a wider context, invited lecture at the *Modelling workshop "All about the Boltzmann equation"*, DIFFER, Eindhoven, december 2, 2019
  23. A. Bourdon, Current challenges in the modeling and validation of PIC and fluid simulations for low-temperature plasmas, invited lecture at the *Workshop on Modeling and validation of the 2019 Gaseous electronic conference*, College station, Texas, october 28, 2019
  22. A. Bourdon, The potential of electric and plasma propulsion for medium and long-term planetary exploration : research at LPP and in the Poseidon industrial chair, invited lecture at the *synthesis workshop "Horizon 2061"*, Toulouse, September 11-13, 2019
  21. A. Bourdon, P. Viegas, A. Obruchnik, Z. Bonaventura, Modeling of low-temperature plasma jets at atmospheric pressure, Topical invited lecture at the *XXXIV International Conference on Phenomena in Ionized Gases (ICPIG) and 10th International Conference on Reactive Plasmas (ICRP-10)*, Sapporo, Japan, July14-19, 2019
  20. A. Bourdon, Challenges in the modeling and the simulation of low-temperature plasmas, Plenary lecture at the *24th International Symposium on Plasma Chemistry (ISPC 24)*, Naples, Italy, June 9-14, 2019
  19. A. Bourdon, Barrier discharge and pulsed discharge modelling, *16th International Symposium on High Pressure Low Temperature Plasma Chemistry (HAKONE XVI)*, Tsinghua University, Beijing, China, September 2-7, 2018
  18. A. Bourdon, Challenges in the modeling and the simulation of low-temperature plasma discharges, *Gordon Research Conference (GRC) on "Fundamental Insights in Plasma Processes"*, Bryant University, Smithfield, R.I., USA, August 5 - 10, 2018
  17. A. Bourdon, Modeling and simulation of low-temperature plasma discharges, General lecture at the *24th Europhysics Conference on the Atomic and Molecular Physics of Ionised Gases (ESCAMPIG)*, Glasgow, U.K., July 17-21 2018
  16. A. Bourdon, Why always more efficient and accurate methods to solve Poisson's equation are needed for electrostatic PIC and fluid plasma simulations? *Plas@par scientific day 2018*, Pierre et Marie Curie Campus, February 9th, 2018
  15. A. Bourdon Simulation of nanosecond spark discharges for plasma assisted combustion applications, Plenary lecture at the *44th International Conference on Plasma Science (ICOPS)*, Atlantic City (NJ), May 21-25, 2017
  14. A. Bourdon, S. Kobayashi, Z. Bonaventura, F. Tholin, N. Popov, Study of nanosecond discharges in different H<sub>2</sub>/air mixtures at atmospheric pressure for plasma-assisted applications, *Kaust Research Conference on New Combustion Concepts*, King Abdullah University of Science and Technology (KAUST) Thuwal, Saudi Arabia, March 6-8, 2017
  13. A. Bourdon, 2D fluid simulations of discharges at atmospheric pressure in reactive gas mixtures, *68th Annual Gaseous Electronics Conference (GEC)*, Honolulu (USA), october 12-16, 2015

12. A. Bourdon, Dynamics and structure of atmospheric pressure discharges in capillary tubes, *20th International Colloquium on Plasma Processes (CIP)*, Saint Etienne, June1-5, 2015
11. A. Bourdon, Fluid simulations for atmospheric pressure low-temperature plasmas, *Workshop on the Exploration of Low Temperature Plasma Physics (WELTPP-17)*, Rolduc, Kerkrade, The Netherlands, november 20-21, 2014
10. A. Bourdon, F. Tholin, Modelling of nanosecond repetitively pulsed discharges, *41st European Physical Society (EPS) conference on Plasma Physics*, Berlin, June 23-27, 2014
9. A. Bourdon, F. Pechereau, P. Viegas and J. Jansky, Simulation of atmospheric pressure helium discharges in capillary tubes and in plasma jets, *5th International Conference on Plasma Medicine (ICPM)*, Nara, Japan, May 18-23, 2014
8. A. Bourdon, Fluid simulations for atmospheric pressure low-temperature plasmas, *International Conference on "Progress in numerical simulations for plasmas : Methods and Results"* organized by the Labex Plas@Par, Paris, March 27, 2014
7. A. Bourdon J. Jansky, F. P echereau and F. Tholin, Dynamics and structure of discharges in thin dielectric tubes in air and in helium at atmospheric pressure *7th international workshop on microplasmas (IWM)*, Beijing, China, May 20-23, 2013
6. A. Bourdon, Simulations of atmospheric pressure discharges in thin dielectric tubes : application to plasma jets, *IOP Plasma Physics Group Spring Conference*, St Hugh's College, University of Oxford, Oxford, April 2-5 2012
5. A. Bourdon, Modeling of streamer propagation, topical lecture at the *29th International Conference on Partially Ionized Gases(ICPIG)*, Cancun, Mexico, 12-17 july 2009
4. A. Bourdon, Plasma assisted combustion using nanosecond repetitively pulsed discharges, *Gordon Research conference (GRC) on Plasma Processing Science*, Mount Holyoke College, South Hadley, MA, USA, July 13-18, 2008
3. A. Bourdon, P. S egur, Streamer simulation in air at atmospheric pressure, *Workshop on Streamers, sprites, leaders, lightning : from micro- to macroscales*, Leiden (The Netherlands), 8-12 Oct 2007
2. A. Bourdon, P. S egur, Numerical modeling of filamentary dielectric barrier discharges in nitrogen taking into account metastable states, *Workshop on the multiscale nature of spark precursors and high altitude lightning*, Leiden (The Netherlands), mai 2005
1. A. Bourdon, Experimental and numerical studies carried out at CORIA, IUSTI and in Russia, *NASDA-NAL/CNES Workshop on catalycity*, Kakuda (Japon), f evrier 2000