

Jacques Albert

Complete list of publications, patents, conference presentations, and talks (May 2020)

Papers in refereed scientific journals (inverse chronological order)

183. F. Ouellette, J. Li, Z. Ou, and J. Albert, "High resolution interrogation of tilted fiber Bragg gratings using an extended range dual wavelength differential detection," *Opt. Express* 28 (10), pp. 14662-14676 (2020).

182. M. Loyez, E. M. Hassan, M. Lobry, F. Liu, C. Caucheteur, R. Wattiez, M. C. DeRosa, W. G. Willmore, and J. Albert, "Rapid Detection of Circulating Breast Cancer Cells Using a Multiresonant Optical Fiber Aptasensor with Plasmonic Amplification," *ACS Sensors*, vol. 5, no. 2, pp. 454–463 (2020).

181. F. Liu, M. Qi, T. Guo, and J. Albert, "Saturable Absorption and Bistable Switching of Single Mode Fiber Core-Guided Light by a 6 nm-thick , Few Layers Graphene Coating on the Cladding Surface," *Ann. Phys.(Berlin)*, p. 2000157 (2020).

180. O. Al-Mai, J. Albert, and M. Ahmadi, "Development and Characterization of Compliant FBG-Based, Shear and Normal Force Sensing Elements for Biomechanical Applications," *IEEE Sens. J.*, vol. 20, no. 10, pp. 5176–5186 (2020).

179. J. Koppert, H. Jean-Ruel, D. O'Neill, C. Harder, W. Willmore, A. Ianoul, and J. Albert, "Self-heating tilted fiber Bragg grating device for melt curve analysis of solid-phase DNA hybridization and thermal cycling," *Anal. Bioanal. Chem.*, vol. 411, no. 26, pp. 6813–6823 (2019).

178. H. A. Dinovitzer, A. Laronche, and J. Albert, "Fiber Bragg Grating High Impact Force Sensors with Adjustable Sensitivity and Dynamic Range," *IEEE Sens. J.*, vol. 19, no. 14, pp. 5670–5679 (2019).

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184. S. A. Alqarni, H. Jean-Ruel, J. Albert, and C. Smelser, "Dual-Purpose Tilted Fiber Bragg Grating for Simultaneous Inducement of Localised Hyperthermia and Temperature Profiling", Photonics North, Quebec City, May 24th -26th 2016
183. D. Feng and J. Albert, "The effect of oriented-deposition gold coatings on the surface plasmon excitation by tilted fiber Bragg grating," Photonics North, Quebec City, May 24th -26th 2016
182. V. Marquez-Cruz and J. Albert, "Analysis of time-controlled electroless deposited gold films on TFBGs," Photonics North, Quebec City, May 24th -26th 2016

181. A. Van Newkirk, A. Velázquez-Benitez, E. Antonio-Lopez, J. Albert, R. Amezcua-Correa, and A. Schülzgen, “3D Bending Sensor Combining Multicore Fiber with a Mode-Selective Photonic Lantern,” Optical Society of America 4th Workshop on Specialty Optical fibers (WSOF'2015), paper WT4A.6, Hong Kong, (November 2015)
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177. J. Albert, “Biochemical Limits of Detection with Near Infrared Surface Waves on Optical Fibers,” Invited talk, SES2B.2, OSA Topical meeting on Novel Optical Materials and Applications, Advanced Photonics Congress, Boston (July 2015)
176. **W. Zhou, D. Mandia**, S. Barry, and J. Albert “Monitoring of the Insulator-to-Metal Transition of Ultrathin Gold Coatings on Optical Fibers,” oral paper NM4.C4, OSA Topical meeting on Novel Optical Materials and Applications, Advanced Photonics Congress, Boston (July 2015)
175. S. T. Barry, J. Albert, **D. J. Mandia, W. Zhou**, “Metallic Nanocoatings on Optical Fibers as a Sensor Platform,” Annual meeting of the Canadian Society of Chemistry, Ottawa (June 2015)
174. J. Albert “Optical fibers, gratings, plasmons, and nanoparticles,” Invited tutorial, IC-Impacts Summer Institute: Optical Sensing Technologies”, University of Toronto, Toronto, ON, Canada. June 14-19, 2015.
173. **V. Marquez-Cruz** and J. Albert, “Analysis of the variables involved in near infrared TFBG-assisted SPR biochemical sensors,” IC-Impacts Summer Institute: Optical Sensing Technologies”, University of Toronto, Toronto (June 14-19, 2015)
172. **D. J. Mandia, W. Zhou**, J. Albert, S. T. Barry, Use of Dielectrics for Refractometric Sensivity Enhancement in Tilted Fiber Bragg Gratings. IC-Impacts Summer Institute: Optical Sensing Technologies”, University of Toronto, Toronto (June 14-19, 2015)
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168. **D. J. Mandia, W. Zhou, J. Albert, and S. T. Barry**, “Optical Fiber-based Approach to In-situ Monitoring of Group 11 Metal-organic Chemical Vapor Deposition,” paper Nano-160, 9th International conference on surfaces, coatings, and nanostructured materials (NANOSMAT) (Dublin 2014)
167. T. Guo, B. O. Guan, H. Y. Tam, and J. Albert, “Tilted fiber Bragg gratings as mechanical and biochemical sensors,” **Invited paper** 9274-10, SPIE Proc. Advanced Sensor Systems and Applications IV, Photonics Asia (Beijing, 2014)
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66^{ème} Congrès de l’ACFAS, Québec, 11-15 mai (1998)
31. **A. L. Tchebotareva**, J. L. Brebner, S. Roorda, and J. Albert
“Implantation des protons dans le coeur d’une fibre standard monomode: Effet sur la photosensibilité à la lumière UV”
66^{ème} Congrès de l’ACFAS, Québec, 11-15 mai (1998)

30. J. Albert, F. Bilodeau, S. J. Mihailov, D. Stryckman, D.C. Johnson, and K. O. Hill
“Photosensibilité et réseaux de Bragg dans les circuits optiques planaires”
Conférencier invité, 66^{ème} Congrès de l’ACFAS, Québec, 11-15 mai (1998)
29. **M. Verhaegen**, J. L. Brebner, and J. Albert
“Photosensibilité induite par implantation ionique dans la silice pure: Effets de la dose implantée et du type de dommage produit par le bombardement de silicium”
65^{ème} Congrès de l’ACFAS, Trois-Rivières, 12-16 mai (1997)
28. **A. Tchebotareva**, J. Albert, S. Roorda, and J. L. Brebner
“Les effets de l’implantation des protons dans les systèmes des verres de SiO₂ et SiO₂:GeO₂”
65^{ème} Congrès de l’ACFAS, Trois-Rivières, 12-16 mai (1997)
27. **M. Essid**, J. L. Brebner, and J. Albert
“Changements de l’indice de refraction de la silice dopée au germanium suite à l’implantation ionique à haute énergie et à l’illumination UV”
65^{ème} Congrès de l’ACFAS, Trois-Rivières, 12-16 mai (1997)
26. J. Albert
“Photosensitivity of doped and heavy ion implanted silica glasses under excimer laser irradiation”
Invited speaker, *Glass: What's New?*, 1996 Gordon Research Conference, Tilton NH (1996)
25. **A. Ait-Ouali**, **L. B. Allard**, **M. Essid**, J. L. Brebner, and J. Albert
“Raman study of implantation effects on structural properties of silica”
Canadian Association of Physicists Annual Meeting, Ottawa, June 16-21 (1996)
24. **M. Essid**, J. L. Brebner, and J. Albert
“High energy ion implantation induced photosensitivity in Ge-doped silica”
Canadian Association of Physicists Annual Meeting, Ottawa, June 16-21 (1996)
23. **L. B. Allard**, J. Albert, and J. L. Brebner
“Luminescence and absorption studies of germanosilicate fibre preforms”
Canadian Association of Physicists Annual Meeting, Ottawa, June 16-21 (1996)
22. **M. Essid**, J. L. Brebner, and J. Albert
“Photosensibilité de Ge:SiO₂ implanté à haute énergie”
64^{ème} Congrès de l’ACFAS, Montréal, 13-17 Mai (1996)
21. **A. P. Knights**, P. J. Simpson, **L. B. Allard**, J. L. Brebner, and J. Albert
“Etude par spectroscopie d’annihilation de positrons du dommage créé par implantation ionique dans du SiO₂”
64^{ème} Congrès de l’ACFAS, Montréal, 13-17 Mai (1996)

20. **M. Verhaegen**, J. L. Brebner, and J. Albert
“Corrélation entre les variations d'indice de réfraction photoinduits et le blanchissage des bandes d'absorption dans l'ultra-violet du vide dans la silice implantée par des ions énergétiques”
64^{ème} Congrès de l'ACFAS, Montréal, 13-17 Mai (1996)
19. J. Albert
“Photosensitivity in silica glasses due to ion implantation”
Invited talk, Annual meeting of the Canadian Association of Physicists, Ottawa (1996)
18. **M. Verhaegen**, J. L. Brebner, and J. Albert
“Correlation between large photoinduced refractive index changes and bleaching of VUV absorption bands in ion-irradiated fused silica”
Spring Meeting of the Materials Research Society, San Francisco, 8-12 April (1996)
17. **M. Essid**, **M. Verhaegen**, **L. B. Allard**, J. L. Brebner, and J. Albert
“Photosensitivity induced in Ge-doped silica by high energy ion implantation”
Annual meeting of the Can. Assoc. of Physicists, Quebec, June (1995)
16. **L.B. Allard**, **M. Verhaegen**, J. L. Brebner, J. Albert, and P. J. Simpson
“Photosensitivity of ion-implanted silica”
Annual meeting of the Can. Assoc. of Physicists, Quebec, June (1995)
15. **L. B. Allard**, **M. Verhaegen**, J. L. Brebner, and J. Albert
“Photoluminescence of ion-implanted silica using ArF and KrF excimer laser excitation”
March Meeting of the American Physical Society, San Jose CA, 20-24 March (1995)
14. J. Albert
“Photosensitive planar waveguides”
Invited Paper, RANK Prize Fund Symposium on Novel Optical Effects in Glasses", Grasmere UK, 6-9 March (1995)
13. **L. B. Allard**, **M. Verhaegen**, **M. Essid**, J. L. Brebner, and J. Albert
“Optical properties of ion implanted silica irradiated with 193 nm ArF excimer laser light”
Fall Meeting of the Materials Research Society, Symposium on Optical waveguide materials, Boston, November (1994)
12. **M. Verhaegen**, J. L. Brebner, and J. Albert
“Guides d'ondes optiques par implantation d'ions lourds dans la silice”, 62^{ème} Congrès de l'ACFAS, Université du Québec à Montréal, Montréal, Mai (1994)
11. K. O. Hill, B. Malo, D. C. Johnson, F. Bilodeau, and J. Albert
“Photoinduced gratings in optical waveguides”

Invited presentation ThEEE2, 9th Interdisciplinary Laser Science Conference, Toronto, October (1993)

10. S. I. Najafi, S. Honkanen, J. Martin, **J. Y. Chen**, **P. Lefebvre**, **Q. He**, N. Peyghambarian, **C. Roux**, M. Leclerc, C. L. Callender, **S. J. Karnas**, and J. Albert
“Polythiophene as a nonlinear optical material for all-optical waveguide switches”
International Conference on Frontiers of Optical Systems and Materials, Padova, Italy, June (1992)

9. J. Albert, B. Malo, K. O. Hill, D. C. Johnson, R. Leonelli, and J. L. Brebner
“Kramers-Kronig analysis of photosensitivity in ion implanted optical waveguides”
Annual Meeting of the Canadian Association of Physics, Windsor (1992)

8. C. L. Callender, J. Albert, **C. Carere**, **S. J. Karnas**, M. Leclerc, and G. Daoust
“Third harmonic generation measurements on thin films of novel polythiophenes”
Annual Meeting of the Optical Society of America, San Jose CA (1991)

7. J. Albert
“Glass waveguide fabrication technology: A review”
Invited Talk, Annual Meeting of the Optical Society of America, Boston, November (1990)

6. J. Albert
“Effect of CO₂ laser radiation on ion-exchanged glass waveguides”
Annual Meeting of the Optical Society of America, Boston, November (1990)

5. **M. J. Li**, J. Albert, S. I. Najafi, **W. J. Wang**, and K. O. Hill
“Ion-exchanged glass waveguides with etched gratings”
Annual Meeting of the Optical Society of America, Boston, November (1990)

4. **M. J. Li**, **W. J. Wang**, S. I. Najafi, J. Albert, and K. O. Hill
“Glass waveguides with gratings”
First IEEE Int. Workshop on photonic networks, components, and applications, Montebello (1990)

3. J. Albert and G. L. Yip
“Theoretical analysis of single-mode channel optical waveguides made by two-step ion exchange in glass”
International IEEE AP-S Symposium and URSI Radio Science Meeting, Blacksburg VA (1987)

2. G. L. Yip and J. Albert
“Optical waveguides by K⁺-ion exchange in glass”
Sino-British joint meeting on Optical Fiber Communication, Beijing (1986)

1. J. Albert, D. Vincent, and R. Tremblay

“Hybrid bistable optical device using an acousto-optics waveguide modulator”
Annual meeting of the Optical Society of America, Chicago, Oct. (1980)

Book chapters

J. Albert

“Ion exchange from salt melts”

Chapter 2 of *Glass integrated optics*, S. I. Najafi (ed.), Artech House, Boston (1992)

Other publications

7. J. Albert and Y. Shevchenko, “PLASMONIC OPTICAL STRUCTURES: Tilted FBGs excite optical-fiber plasmons,” *Laser Focus World*, pp.71-75, January 2010

6. J. Albert

“Photosensitivity in doped silica optical fibres and waveguides using ArF excimer laser light”

DOE Reports, Vol. 2, QPS Technology Inc., Dorval (Québec) (1996)

5. J. Albert and D. C. Johnson

“Pre-feasibility study report on optical switching in the post-2000 tactical environment”

A report from the Optical Communications and Electrophotonic Technologies

Directorate, COMMUNICATIONS RESEARCH CENTRE, Ottawa, July (1991)

4. J. Albert

“Optical waveguide fabrication in glass: an overview”

Optical Communications and Electrophotonic Technologies Directorate,

COMMUNICATIONS RESEARCH CENTRE, Ottawa, December (1990)

3. J. Albert

“Solar illumination normalization for visual satellite pictures”

Environment Canada, Atmospheric Environment Service. Pacific Region Technical Note 83-001 (1983)

2. J. Albert

“Channeled winds in Juan de Fuca Strait. An empirical verification”

Environment Canada, Atmospheric Environment Service. Pacific Region Technical Note 82-024 (1982)

1. J. Albert

“Record rainfall at and near Vancouver?”

Environment Canada, Atmospheric Environment Service. Pacific Region Technical Note 82-002 (1982)

Invited Seminars and Workshops

18. J. Albert, “Photonic activities at the CLLIPS laboratory,” Invited seminar, Faculté Polytechnique de Mons (Mons, Belgium, April 23rd, 2008)

17. J. Albert, “Photonic activities at the CLLIPS laboratory,” Invited seminar, Draka Comtech, (Marcoussis, France, April 18th, 2008)

16. J. Albert, “Photonic activities at the CLLIPS laboratory”, Weekly seminar series, Physics Department of the University of Ottawa, March 13th 2008

15. J. Albert, C. Chen, F. Chan, A. Jafari, “Novel sensing mechanisms using tilted fiber Bragg gratings,” Invited lecture, *NATO Advanced Study Institute on Optical waveguide Sensing and Imaging*, (Gatineau, Canada, Oct. 2006)

14. J. Albert

“Novel optical fiber multi-parameter sensors and UV-written cavity mirrors for phosphate glass fiber and waveguide lasers,”
Invited Talk, McMaster University (April 20th, 2006)

13. J. Albert

“Capteurs multiparamètres et cavités lasers sur guides : Nouveaux dispositifs et nouveaux matériaux photosensibles, ”
Invited talk, Université Laval (January 26th, 2006)

12. J. Albert

“Bragg gratings in Planar lightwave circuits”
Invited talk, Alcatel SEL, Stuttgart, Germany (July 9th, 2001)

11. J. Albert

“Bragg gratings in Planar Lightwave circuits”
Invited talk, Ottawa chapter of the IEEE Lasers and Electro-optics Society, Ottawa (Dec. 2, 1998)

10. J. Albert

“Photosensitivity in silica glass: structure studies through ion implantation”
Invited talk at the inauguration of the new Ion implantation facility, Université de Montréal (April 17, 1997)

9. J. Albert

“Current trends at CRC”
Workshop on Photosensitivity in fibers and waveguides, Université de Montréal (March 15, 1996)

8. J. Albert
“Photosensitivity by ion implantation in silica”
Invited presentation for a Visiting Examining Committee of NSERC at the University of Montréal (Jan. 1995)
7. J. Albert
“Photoécriture dans la silice: Physique et technologie”
Invited Colloquium, Département de Physique, Université de Montréal (Dec. 3, 1993)
6. J. Albert
“Ion induced compaction of SiO₂”
Focussed Ion Beam users workshop, National Research Council of Canada (May 7, 1993)
5. J. Albert
“Ion implantation in glasses”
Seminar at the Nuclear Physics Laboratory, Université de Montréal (Jan. 21, 1992)
4. J. Albert
“Integrated optics in glass and applications”
Invited Lecture given for a graduate course on Lasers and Photonics in the Department of Physics, University of Toronto (March 30, 1992)
3. J. Albert
“Glass waveguide fabrication”
Workshop on Glass integrated optics, Ecole Polytechnique (Nov. 30, 1990)
2. J. Albert
“An overview of glass waveguide fabrication technologies”
Seminar at McGill University (Dec. 4, 1990)
1. J. Albert
“Guides optiques par échange d'ions dans le verre”
Seminaire invité à l'Université de Montréal (Feb. 1989)