



Laboratoire des Semi-Conducteurs
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Tahar Touam

Personal Information

Nationality: Algerian

Age: 48

Technical Profile

Research and development in advanced materials for photonic devices and planar lightwave integration. Expertise and Experience in:

- Glass Integrated Optics
- Nanomaterials and Nano-Photonics
- Sol gel Hybrid Material and Technology
- Arrayed Waveguide Gratings (AWG)
- Rare Earth Doped Waveguides Amplifiers and Lasers
- Bragg Grating and Photonic Crystals
- Dense Wavelength Division Multiplexers (DWDM)
- Software Design and numerical Techniques
- Semiconductor device design, fabrication and test
- Hybrid optoelectronic Integration

Dr. Touam has authored and coauthored more than 70 scientific contributions including, invited, regular, conference papers, magazine articles, book papers, communications, posters and patent.

He has been honoured by Ecole Polytechnique of Montreal for his contributions in Teaching, Research and International Visibility, in 1997. He has been awarded in 2000, the best research work in North America for his contribution to New Photonics Materials for Telecommunication. His work in Diffractive Optics has been selected among the most popular and value papers about diffractive optics and its application in modern

*non-conventional optical design by the Diffractive Optics
Library of America in 2007*

Education

April 2001 Lunmenon Innovative Lightwave Technology
Montréal, Canada

Certificate of Achievement

For completing the **Teams Leadership Course**

1990 – 1994 Laval University, Quebec, Canada

Ph.D. in Physics (Photonics)

- Research into integrated optics and photonics devices.

Thesis: Contributions to the studies of integrated optics devices

1987 – 1989 Ecole Polytechnique of Montréal, Canada

M.Sc.A. in Engineering Physics

- Research into Design and Fabrication of Planar Passive and Active Devices on Semiconductors.

Thesis: Fabrication, Characterization, and Analysis of Zinc-Diffused GaAs Channel Waveguides.

Aug. 1986 – Dec. 1986 Ottawa University, Ontario, Canada
Second Language Institute

Intensive English Course Diploma

1982 – 1986 Annaba University, Annaba, Algeria

D.E.S. in Solid State Physics

Professional Experience

Nov. 2011- Present Annaba University, Algeria

Associate Professor/Teaching and Research

Creation of a new Research Activities in :

- Glass Integrated Optics
- Sol- Gel Thin Films Technology
- Optics, Photonics and Laser
- Nonmaterial and Integrated Photonics

March 2011 – Aug. 2011 University Institute of Technology
Paris 13 University, Paris, France

Teaching and Research Position

- ZnO and TiO₂ Nano-structured Thin Films Synthesized by Sol-Gel Process
- Structural and morphological Characterizations
- Optical Characterizations for photonic applications

Nov. 2010 – Dec. 2010 *Laboratoire de Physique des Lasers
Paris 13 University, Paris, France*

Invited Professor

Jul. 2009 – Oct. 2011 *Advanced Technologies
Development Center, Algiers, Algeria*

Senior Scientist/Team Manager

- *Creation of a new Team :*

Optics, Photonics and Laser.

- *Scientific Manager CDTA-Quantel for the realization of the first Micro-machining systems in Algeria based on the optical fiber lasers.*

2006 – 2008

Industrial Expert in Photonics

- *Use Photonic solutions to resolve bottleneck problem.*
- *Technology selection depends on customer applications.*
- *Focus on engineering- design for photonics integration.*

1998 – 2004 *Lumenon Innovative Lightwave Technology
Montréal, Canada*

Senior Scientist/R&D Director

Based on Sol-Gel and Polymer Technology

- *Design of Integrated Photonics devices*
- *1x8, 1x16, 1x32, 1x64 DWDM*
- *CWDM and Star Coupler*
- *Ridge waveguides and Bragg Gratings*
- *Design, fabricate and validate Engineering units. (Single components, integrated components and modules)*
- *Outsource components manufacturing*
- *Assemble and package*
- *Test (Optical and electrical)*
- *Outsource certification*

1995-1998 *Photonics Research Group
Ecole polytechnique of Montréal*

Research Scientist

- *Research into advanced photonics devices for optical communications. (Optoelectronic integration, lasers cavity, dense wavelength-division multiplexers, spectrometers and interconnects).*
- *Co-advising many students in the Ph.D., M.Sc.A, and B.Sc., programs.*
- *Teaching Assistant the following courses:*
 - o *Physics II*
 - o *Optical Properties of Materials*
 - o *CAD in Modern Optics*
 - o *Waveguides Theory and Optical Fibers*

1989-1994 Laval University, Quebec, Canada

Research Associate

- *Research into advanced integrated optics devices. (Design of Infra Red Optical waveguides and a new Y-planar junction for integrated optics application)*
- *Co-advising many students in M.Sc.A, and B.Sc. programs.*
- *Teaching Assistant the following courses:*
 - o *Physics IV*
 - o *General Astronomy*
 - o *Electromagnetism*
 - o *Optical Fibers*

Professional Memberships

Optical Society of America (OSA)

International Society for Optical Engineering (SPIE)

European Optical Society (EOS)

Société Française d'Optique (SFO)

Awards & Scholarships

- *Best Student Award, Annaba Technical College, 1979-1982, Annaba, Algeria*
- *Algeria Ministry of High Education Scholarship Excellence Annaba University, Algeria, 1986-1989 (M.Sc.A)*
- *Scholarship Excellence from Centre of Optics Photonics and Laser, Laval University, Canada, 1990-1994 (Ph.D.)*
- *Scholarship Excellence from Arab Student Aid International (ASAI), Fanwood, New Jersey, USA, 1992 (Ph.D.)*

Other Activities

Dr. Touam was the Permanent Secretary of The Micro and Nano Photonics Technologies Network Nour 21, DGRSDT, Algeria

Has been invited to act as Chair and Co-chair of many sessions in International Conferences and selected as a Reviewer for many International Scientific Journals.

Scientific contributions including, invited, regular, conference papers, magazine articles, communications, posters, and patent.

1. **T. Touam, L. Znaidi, D. Vrel, O. Brinza, I. N. Kuznetsova, I. Hadjoub, A. Fischer, and A. Boudrioua**, "Low optical loss nano-structured TiO_2 planar waveguides by sol-gel route for photonic applications," in **International conference on Advanced Materials for Photonics, Sensing and Energy Conversion Applications, AMPSECA 2012**, 5th to the 7th of December, El Jadida, Morocco (2012).
2. **T. Touam, I. Hadjoub, A. Doghmane, Z. Hadjoub**, "Low temperature hybrid sol-gel integrated photonic devices on silicon for optical telecommunications," **Invited Speaker, Première Conférence Nationale sur les Télécommunications CNT'2012**, 11 - 12 Novembre, Guelma, Algeria (2012).
3. **T. Touam, L. Znaidi, D. Vrel, O. Brinza, I. N. Kuznetsova, A. Fischer, A. Boudrioua**, " Guides d'ondes planaires de TiO_2 à faibles pertes élaborées par voie sol-gel pour des applications en photonique," **Recueil des Communications of the 32^{èmes} Journées Nationales d'Optique Guidée JNOG 2012**, pp. 189-191, 10th to the 12th of July, Lyon, France (2012).
4. **Q. Ripault, M. W. Lee, F. Meriche, T. Touam, A. Boudrioua, E. Ntsoenzok, L. H. Peng, A. Fischer**, " Guides d'ondes optiques par implantation d'hélium (HE^+) dans les cristaux photoniques non linéaire (PPLN 2D)," **Recueil des Communications of the 32^{èmes} Journées Nationales d'Optique Guidée JNOG 2012**, pp. 84-86, 10th to the 12th of July, Lyon, France (2012).
5. **G. Ayenew, M. Chakaroun, N. Fabre, J. Solard, A. Fischer, C-C. Chen, T. Touam, A. Boudrioua, C-H. Chands**, " Guides d'ondes planaires de TiO_2 à faibles pertes élaborées par voie sol-gel pour des applications en photonique," **Recueil des Communications of the 32^{èmes} Journées Nationales d'Optique Guidée JNOG 2012**, pp. 192-194, 10th to the 12th of July, Lyon, France (2012).
6. **L. Znaidi, T. Touam, D. Vrel, N. Souded, S. Ben Yahia, O. Brinza, A. Fischer, A. Boudrioua**, "ZnO Thin Films Synthesize by Sol-Gel Process for Photonic Applications," **Acta Physica Polonica A**, vol. 121, pp. 165-168 (2012).

7. **T. Touam**, "Low Loss Planar Semiconductor Optical Waveguides by Sol-Gel Process for Photonic Applications," **Invited Speaker**, Scientific Day on Physics and Chemical Materials **JSPCM 2011**, University Med Khider of Biskra, November 30, Biskra, Algeria (2011).
8. L. Znaidi, I., **T. Touam**, N. Kuznetsova D. Vrel, A. Fisher, A. Boudrioua, "Waveguiding Properties of NanoStructured TiO₂ Thin Films Synthesized by Sol Gel Process," **AIP Conf. Proc. 1400**, 268 (2011).
9. Q. Ripault, A. Boudrioua, L. H. Peng, P. Moretti , **T. Touam**, F. Meriche , E. Ntsoenzok, "Cristaux photoniques non linéaire sur niobate de lithium: application aux sources lasers multi-longueurs d'ondes," **Recueil des Communications of the 31^{èmes} Journées Nationales d'Optique Guidée JNOG 2011**, pp. 306-308, 4th to the 7th of July, Lyon, France (2011).
10. L. Znaidi, **T. Touam**, D. Vrel, N. Souded, O. Brinza, A. Fisher , A. Boudrioua, "Couches minces de ZnO élaborées par voie sol-gel pour l'optique guidée," **2^{ème} colloque ZnO, l'oxyde de zinc sous toutes ses formes**, CNRS de Meudon-Bellevue, 8-9 juin 2011, France.
11. S.Messaoud, A.Allam, F.Siserir, Y.Boucetta, T.Kerdja, D.Ouadjaout, **T. Touam**, "Direct Laser Writing System of Masks for Integrated Photonics Devices," **Proceeding of the 36th International MATADOR Conference** pp.581-584, 14th to 16th July, Manchester, UK (2010).
12. **T. Touam**, "From Optics to Photonics: Concept and History," **Invited Speaker**, Scientific day on Photonics and Laser **JSLP 2010**, April 27, University Dr. Yahia Fares of Medea, Medea, Algeria (2010).
13. **T. Touam**, "Integrated Photonics: Materials, Devices and Applications," **Invited Speaker**, Scientific Days on Physics and Photonics Materials **JSPMP 2010**, University Med Khider of Biskra , 4-6 April, Biskra, Algeria (2010).
14. **T. Touam**, "Design and Analysis of Photonics Devices by Beam Propagation Method (BPM)," **Invited Speaker**, Thematic School of the Micro & Nano Photonics Technologies Network, Nour 21, **Laser Sources and Photonics LSP 2010**, March 28-April 2, Oran, Algeria (2010).
15. N. Hendaoui, R. Boushaki, D. Louhibi, A. Kellou, **T. Touam**, "Fonctionnement de la Diode Laser en Cavité Externe," **Poster Session**, Thematic School of the Micro & Nano Photonics Technologies Network, Nour 21, **Laser Sources and Photonics LSP 2010**, March 28-April 2, Oran, Algeria (2010).
16. K.Bourai, A. Acheli, R.Beggar, A. Noukaz, S. Aissani, S. Messaoud, **T. Touam**, "Le Système de Marquage par Laser à Fibre `Alltech1'," **Poster Session**, Thematic

School of the Micro & Nano Photonics Technologies Network, Nour 21, Laser Sources and Photonics LSP 2010, March 28-April 2, Oran, Algeria (2010).

17. S.Messaoud, A.Allam, F.Siserir, Y.Boucetta, T.Kerdja, D.Ouadjaout, **T. Touam**, "Direct Laser Writing System of Masks for Integrated Photonics Devices," **Poster Session**, Thematic School of the Micro & Nano Photonics Technologies Network, Nour 21, Laser Sources and Photonics LSP 2010, March 28-April 2, Oran, Algeria (2010).
18. F.Siserir, S.Messaoud, Y.Boucetta, T.Kerdja, D.Ouadjaout, **T. Touam**, "Optique de mise en forme du faisceau laser Nd:YAG pour écriture directe," **Poster Session**, Thematic School of the Micro & Nano Photonics Technologies Network, Nour 21, Laser Sources and Photonics LSP 2010, March 28-April 2, Oran, Algeria (2010).
19. **T. Touam**, S. I. Najafi, "Hybrid sol-gel glasses waveguides with index modulated grating: Theoretical and experimental study," 5^{ème} Séminaire National sur le Laser et ses Applications **SENALAP'2009**, Ouargla, 16 -17 Décembre (2009).
20. **T. Touam**, S. I. Najafi, "Fabrication and characterization of organic-inorganic optical waveguides on silicon by sol-gel technology," 5^{ème} Séminaire National sur le Laser et ses Applications **SENALAP'2009**, Ouargla, 16 -17 Décembre (2009).
21. F. Siserir, S. Messaoud, A. Allam, Y. Boucetta, T. Kerdja, D. Ouadjaout, **T. Touam**, "Optique de mise en forme d'un faisceau laser Nd : Yag pour l'écriture directe," 5^{ème} Séminaire National sur le Laser et ses Applications **SENALAP'2009**, Ouargla, 16 -17 Décembre (2009).
22. **T. Touam**, "Photoinscribed integrated photonics devices in polyglass on silicon for lightwave communication," **Plenary paper**, 3rd International Conference on Electrical Engineering Design and Technology ICEED T09 Oct.31-Nov. 2, Sousse, Tunisia (2009)
23. **T. Touam**, "Les matériaux organiques-inorganiques et leurs applications en photonique," **Invited Speaker**, Département de métallurgie, University Badji Mokhtar, Annaba, Algeria, May (2009).
24. **T. Touam**, "Sol-Gel DWDM from design to mass production," **Invited Speaker**, Centre de Recherche des Techniques Avancées (CDTA), Algiers, Algeria, November (2008).

25. **T. Touam**, "Les dispositifs photoniques en sol-gel hydride: conception et fabrication," **Invited Speaker**, Groupe de Recherche en Optique non Linéaire et Fibres Optiques, University Badji Mokhtar, Annaba, Algeria, June (2007).
26. **T. Touam**, **A. Shooshtari**, **S. Alavian**, "Manufacture of a glass dense wavelength division multiplexer and demultiplexer from a hybrid organic/inorganic sol-gel composition, useful in an optical device or photo-mask," **Patent Number(s): CA2328642-A1, LUMENON INNOVATIVE LIGHTWAVE TECHNOLOGY-157281 [16]** (2004).
27. **Moujoud, Z. Saddiki, T. Touam, S.I. Najafi**, "Measurement of the refractive-index variations with temperature of hybrid sol-gel glasses," **Thin Solid Films**, Volume 422, Issues 1-2, 20 Pages 161-165 (2002).
28. **Shooshtari, T. Touam, S. Safavi-Naeini, S. I. Najafi**, "Beam propagation method for analysis of Er-doped integrated optics devices," **Optical Engineering** 39(03), p. 735-737 (2000).
29. **S. Alavian, T. Touam, S. I. Najafi** "Analysis of Integrated Photonics Devices by a New Simplified Propagation Method," **Journal of Optical Communications**, Vol.21, 2 (2000).
30. **S. I. Najafi, T. Touam, Alireza Shooshtari**, "Beam propagation method for analysis of Er-doped integrated optics devices," **Invited paper**, Innovative Light Emitting Materials, in **ADVANCES IN SCIENCE AND TECHNOLOGY** 27, pp.1991-1996, (1999).
31. **S. Alavian, T. Touam, S. I. Najafi**, "Analysis of integrated photonics devices by a new propagation method," **Proc. SPIE Vol. 3620**, Integrated Optics Devices III, (1999).
32. **R. Sara, Z. Saddiki, T. Touam, J. Chrostowski, M. P. Andrews, S. I. Najafi**, "AFM and SEM polyglass ridge waveguide studies," **Proc. SPIE Vol. 3620**, Integrated Optics Devices III, (1999).
33. **Shooshtari, T. Touam, S. Safavi-Naeini, H. Hatami-Hanza, and S. I. Najafi**, "Yb sensitized Er -doped waveguide amplifiers: a theoretical approach," **Optical and Quantum Electronics**, vol. 30, pp. 249-264 (1998).
34. **Shooshtari, Peyman Meshkinfam, T. Touam, M. P. Andrews, and S. I. Najafi**, "Ion-exchanged Er/Yb phosphate glass waveguide amplifiers and lasers," **Optical Engineering** 37, 1188 (1998).

35. **T. Touam**, X. Min Du, M. A. Fardad, M. P. Andrews, and S. I. Najafi, "Sol-gel glass waveguides with Bragg grating," *Optical Engineering* 37, 1136 (1998).
36. X. Min Du, **T. Touam**, L. Degachi, J. L. Guilbault, M. P. Andrews, and S. I. Najafi, "Sol-gel waveguide fabrication parameters: an experimental investigation," *Optical Engineering* 37, 1101 (1998).
37. S. I. Najafi, **T. Touam**, R. Sara, M. P. Andrews, M. A. Fardad "Sol-Gel Glass Waveguide and Grating on Silicon," *Journal of Lightwave Technology*, Vol. 16 Issue 9 Page 1640 (1998).
38. Shooshtari, P. Meshkinfam, **T. Touam**, M. A. Fardad, M. P. Andrews, and S. I. Najafi, "Potassium ion-exchanged Er/Yb doped phosphate glass amplifier," *Electronics Lett.* Vol. 34, pp. 704-705 (1998)
39. **T. Touam**, X. M. Du, M. P. Andrews, S. I. Najafi, "Polyglass waveguides with Bragg grating on silicon: theory and experiment," *Proc. SPIE Vol. 3469, Organic-Inorganic Hybrid Materials for Photonics*, (1998).
40. R. Sara, **T. Touam**, Mark P. Andrews, S. I. Najafi, "Polyglass integrated photonic devices," *Proc. SPIE Vol. 3469*, p. 51-57, *Organic-Inorganic Hybrid Materials for Photonics*, (1998).
41. R. Sara, **T. Touam**, Paul Coudray, Mark P. Andrews, S. I. Najafi, "Polyglass integrated optics devices for lightwave communication," *Proc. SPIE Vol. 3469*, p. 44-50, *Organic-Inorganic Hybrid Materials for Photonics*, (1998).
42. R. Sara, X. Min Du, **T. Touam**, Mark P. Andrews, S. I. Najafi, "Polyglass non-dense WDMs by sol-gel on silicon," *Proc. SPIE Vol. 3469, Organic-Inorganic Hybrid Materials for Photonics*, (1998).
43. **T. Touam**, R. Sara, M. P. Andrews, and S. I. Najafi, "Photoinscribed waveguides, devices, and gratings in polyglass on silicon," *Proc. SPIE Int. Soc. Opt. Eng. 3482*, 828 (1998).
44. **T. Touam**, Xin M. Du, M. A. Fardad, M. P. Andrews, and S. I. Najafi, "Theoretical and experimental study of ridge waveguides with Bragg grating derived from hybrid sol-gel glasses," *Proc. SPIE Int. Soc. Opt. Eng. 3282*, 17 (1998).
45. Shooshtari, P. Meshkinfam, **T. Touam**, Mark P. Andrews, and S. I. Najafi, "Ion-exchanged Er/Yb phosphate glass waveguide amplifiers and lasers," *Proc. SPIE Int. Soc. Opt. Eng. 3280*, 67 (1998).

46. Shooshtari, T. Touam, and S. I. Najafi, "Yb³⁺-sensitized Er³⁺-doped waveguide amplifiers: a theoretical approach," *Proc. SPIE Int. Soc. Opt. Eng.* **3278**, 149 (1998).
47. M. P. Andrews, K. Saravanamuttu, T. Touam, R. Sara, X. M. Du, S.I. Najafi, "Collateral Densification Associated with the Photoresponse of Hybrid Sol-Gel Glasses for Depositing Bragg Gratings on Ridge waveguides," *Proc. SPIE - Int. Soc. Opt. Eng.* **3282**, 50 (1998).
48. R. Sara, T. Touam, C. Blanchetiere, Z. Saddiki, K. Saravanamuttu, X. M. Du, J. Chrostowski, M. P. Andrews, S. I. Najafi, "Photolithography Fabrication of Sol-Gel Ridge Waveguide," *Proc. SPIE - Int. Soc. Opt. Eng.* **3469**, 118 (1998).
49. K. Saravanamuttu, M. P. Andrews, T. Touam, R. Sara, X. M. Du, S.I. Najafi, "Collateral Densification Associated with the Photoresponse of Hybrid Sol-Gel Glasses for Depositing Bragg Gratings on Ridge waveguides," *Photonics West, Optoelectronics '98, Photosensitive Optical Materials and Devices II*. 24-30 Jan. 1998, San Jose, CA. U.S.A.
50. T. Touam et M. Sawan, "Dispositifs Photoniques en Sol gel," *Chronique Innovation, Le Journal Industriel du Québec* (1998).
51. S. I. Najafi, M. P. Andrews, T. Touam, X. M. Du, M. A. Fardad "Sol-Gel Glass Waveguide and Grating on Silicon". *Invited paper 17^{èmes} Journées Nationales d'Optique Guidée JNOG 97* Sainte-Etienne, (1997).
52. T. Touam, S.I. Najafi, Z. Saddiki, G. Milova, M.A. Fardad, M.P. Andrews, C. Chrostowski, "Organoaluminophosphate sol-gel silica glass thin films for integrated optics," *Thin Solid Films*, Volume 307, Issues 1-2, Pages 203-207 (1997).
53. M.A. Fardad, T. Touam, P. Meshkinfam, et al., "UV-light imprinted Bragg grating in sol-gel ridge glass waveguide with almost 100% reflectivity," *Electronics Letters*. Vol. 33, No. 12, pp. 1069-1070 (1997).
54. M. Mashayekhi, T. Touam, W. J. Wang, E. Berolo, and S. I. Najafi, "Semiconductor device to optical fiber coupling using low-loss glass taper waveguide," *Optical Engineering* **36**, 3476 (1997).
55. T. Touam and S. I. Najafi, "Symmetric profile beams from waveguides with asymmetric grating couplers," *Applied Optics-LP*, Vol. 36 Issue 12 Page 2554 (1997).

56. S.I. Najafi, M. P. Andrews, T. Touam, M.A. Fardad and G. Milova, "Bragg gratings written in sol-gel waveguides achieve near 100% reflectivity", *Laser Focus World*, Aug. 1997.
57. S.I. Najafi, M. P. Andrews, T. Touam, M.A. Fardad and G. Milova, "Nanoparticles form glass layers free from cracks", *Opto & Laser Europe*, July 1997, page 25.
58. S.I. Najafi, M. P. Andrews, T. Touam, M.A. Fardad and G. Milova, "Sol-gel deposits active devices for optical circuits", *Opto and Laser Europe*, Feb. 1997, p. 12.
59. T. Touam, Galina Milova, Z. Saddiki, M. A. Fardad, Mark P. Andrews, S. K. Juma, J. Chrostowski, and S. I. Najafi "Organoaluminophosphate sol-gel silica glass thin films for integrated optics," *Proc. SPIE Int. Soc. Opt. Eng.* 2997, 79 (1997).
60. M. Mashayekhi, T. Touam, Weijian Wang, Ezio Berolo, and S. Iraj Najafi, "Diode laser array to optical fiber multiplexing via glass waveguide," *Proc. SPIE Int. Soc. Opt. Eng.* 2997, 335 (1997).
61. K. Saravanamuttu, M. P. Andrews, T. Touam, R. Sara, X. M. Du and S. I. Najafi, "The Photosensitive Response of Hybrid Sol Gel Glasses in the Deposition of Bragg Gratings : A Spectroscopic Study," 43rd International Conference on *Analytical Sciences and Spectroscopy*. 11-13 Aug. 1997, Montreal, Quebec, Canada.
62. K. Saravanamuttu, M. P. Andrews, T. Touam, R. Sara, X. M. Du and S. I. Najafi, "Spectroscopic Study of the Photosensitivity of Hybrid Sol-Gel Glasses for Bragg Grating Deposition," *30th Inorganic Discussion Weekend*, 24 - 26 Oct. 1997. Toronto, ON. Canada.
63. S.I. Najafi, M.P. Andrews, M.A. Fardad, G. Milova, T. Touam and P. Coudray, "UV-light imprinted surface, ridge and buried sol-gel glass waveguides and devices on silicon," *Invited paper, Proc. SPIE Int. Soc. Opt. Eng.* 2954, 100, Berlin (1996).
64. T. Touam and S. I. Najafi, "Accurate analysis of reflective and diffractive gratings for integrated optics," *Conference on Integrated Optics Devices: Potential for Commercialization*, San Jose, Feb. *SPIE Vol.* 2695, pp. 57-70 (1996).
65. T. Touam, F. Yergeau and R. Tremblay, "Optimisation de Jonction Y en Optique Intégrée," in "Diffractive Optics", *Physics in Canada*, paper RA7, 137, June 1995.

66. **T. Touam**, L. Roy, M. Courchene, F. Yergeau, "Optimisation de jonction Y en optique intégrée utilisant des guides d'ondes courbes," *Section Optique guidée et photonique 3, ACFAS, 62^e congrès. Annales de l'ACFAS*, volume 62, 1994.
67. **T. Touam**, "Contributions à l'étude de dispositifs d'optique intégrée," Thèse de Doctorat (Ph. D.) Université Laval (1994).
68. **T. Touam**, and F. Yergeau, "Analytical solution for a linearly graded-index-profile planar waveguide," *Applied Optics-LP*, Vol. 32 Issue 3 Page 309 (1993).
69. **C. Wu**, **T. Touam**, S. I. Najafi, "Analysis of Zn-diffused slab waveguides: exact solution and WKB approximation," *International Journal of Optoelectronics*, Vol. 6 Number 4 Pages 365-384, (1991).
70. **T. Touam**, F. Yergeau et R. Tremblay, "Solutions analytiques de guides d'ondes planaires à indice gradué," *Section Physique, ACFAS, 58^e congrès. Annales de l'ACFAS*, volume 58, (1990).
71. **S. I. Najafi**, **C. Wu**, **J. F. Currie**, **T. Touam**, "Modal study of GaAs waveguides with zinc-diffused boundaries," *Applied Optics*, Vol. 28 Issue 5 Page 987 (1989).
72. **T. Touam**, **C. Wu**, **Y. Gigase**, **M. Bélanger**, **J. F. Currie**, and **S. I. Najafi**, "Fabrication, Characterisation, and Analysis of Zn-diffused GaAs Waveguides," *Journal of Quantum Electronics*, Vol.25, pp.850-853 (1989).
73. **T. Touam**, "Fabrication, Caractérisation, et Analyse de guide d'ondes réalisés par diffusion de Zinc dans l'Arséniure de Gallium," *Mémoire de Maîtrise en Sciences Appliquées (M. Sc. A) Ecole Polytechnique de Montréal* (1988).
74. **T. Touam**, **C. Wu**, **M. Bélanger**, **J. F. Currie**, **S. I. Najafi**, "Planar GaAs zinc-diffused waveguides boundaries," *Proceedings of the SPIE - The International Society for Optical Engineering V Vol. 993 Pages: 39-43*, (1988).
75. **T. Touam**, **C. Wu**, **M. Belanger**, and **S. I. Najafi**, "GaAs Zn-. Diffused Waveguides," presented at *CAP/APS Joint Congress*, paper FF6, Montreal, June (1988).