

## Publication list of F.Quéré, September 2016

**h-index=24**

**2436 citations (ISI web, excluding self-citations)**

### Publications in reviewed international journals (*excluding proceedings*)

**[43] Space–time characterization of ultra-intense femtosecond laser beams**

G. Pariente, V. Gallet, A. Borot, O. Gobert and F. Quéré

[\*Nature Photonics\* \*\*10\*\*, 547–553 \(2016\)](#)

**[42] Attosecond lighthouses in gases: A theoretical and numerical study**

T. Auguste, O. Gobert, T. Ruchon, and F. Quéré

[\*Phys. Rev. A\* \*\*93\*\*, 033825 \(2016\)](#)

**[41] Ptychographic measurements of ultra-high intensity laser plasma interactions**

A. Leblanc, S. Monchocé, C. Bourassin-Bouchet, S. Kahaly and F. Quéré

[\*Nature Physics\* \*\*12\*\*, 301–305 \(2016\)](#)

**[40] Vacuum laser acceleration of relativistic electrons using plasma mirror injectors**

M. Thevenet, A. Leblanc, S. Kahaly, H. Vincenti, A. Vernier, F. Quéré and J. Faure

[\*Nature Physics\* \*\*12\*\*, 355–360 \(2016\)](#)

**[39] Spatio-temporal light springs: extended encoding of orbital angular momentum in ultrashort pulses.**

G. Pariente and F. Quéré

[\*Optics letters\* \*\*40\*\*, 2037-40 \(2015\)](#)

**[38] Dual spectral-band interferometry for spatio-temporal characterization of high-power femtosecond lasers**

V. Gallet, S. Kahaly, O. Gobert, and F. Quéré

[\*Optics Letters\* \*\*39\*\*, 4687-4690 \(2014\)](#)

**[37] Optically-Controlled Solid-Density Transient Plasma Gratings**

S Monchocé, S Kahaly, A Leblanc, L Videau, P Combis, F Réau, D Garzella, P D'Oliveira, Ph Martin, F Quéré

[\*Physical Review Letters\* \*\*112\*\*, 145008 \(2014\)](#)

**[36] Optical properties of relativistic plasma mirrors**

H. Vincenti, S. Monchocé, S. Kahaly, Ph. Martin and F. Quéré

[\*Nature Communications\* \*\*5\*\*, 3403 \(2014\)](#)

**[35] Investigation of amplitude spatio-temporal couplings at the focus of a 100 TW-25 fs**

## laser

S Kahaly, S Monchocé, V Gallet, O Gobert, F Réau, O Tcherbakoff, P D'Oliveira, Ph Martin, F Quéré

[\*Applied Physics Letters\* \*\*104\*\* \(5\), 054103 \(2014\)](#)

### [34] Applications of ultrafast wavefront rotation in highly nonlinear optics

F Quéré, H Vincenti, A Borot, S Monchocé, T J Hammond, Kyung Taec Kim, J A Wheeler, Chunmei Zhang, T Ruchon, T Auguste, J F Hergott, D M Villeneuve, P B Corkum and R Lopez-Martens

[\*Journal of Physics B\* \*\*47\*\*, 124004 \(2014\)](#)

### [33] Plasma devices for focusing extreme light pulses

J Fuchs, AA Gonoskov, M Nakatsutsumi, W Nazarov, F Quéré, AM Sergeev, XQ Yan

[\*The European Physical Journal Special Topics\* \*\*223\*\* \(6\), 1169-1173 \(2014\)](#)

### [32] Ultrafast formation of hydrated electrons in water at high concentration: Experimental evidence of the free electron

P Palianov, P Martin, F Quéré, S Pommeret

[\*Journal of Experimental and Theoretical Physics\* \*\*118\*\* \(3\), 489-493 \(2014\)](#)

### [31] Spectral characterization of laser-driven solid-based high harmonics in the coherent wake emission regime

J van Tilborg, BH Shaw, T Sokollik, S Rykovanov, S Monchocé, F Quéré, Ph Martin, A Malvache, WP Leemans

[\*Optics letters\* \*\*38\*\*, 4026-4029 \(2013\)](#)

### [30] Photonic streaking of attosecond pulse trains

K-T. Kim, C. Zhang, T. Ruchon, J-F. Hergott, T. Auguste, D. M. Villeneuve, P. B. Corkum, and F. Quéré

[\*Nature Photonics\* \*\*7\*\*, 651–656 \(2013\)](#)

### [29] Direct Observation of Density-Gradient Effects in Harmonic Generation from Plasma Mirrors

S. Kahaly, S. Monchocé, H. Vincenti, T. Dzelzainis, B. Dromey, M. Zepf, Ph. Martin, and F. Quéré

[\*Physical Review Letters\* \*\*110\*\*, 175001 \(2013\)](#)

### [28] Coherent wake emission spectroscopy as a probe of steep plasma density profiles

A. Malvache, A. Borot, F. Quéré and R. Lopez-Martens

[\*Physical Review E\* \*\*87\*\*, 035101 \(2013\)](#)

### [27] Attosecond lighthouses from plasma mirrors

J. Wheeler, A. Borot, S. Monchocé H. Vincenti, A. Ricci, A. Malvache, R. Lopez-Martens, and F. Quéré

[Nature Photonics 6, 828-832 \(2012\)](#)

**[26] Attosecond control of collective electron motion in plasmas**

A. Borot, A. Malvache, X. Chen, A. Jullien, J-P. Geindre, P. Audebert, G. Mourou, [F. Quéré](#) and R. Lopez-Martens

[Nature Physics 8 416-421 \(2012\)](#)

**[25] Attosecond Lighthouses: How To Use Spatiotemporally Coupled Light Fields To Generate Isolated Attosecond Pulses**

H. Vincenti and [F. Quéré](#)

[Physical Review Letters 108 113904 \(2012\)](#)

**[24] High-harmonic generation from plasma mirrors at kilohertz repetition rate**

A. Borot, A. Malvache, X. Chen, D. Douillet, G. Iaquaniello, Th. Lefrou, P. Audebert, J-P. Geindre, G. Mourou, [F. Quéré](#) and R. Lopez-Martens

[Optics Letters 36 1461-1463 \(2011\)](#)

**[23] High-order harmonic and attosecond pulse generation on plasma mirrors: basic mechanisms**

C. Thaury and [F. Quéré](#)

[J. Phys. B: At. Mol. Opt. Phys. 43 213001 \(2010\)](#)

**[22] Mechanisms of forward laser harmonic emission from thin overdense plasmas**

H. George, [F. Quéré](#), C. Thaury, G. Bonnaud, Ph. Martin,

[New Journal of Physics 11, 113028 \(2009\)](#)

**[21] Coherent dynamics of plasma mirrors**

C. Thaury, H. George, [F. Quéré](#), R.A. Loch, J-P. Geindre, P. Monot, Ph. Martin,

[Nature Physics 4, 631 \(2008\)](#)

**[20] Phase Properties of Laser High-Order Harmonics Generated on Plasma Mirrors**

[F. Quéré](#), C. Thaury, J-P. Geindre, G. Bonnaud, P. Monot, Ph. Martin

[Phys. Rev. Lett. 100, 095004 \(2008\)](#)

**[19] Comment on "Transition to the relativistic regime in high order harmonic generation"**

[F. Quéré](#), C. Thaury, J-P. Geindre, Ph. Martin,

[Phys. Rev. Lett. 100, 089401 \(2008\)](#)

**[18] Plasma mirrors for ultrahigh-intensity Optics**

C. Thaury, [F. Quéré](#), J-P. Geindre, A. Levy, T. Ceccotti, P. Monot, M. Bougeard, F. Réau, P. d'Oliveira, P. Audebert, R. Marjoribanks, Ph. Martin,

[Nature Physics 3, 424 - 429 \(2007\)](#)

**[17] Double plasma-mirror for ultra-high temporal contrast ultra-intense laser pulses**  
A. Lévy, T. Ceccotti, P. D'Oliveira, F. Réau, M. Perdrix, F. Quéré, P. Monot, M. Bougeard, H. Lagadec, P. Martin, J.-P. Geindre, P. Audebert

[\*Optics Letters\*, \*\*32\*\*, 3 \(2007\)](#)

**[16] Coherent Wake Emission of High-Order Harmonics from Overdense Plasmas**  
F. Quéré, C. Thaury, P. Monot, S. Dobosz, Ph. Martin, J.-P. Geindre and P. Audebert.

[\*Physical Review Letters\* \*\*96\*\*, 125004 \(2006\)](#)

**[15] New target for high-intensity laser-matter interaction : gravitational flow of micrometer-sized powders**

M.Servol, F.Quéré, M.Bougeard, P. Monot, Ph.Martin, A. Ya Faenov, T.A. Pikuz, P. Audebert, M. Francucci, P.Petrocelli

[\*Review of Scientific Instruments\* \*\*76\*\*, 083105 \(2005\)](#)

**[14] Temporal characterization of attosecond xuv fields**

F. Quéré, Y. Mairesse, J.Itatani

[\*Journal of Modern Optics\* \*\*52\*\*, 339 \(2005\)](#)

**[13] Frequency-Resolved Optical Gating for Complete Reconstruction of Attosecond Bursts**

Y. Mairesse, F. Quéré,

[\*Physical review A\* \*\*71\*\*, 011401\(R\) \(2005\)](#)

**[12] High-Order Harmonics Generation by non-linear reflection of an intense high-contrast laser pulse on a plasma**

P. Monot, G. Doumy, S. Dobosz, M. Perdrix, P. D'Oliveira, F. Quéré, F. Réau, Ph. Martin, P. Audebert, J.C. Gauthier, J.P. Geindre

[\*Optics Letters\* \*\*29\*\* \(8\) 893-5 \(2004\)](#)

**[11] Complete characterization of a plasma mirror for the production of high-contrast ultra-intense laser pulses**

G. Doumy, F. Quéré, O. Gobert, M. Perdrix, Ph. Martin, P. Audebert, J.C. Gauthier, J.-P. Geindre, T. Wittmann

[\*Physical Review E\* \*\*69\*\*\(2\), 26402 \(2004\)](#)

**[10] X-ray Spectroscopic Observations of a Superdense Plasma in Nanoparticles Irradiated by Superintense Femtosecond Laser Radiation**

A. Ya. Faenov, T. A. Pikuz, I. Yu. Skobelev, A. I. Magunov, V. P. Efremov, M. Servol, F. Quéré, M. Bougeard, P. Monot, Ph. Martin, M. Francucci, G. Petrocelli, and P. Audebert

[\*JETP Letters\* \*\*80\*\*, 730 \(2004\)](#)

**[9] Dynamics of Femtosecond Laser Interactions with Dielectrics**

S. S. Mao, F. Quéré, S. Guizard, X. Mao, R. E. Russo, G. Petite, P. Martin.

[Applied Physics A 79, 1695-1709 \(2004\)](#)

**[8] Time-resolved double ionization with few cycle laser pulses**

F. Légaré, I. V. Litvinyuk, P. W. Dooley, F. Quéré, A. D. Bandrauk, D. M. Villeneuve, and P. B. Corkum

[Physical Review Letters 91, 093002 \(2003\)](#)

**[7] Attosecond spectral shearing interferometry**

Quéré-F, Itatani-J, Yudin-G.L, Corkum-P.B

[Physical Review Letters 90, 073 902 \(2003\)](#)

**[6]Attosecond streak camera**

Itatani-J, Quéré-F, Yudin-G.L, Ivanov-M. Yu., Krausz-F., Corkum-P.B

[Physical Review Letters 88, 173 903, \(2002\)](#)

**[5] Time-resolved study of laser-induced breakdown in dielectrics**

Quéré-F, Guizard-S, Martin-Ph

[Europhysics Letters, 56 \(1\) , pp. 138-144 \(2002\)](#)

**[4] Femtosecond laser ablation of transparent dielectrics: measurement and modelisation of crater profiles**

S.Guizard, A. Semerok, J. Gaudin, M. Hashida, Ph. Martin, F. Quéré

[Applied Surface Science 186, p.304 \(2001\)](#)

**[3] Hot-electron relaxation in quartz using high-order harmonics**

Quéré-F; Guizard-S; Martin-Ph; Petite-G; Merdji-H; Carré-B; Hergott-J-F, Le Déroff-L.

[Physical Review B 61, 9883-6 \(2000\)](#)

**[2] Comment on "Ultrafast electron dynamics in femtosecond optical breakdown of dielectrics"**

Petite-G; Guizard-S; Martin-Ph; Quéré-F;

[Physical Review Letters 85, p.5182. \(1999\)](#)

**[1] Detection by NMR of a "local spin gap" in quenched CsC<sub>60</sub>**

Brouet-V; Alloul-H; Quéré-F; Baumgartner-G; Forro-L

[Physical Review Letters. 82, no.10; 8; p.2131-4 \(1999\)](#)

## Patents

- « **Dispositif et procédé de caractérisation d'un faisceau de lumière** »  
F. Quéré, V. Gallet, G. Pariente  
*Patent application # FR1455472, filed on the 16/06/2014*
- « **Procédé de structuration spatiale contrôlée optiquement d'un plasma sur cible solide** »  
F. Quéré, S. Kahaly, S. Monchocé  
*Patent application # FR1362611, filed on the 13/12/2013*
- « **Dispositif et procédé de caractérisation d'un faisceau de lumière** »  
F. Quéré,  
*Delivered in France on 19/07/2013 and published under number 2 976663*
- « **Procédé et dispositif de génération de génération d'impulsions attosecondes isolées** »  
F. Quéré  
*Delivered in France on 05/07/2013 and published under number 2 976132*
- « **Procédé et dispositif de génération de rayonnement ou de particules par interaction entre un faisceau laser et une cible** »  
F. Quéré, M. Servol, M. Bougeard  
*Delivered in France on 01/12/2006 and published under number 2 874785*

## Invited talks in national and international conferences

- “ **International Conference on Extreme Light**”, 23-27 Nov. 2015, Bucharest, Romania  
Title: *Ultrahigh intensity laser-plasma interactions using structured light fields*
- “ **ELI-NP International summer school**”, 21-25 Sept. 2015, Bucharest, Romania  
Title of the lecture: *Physics and applications of plasma mirrors*
- “ **CLEO Pacific Rim**”, 24-28 Aug. 2015, Busan, Korea  
Title: *Vacuum laser acceleration of relativistic electrons using plasma mirror injectors*
- “ **Ultrafast Optics 2015**”, 16-21 Aug. 2015, Beijing, China  
Title: *Ultrahigh intensity laser-plasma interactions using structured light fields*
- **National conference “Optique Bretagne 2015”**, 6-9 July 2015, Rennes, France  
Title: *‘Lasers attosecondes’ : principes, metrologie et applications*
- **International school on “Novel light sources from laser-plasma interactions”**, 20-24 April. 2015, Dresde, Germany

**Title of the lecture:** *Plasma mirrors as attosecond light sources*

- “**Frontiers in Optics/Laser Science (FiO)**”, Oct. 2014, Tucson, USA

**Title** : *Plasma mirrors as attosecond light sources*

- “**17th Gordon Research Conference on Multiphoton Processes**”, June 2014, Boston, USA

**Title** : *Advanced measurement schemes for high-field physics: ptychography from transient plasma gratings*

- “**45th Annual DAMOP Meeting**”, June 2014, Madison, USA

**Title** : *Ultrafast Rotation of Light Fields Applied to Highly Non-Linear Optics*

- “**11th European Conference on Atoms, Molecules and Photons (ECAMP11)**”, June 2013, Aarhus, Denmark

**Title** : *Plasma Mirrors: the physics of specular reflection at ultrahigh laser intensities*

- “**9th conference on Ultrafast Optics (UFO IX)**”, Feb. 2013, Davos, Switzerland

**Title** : *Measuring and exploiting spatio-temporal couplings of ultrashort laser beams*

- “**International workshop on laser-matter interaction (WLMI)**”, June 25-29 2012, Porquerolles, France

**Title** : *Attosecond lighthouses*

- “**13th International Conference on X-Ray Lasers (ICXRL 2012)**”, June 11-15 2012, Paris, France

**Title** : *Attosecond lighthouses*

- “**High-Intensity Lasers and High-Field Phenomena (HILAS)**”, March 19-21 2012, Berlin, Germany

**Title** : *Attosecond lighthouses: a new tool for ultrafast science and metrology*

- “**Symposium of Attoscience and Ultrafast Quantum Control**”, September 7-9 2011, London, GB

**Title** : *Attosecond lighthouses*

- “**Journée des phénomènes ultrarapides**”, October 17-19 2011, Rouen, France

**Title** : *Génération d'impulsions attosecondes sur miroir plasma : état de l'art de nouveauté*

- “**Frontiers in Optics 2010/Laser Science XXVI**”, October 24-28 2010, Rochester, USA

**Title** : *HHG on Plasma Mirrors: towards attosecond sources of second generation*

- “**Colloque sur les Lasers et l'Optique Quantique**”, September 7-9 2009, Mouans-Sartoux, France

**Title** : *Impulsions attosecondes de lumière : de la génération à la mesure*

- “**UltraFast Optics (UFO VII) and High Field Short Wavelength (HFSW XIII)**”, September 1-4 2009, Arcachon, France

**Title** : *Attosecond pulse generation from plasma mirrors: basic mechanisms and temporal metrology (Keynote talk)*

- “**Forum de l’Institut Laser-Plasma**”, June 14-19 2009, Giens, France

**Title** : *Harmoniques sur miroirs plasmas : état de l'art et perspectives*

- “**Extreme light Infrastructure International Workshop**”, April 2009, Palaiseau, France

**Title** : *Attosecond sources of second generation, and beyond*

- “**SPIE Europe Optics + Optoelectronics**”, April 20 - 23 2009, Prague, Czech Republic

**Title** : *Attosecond and femtosecond metrology for plasma mirrors*

- “**Conference on Lasers and Electro Optics and International Quantum Electronics Conference**”, May 4-9 2008, San Jose, USA.

**Title**: *High Order Harmonic Generation in High Intensity Laser-Solid Interactions*

- « **European Physical Society Plasma Physics Conference** », June 9-13 2008, Hersonnissos, Greece

**Title** : *Basic mechanisms of high-order harmonic generation on plasma mirrors*

- « **Ultra-intense Laser Interaction Sciences (ULIS2007)** », October 1-5 2007, Bordeaux, France

**Title** : *High-order harmonic generation from plasma mirrors*

- “**Attosecond Physics**”, **391. WE-Heraeus-Seminar**, August 1-5 2007, Dresde, Germany

**Title** : *High-order harmonic generation from plasma mirrors*

- **Workshop “New and emerging sources of intense beams of particles and short-wavelength radiation”**, June 11-13 2007, Lund, Sweden

**Title** : *High-order harmonics*

- « **15th International Laser Physics Workshop (LPHYS - 2006)** », July 24-28 2006, Lausanne, Switzerland

**Title** : *High-order harmonics generation from overdense plasmas*

- **Congrès annuel de la société française de Physique, section Plasmas**, May 2-5 2006, Pont-à-Mousson, France

**Title**: *Interaction laser-plasma à haute intensité : miroir plasma et génération d’harmoniques*

- « **7<sup>èmes</sup> journées des phénomènes ultra-rapides** », December 5-7 2005, Villeneuve d’Ascq, France

**Title**: *Les méthodes de caractérisation temporelle d’impulsions attosecondes*

- « **10th International Conference on Multiphoton Processes (ICOMP 2005)** »



October 9-14 2005, Orford, Canada

**Title:** *Frequency-Resolved Optical Gating for Complete Reconstruction of Attosecond Bursts*

- «**Forum de l'Institut Laser-Plasma-ILP**», March 13-18 2005, Autrans, France

**Title:** *Interaction laser-plasma à la densité du solide : miroir plasma et génération d'harmoniques*

- “**High-field attosecond physics**”, January 9-15 2005, Obergurgl, Austria

**Title:** *Frequency-Resolved Optical Gating for Complete Reconstruction of Attosecond Bursts*

- «**4<sup>th</sup> International Ultrafast Optics Conference**», July 2003, Vienna, Austria

**Title:** *Temporal characterization of attosecond pulses*

- **UVX 2000**, May 16-19 2000, Porquerolles, France

**Title:** *Utilisation d'impulsions UV femtosecondes pour l'étude de la relaxation électronique dans SiO<sub>2</sub>*

- «**Laser-Induced Damage Conference**», September 1998, Boulder, USA

**Title:** *Subpicosecond studies of carrier dynamics in laser induced breakdown*