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UNIVERSITÉ
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SUD

« DIREBIO »
**Décharges Impulsionnelles, REactivité à haute pression,
Interfaces plasma-BIOlogie.**

Liste des publications, articles et chapitres de livre, thèses

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2013

Arrays of microplasmas for the controlled production of tunable high fluxes of reactive oxygen species at atmospheric pressure

J. Santos Sousa, G. Bauville, V. Puech

Plasma Sources Science and Technology, 22 (2013) 035012 (12pp).

Bacterial decontamination of the inner wall of narrow tubes by a nitrogen afterglow at atmospheric pressure and its relation to local atomic nitrogen concentration

S. Limam, E. Odic, M. Kirkpatrick, A-M. Pointu

Plasma Processes and Polymers, 10 (2013) 679-685.

Comparisons of sets of electron-neutral scattering cross sections and swarm parameters in noble gases: I. Argon

L. Pitchford, L. Alves, K. Bartschat, S. Biagi, M-C. Bordage, A. Phelps, C-M. Ferreira, G. Hagelaar, W. Morgan, S. Pancheshnyi, V. Puech, A. Stauffer, O. Zatsarinny

Journal of Physics D : Applied Physics, 46 (2013) 334001 (19pp).

Comparisons of sets of electron–neutral scattering cross sections and swarm parameters in noble gases: II. Helium and neon

L. Alves, K. Bartschat, S. Biagi, M-C. Bordage, L. Pitchford, C-M. Ferreira, G. Hagelaar, W. Morgan, S. Pancheshnyi, A. Phelps, V. Puech, O. Zatsarinny

Journal of Physics D : Applied Physics, 46 (2013) 334002 (22pp).

Comparisons of sets of electron-neutral scattering cross sections and swarm parameters in noble gases: III. Krypton and xenon

M-C. Bordage, S. Biagi, L. Alves, K. Bartschat, S. Chowdhury, L. Pitchford, G. Hagelaar, W. Morgan, V. Puech, O. Zatsarinny

Journal of Physics D : Applied Physics, 46 (2013) 334003 (16pp).

Diagnostics of reactive oxygen species produced by microplasmas

J. Santos Sousa, V. Puech

Journal of Physics D : Applied Physics, 46 (2013) 464005 (12pp).

Effect of oxygen on the conversion of acetaldehyde in homogeneous plasmas of N₂/O₂/CH₃CHO mixtures

W. Faider, S. Pasquier, N. Blin-Simiand, L. Magne

Plasma Sources Science and Technology, 22 (2013) 065010 (14pp).

Kinetics of organic molecules in pulsed plasmas of nitrogen or N₂/O₂ mixtures at near atmospheric pressure

S. Pasquier, N. Blin-Simiand, L. Magne

Plasma Physics and Controlled Fusion, 55 (2013) 124023 (10pp).

Role of quenching of metastable states in acetaldehyde decomposition by a non-equilibrium nitrogen plasma at sub-atmospheric pressure

W. Faider, S. Pasquier, N. Blin-Simiand, L. Magne

Journal of Physics D : Applied Physics, 46 (2013) 105202 (16pp).

Towards a kinetic understanding of the ignition of air-propane mixture by a non-equilibrium discharge: the decomposition mechanisms of propane

S. Pasquier, S. Bentaleb, P. Jeanney, N. Blin-Simiand, P. Tardiveau, L. Magne, K. Gadonna, N. Moreau, F. Jorand

International Journal of Aerodynamics, 2 (2013) 135-158.

2012

Comparative study of air-propane and air-heptane mixtures ignition by nanosecond pulsed discharges

P. Tardiveau, S. Bentaleb, P. Jeanney, F. Jorand, S. Pasquier

International Journal of Plasma, Environmental Science and Technology, 6 (2012) 130-134.

Décharges hors-équilibre à pression atmosphérique dans les milieux confinés ou alvéolaires

P. Tardiveau, S. Pasquier

Chapitre II-1 du livre « Plasma et son environnement », p.115-136.

Collection *Intégrations des savoirs et des savoir-faire* éditée par Publications MRCT-CNRS (2012).

ISBN : 978-2-918701-09-5

Decomposition of acetaldehyde in atmospheric pressure filamentary nitrogen plasma

O. Koeta, N. Blin-Simiand, W. Faider, S. Pasquier, A. Bary, F. Jorand

Plasma Chemistry and Plasma Processing, 32 (2012) 991–1023.

DNA oxidation by reactive oxygen species produced at atmospheric pressure by microplasmas

J. Santos-Sousa, G. Bauville, B. Lacour, P-M. Girard, E. Sage, V. Puech, J-L. Ravanat

NATO Science for Peace and Security Series – A : Chemistry and Biology. (2012). Machala Z., Hensel K., Akishev Y. (Eds.), Springer (ISBN 978-94-007-2909-4), chapitre 9, pages 107-119.

Dynamics of colliding microplasma jets

C. Douat, G. Bauville, M. Fleury, M. Laroussi, V. Puech

Plasma Sources Science and Technology, 21 (2012) 034010 (8pp).

Effect of oxygen percentage on the removal of acetaldehyde by dielectric barrier discharge

O. Koeta, N. Blin-Simiand, S. Pasquier, F. Jorand, A. Bary

International Journal of Plasma, Environmental Science and Technology, 6 (2012) 227-232.

Ethanol/Acetone mixtures conversion in air Dielectric Barrier Discharges

S. Lovascio, N. Blin-Simiand, F. Jorand, P. Jeanney, S. Pasquier

International Journal of Plasma, Environmental Science and Technology, 6 (2012) 111-118.

Etude du déclenchement de combustion de mélanges air-propane et air-heptane par décharge mono-impulsionnelle nanoseconde

S. Bentaleb

Thèse soutenue le 6 juillet 2012 (direction P. Tardiveau).

Exciplex emission induced by nanosecond-pulsed microdischarge arrays operating at high repetition rate frequency

V. Martin, G. Bauville, M. Fleury, V. Puech

Plasma Sources Science and Technology, 21 (2012) 065001 (9pp).

On atmospheric-pressure non-equilibrium plasma jets and plasma bullets

X. Lu, M. Laroussi, V. Puech

Plasma Sources Science and Technology, 21 (2012) 034005 (17pp).

Relevant factors affecting microbial surface decontamination by pulsed light

C. Levy, X. Aubert, B. Lacour, F. Carlin

International Journal of Food Microbiology, 152 (2012) 168–174.

Role of nitrogen metastable states in non-thermal plasma conversion of Volatile Organic Compounds

S. Pasquier, W. Faider, N. Blin-Simiand, L. Magne, P. Jeanney, F. Jorand

International Journal of Plasma, Environmental Science and Technology, 6 (2012) 149-155.

2011

Décharge nanoseconde dans l'air et en mélange air/propane, Application au déclenchement de combustion

N. Moreau

Thèse soutenue le 1er juillet 2011 (direction S. Pasquier).

Etude de microdécharges comme source de rayonnement ultraviolet intense

V. Martin

Thèse soutenue le 8 décembre 2011 (direction V. Puech).

Experimental and numerical study of the propagation of a discharge in a capillary tube in air at atmospheric pressure

J. Jansky, P. Le Delliou, F. Tholin, P. Tardiveau, A. Bourdon, S. Pasquier

Journal of Physics D : Applied physics, 44 (2011) 335201 (12pp).

Filamentation of a nanosecond pulse corona discharge in air-propane mixtures at atmospheric pressure

S. Bentaleb, P. Tardiveau, N. Moreau, P. Jeanney, F. Jorand, S. Pasquier

IEEE Transactions on Plasma Science, 39 (2011) 2236-2237.

Interaction between two counter-propagating plasma bullets

C. Douat, M. Fleury, M. Laroussi, V. Puech

IEEE Transactions on Plasma Science, 39 (2011) 2298-2299.

Microplasmas as vacuum ultraviolet source for Cl-atom density measurements by resonance absorption spectroscopy

V. Martin, G. Bauville, N. Sadeghi, V. Puech

Journal of Physics D : Applied Physics 44 (2011) 435203.

Nanosecond pulsed discharges phenomenology in micrometer sized radially confined air gap

P. Le Delliou, P. Tardiveau, P. Jeanney, G. Bauville, S. Pasquier

IEEE Transactions on Plasma Science, 39 (2011) 2686-2687.

Nanosecond pulsed arrays of microdischarges in argon

V. Martin, G. Bauville, V. Puech

IEEE Transactions on Plasma Science, 39 (2011) 2678-2679.

$\text{N}_2(\text{A})$ as the source of excited species of N_2 , N and O in a flowing afterglow of N_2/NO mixture at atmospheric pressure

A. Pointu, G. Stancu

Plasma Sources Science and Technology, 20 (2011) 025005 (11pp).

Pressure effects in the spatial development of Micro-Cathode Sustained Discharges in rare-gas oxygen mixtures

J. Santos-Sousa, V. Puech

IEEE Transactions on Plasma Science, 39 (2011) 2680-2681.

Point-to-plane discharge on an anisotropic ceramic-matrix composite layer at atmospheric pressure

H. Nizard, P. Jeanney, S. Bentaleb, B. Drazenovic, P. Tardiveau, S. Pasquier

IEEE Transactions on Plasma Science, 39 (2011) 2188-2189.

Propagation of an air discharge at atmospheric pressure in a capillary glass tube : influence of the tube radius on the discharge structure

J. Jansky, P. Le Delliou, F. Tholin, Z. Bonaventura, P. Tardiveau, A. Bourdon, S. Pasquier
IEEE Transactions on Plasma Science, 39 (2011) 2106-2107.

2010

Detailed Characterization of 2-Heptanone Conversion by Dielectric Barrier Discharge in N₂ and N₂/O₂ Mixtures

A. Chiper, N. Blin-Simiand, M. Heninger, H. Mestdagh, P. Boissel, F. Jorand, J. Lemaire, J. Leprovost, S. Pasquier, G. Popa, C. Postel
Journal of Physical Chemistry A, 114 (2010) 397-407.

DNA oxidation by singlet delta oxygen produced by atmospheric pressure microdischarges

J. Santos Sousa, G. Bauville, B. Lacour, V. Puech, M. Touzeau, J-L. Ravanat
Applied Physics Letters, 97 (2010) 141502 (3 pp).

Electron impact ionization cross-sections of n-heptane

J-R. Vacher, F. Jorand, N. Blin-Simiand, S. Pasquier
International Journal of Mass Spectrometry, 295 (2010) 78-84.

Heating effects of a non equilibrium RF corona discharge in atmospheric air

F. Auzas, P. Tardiveau, V. Puech, M. Makarov, A. Agneray
Journal of Physics D : Applied Physics, 43 (2010) 495204 (7pp).

Microplasma generation of high fluxes of singlet delta oxygen at atmospheric pressure for biomedical applications

J. Santos-Souza
Thèse soutenue le 15 décembre 2010 (direction V. Puech).

Propane dissociation in a non-thermal high pressure nitrogen plasma

N. Moreau, S. Pasquier, N. Blin-Simiand, L. Magne, F. Jorand, C. Postel, J-R. Vacher
Journal of Physics D : Applied Physics, 43 (2010) 285201 (14pp).

Study of an atmospheric pressure flowing afterglow in N₂/NO mixture and its application to the measurement of N₂(A) concentration

A-M. Pointu, E. Mintusov, P. Fromy
Plasma Sources Science and Technology, 19 (2010) 015018 (10pp).

2009

Atmospheric pressure generation of singlet delta oxygen by microplasmas

J. Santos Sousa, G. Bauville, B. Lacour, V. Puech, M. Touzeau

European Physical Journal : Applied Physics, 47 (2009) 22807.

Capillary microplasmas for ozone generation

K. Hensel, Z. Machala, P. Tardiveau

European Physical Journal : Applied Physics, 47 (2009) 22813 (5pp).

Diffuse mode and diffuse-to-filamentary transition in a high pressure nanosecond scale corona discharge under high voltage

P. Tardiveau, N. Moreau, S. Bentaleb, C. Postel, S. Pasquier

Journal of Physics D : Applied Physics, 42 (2009) 175202 (11pp).

Electron impact ionization of formaldehyde

J.R. Vacher, F. Jorand, N. Blin-Simiand, S. Pasquier

Chemical Physics Letters, 476 (2009) p.178-181.

Etude de la synthèse chimique de films minces de SiO₂ sur surface métallique par décharge à barrière diélectrique à pression atmosphérique

V. Rohani

Thèse soutenue le 20 janvier 2009 (direction V. Puech).

OH kinetic in high-pressure plasmas of atmospheric gases containing C₂H₆ studied by absolute measurement of the radical density in a pulsed homogeneous discharge

L. Magne, S. Pasquier, K. Gadonna, P. Jeanney, N. Blin-Simiand, F. Jorand, C. Postel

Journal of Physics D : Applied Physics, 42 (2009) 165203 (17pp).

OH kinetics in photo-triggered discharges used for VOCs conversion

L. Magne, N. Blin-Simiand, K. Gadonna, P. Jeanney, F. Jorand, S. Pasquier, C. Postel

European Physical Journal : Applied Physics, 47 (2009) 22816 (9pp).

Oxidation of acetylene in atmospheric pressure pulsed corona discharge cell working in the nanosecond regime

M. Redolfi, N. Aggadi, X. Dutet, S. Touchard, S. Pasquier, K. Hassouni

Plasma Chemistry and Plasma Processes, 29 (2009) 173-195.

Removal of formaldehyde in nitrogen and in dry air by a DBD : importance of temperature and role of nitrogen metastable states

N. Blin-Simiand, S. Pasquier, F. Jorand, C. Postel, J-R. Vacher

Journal of Physics D : Applied Physics, 42 (2009) 122003 (5pp).

2008

Caractérisation d'une décharge radiofréquence produite dans les gaz à pression élevée pour le déclenchement de combustion

F. Auzas

Thèse soutenue le 10 décembre 2008 (direction V. Puech).

Electrostatic instability of an AC driven discharge in dense air

F. Auzas, M. Makarov, V. Puech, P. Tardiveau

IEEE Transactions on Plasma Science, 36 (2008) 944-945.

ICCD Camera Imaging of Discharges in Porous Ceramics

K. Hensel, P. Tardiveau

IEEE Transactions on Plasma Science, 36 (2008) 980-981.

Microplasmas : physics and application to the production of singlet oxygen O₂(a¹Δ_g)

V. Puech

European Physical Journal : Applied Physics, 42 (2008) 17-23.

Microplasmas as efficient generators of singlet delta oxygen

V. Puech, G. Bauville, B. Lacour, J. Santos-Sousa, L.C. Pitchford

Proceedings SPIE, 7005 (2008) 527.

Nanosecond scale discharge dynamics in high pressure air

P. Tardiveau, N. Moreau, F. Jorand, C. Postel, S. Pasquiers, P. Vervisch

IEEE Transactions on Plasma Science, 36 (2008) 894-895.

Nitrogen atmospheric pressure post discharges for surface biological decontamination inside small diameter tubes

A-M. Pointu, A. Ricard, E. Odic, M. Ganciu

Plasma Processes and Polymers, 5 (2008) 559-568.

O₂(a¹Δ_g) production at atmospheric pressure by microdischarge

J. Santos Sousa, G. Bauville, B. Lacour, V. Puech, M. Touzeau, L.C. Pitchford

Applied Physics Letters, 93 (2008) 011502.

Partial ionisation cross-sections of acetone and 2-butanone

J-R. Vacher, F. Jorand, N. Blin-Simiand, S. Pasquiers

International Journal of Mass Spectrometry, 273 (2008) 117-125.

Plasma reactivity and plasma-surface interactions during treatment of toluene by a dielectric barrier discharge

N. Blin-Simiand, F. Jorand, L. Magne, S. Pasquiers, C. Postel, J-R. Vacher

Plasma Chemistry and Plasma Processes, 28 (2008) 429-466.

Study of the treatment's homogeneity in plasma assisted chemical vapour deposition by atmospheric pressure dielectric barrier discharge

V. Rohani, G. Bauville, B. Lacour, V. Puech, F. D. Duminica, E. Silberberg

Surface Coatings Technology, 203 (2008) 862-867.

2007

Analysis of the self-pulsing operating mode of a microdischarge

X. Aubert, G. Bauville, J. Guillon, B. Lacour, V. Puech, A. Rousseau
Plasma Sources Science and Technology, 16 (2007) 23-32.

Effect of propene, n-decane, and toluene plasma kinetics on NO conversion in homogeneous oxygen-rich dry mixtures at ambient temperature

G. Lombardi, N. Blin-Simiand, F. Jorand, L. Magne, S. Pasquier, C. Postel, J.-R. Vacher
Plasma Chemistry and Plasma Processes, 27 (2007) 414-445.

Electrical and optical properties of AC microdischarges in porous ceramics

K. Hensel, V. Martisovits, Z. Machala, M. Janda, M. Lestinsky, P. Tardiveau, A. Mizuno
Plasma Processes and Polymers, 4 (2007) 682-693.

Electron impact ionization cross-sections of toluene

J.R. Vacher, F. Jorand, N. Blin-Simiand, S. Pasquier
Chemical Physics Letters, 434 (2007) 188-193.

Experimental and theoretical study of singlet oxygen production in microcathode sustained discharges

G. Bauville, B. Lacour, L. Magne, V. Puech, J. Santos-Sousa, J-P. Bœuf, G. Hagelaar, E. Munoz-Serrano, L.C. Pitchford, N. Sadeghi, M. Touzeau,
AIAA paper 2007-4025 (2007).

Influence of temperature on the removal of toluene by dielectric barrier discharge

N. Blin-Simiand, F. Jorand, Z. Belhadj-Miled, S. Pasquier, C. Postel
International Journal of Plasma, Environmental Science and Technology, 1 (2007) 64-70.

Kinetic of the OH radical in mixtures of atmospheric gases with hydrocarbons studied by time resolved LIF in photo-triggered discharges

L. Magne, S. Pasquier, C. Postel
dans *Gas Discharges : Fundamentals and Applications*, Ch. 5, p. 114-147, éd. J. de Amorim Filho, 2007 (ISBN 978-81-7895-287-1).

Production and reactivity of the hydroxyl radical in homogeneous high-pressure plasmas of atmospheric gases containing trace of light olefins

L. Magne, S. Pasquier, N. Blin-Simiand, C. Postel
Journal of Physics D : Applied Physics, 40 (2007) 3112-3127.

Singlet oxygen production in a microcathode sustained discharge

G. Bauville, B. Lacour, L. Magne, V. Puech, J.P. Bœuf, E. Munoz-Serrano, L.C. Pitchford,
Applied Physics Letters, 90 (2007) 031501.

2006

Association des plasmas non-thermiques à la catalyse : applications et verrous technologiques

S. Pasquier, J-M. Tatibouët

dans *Plasmas Froids : Astrophysique, Aérospatial, Environnement, Biologie, Nanomatériaux*, Ch.9, p.181-214. Publications de l'Université de Saint-Etienne (12/2006). ISBN : 2-86272-425-4.

Décontamination de surface par un procédé plasma froid à la pression atmosphérique

J. Larbre

Thèse soutenue le 26 juin 2006 (direction A.M. Pointu).

Influence of water vapour on acetaldehyde removal efficiency by DBD

A. Chiper, N. Blin-Simiand, F. Jorand, S. Pasquier, G. Popa, C. Postel

Journal of Optoelectronics and Advanced Materials, 8 (2006) 208-211.

Partial ionisation cross-sections of 2-propanol and ethanal

J-R. Vacher, N. Blin-Simiand, F. Jorand, S. Pasquier

Chemical Physics, 323 (2006) 587-594.

Transportation of nitrogen atoms in an atmospheric post-discharge

P. Fromy, A-M. Pointu, M. Ganciu , J. Orphal

Journal of Physics D : Applied Physics, 39 (2006) 108-112.

Europhysics News, 37 (2006) 7.

2005

A repetitively pulsed HF laser with a large discharge gap operating on the F₂-H₂ mixture

B. Aleksandrov, E. Klimuk, K. Kutumov, B. Lacour, V. Puech, G. Troshchinenco
Quantum Electronics, 35 (2005) 805-808.

Determination of atomic nitrogen concentrations using titration with molecular oxygen

M. Ganciu, J. Orphal, A.M. Pointu, M. Vervloet
Chemical Physics Letters, 413 (2005) 468-472.

Electron impact ionisation cross-sections of 2-heptanone

J-R. Vacher, N. Blin-Simiand, F. Jorand, S. Pasquier
International Journal of Mass Spectrometry, 240 (2005) 161-168.

LIF spectroscopy applied to the study of non-thermal plasmas for atmospheric pollutant abatement

L. Magne, S. Pasquier
C. R. Physique, 6 (2005) 908-917.

Optical and electrical characterization of pulsed dielectric barrier discharges in heterogeneous structure

P. Tardiveau, C. Boyer, F. Jorand, C. Postel, S. Pasquier
IEEE Transactions on Plasma Science, 33 (2005) 314-315.

Phototriggered XeCl lasers : from the first prototype to the industrial device

B. Lacour, S. Pasquier, V. Puech, D. Blin, I. Tassy, P. Delaporte
Proceedings SPIE, 5448 (2005) 366-378.

Production of active species in N₂-O₂ flowing post-discharges at atmospheric pressure for sterilization

A-M. Pointu, A. Ricard, B. Dodet, E. Odic, J. Larbre, M. Ganciu
Journal of Physics D : Applied Physics, 38 (2005) 1905-1909.

Production of hydroxyl radicals and removal of acetaldehyde in a photo-triggered discharge in N₂/O₂/CH₃CHO mixtures

L. Magne, S. Pasquier, V. Edon, S. Jorand, C. Postel, J. Amorim
Journal of Physics D : Applied Physics, 38 (2005) 3446-3450.

Removal of 2-heptanone by dielectric barrier discharges – Effect of a catalyst support

N. Blin-Simiand, P. Tardiveau, A. Risacher, F. Jorand, S. Pasquier
Plasma Processes and Polymers, 2 (2005) 256-262.

2004

Physico-chimie d'une décharge électrique impulsionale dans un mélange air-isoctane. Application au reformage par association plasma-catalyse.

K. Bouamra

Thèse soutenue le 15 octobre 2004 (direction S. Pasquier).

Photo-triggered discharges for high power lasers and pollutant removal

S. Pasquier, B. Lacour, V. Puech

Analele Stiintifice ale Univ. " Al. I. Cuza " : Fizica Plasmei si Spectroscopie, éd. Univ. Iasi (Roumanie), tome L (2004) 33-42.

Oxidation of 2-heptanone in air by a DBD-type plasma generated within a honeycomb monolith supported Pt-based catalyst

C. Ayrault, J. Barrault, N. Blin-Simiand, F. Jorand, S. Pasquier, A. Rousseau, J-M. Tatibouët
Catalysis Today, 89 (2004) 75-81.

Removal of pollutants by plasma catalytic processes

S. Pasquier

European Physical Journal : Applied Physics, 28 (2004) 319-324.

Study of hydrocarbons conversion in air using an homogeneous pre-ionised discharge

S. Pasquier, C. Postel, L. Magne, V. Puech, G. Lombardi

Journal of Advanced Oxidation Technologies, 7 (2004) 108-115.