

List of publications and conference contributions

Contents

A1. Books, journal articles and book chapters in fiber optics	1
A2. Conference articles and contributions in optical fibers and communications	1
B1. Books and journal articles in glass science and solid state physics	2
B2. Conference contributions in glass science and solid state physics	3
C. Patents	4

A1. Books, journal articles and book chapters in fiber optics

1. Tarja Volotinen, Kariofilis Konstadinidis, Victor Cusanello, Ed Tretheway, Ralph Lago and David Mazzaresse, "*Mechanical reliability of short optical fiber links in data centers*", The Proc. of The 63rd IWCS conference, 47-54 (2014). (reviewed)
2. The course notes for the Short course FO209: Reliability of optical fibers and passive fiber components in long and short communications networks, The 63rd IWCS conference (2014). (reviewed)
3. D. Lingfors and T. Volotinen, "*Illumination performance and energy saving of a solar fiber optic lighting system*", Optics Express, Vol. 21 No. S4 Doi:10.1364/OE.21.00A642, A642-A655 (2013). (reviewed)
4. Tarja T. Volotinen and David H. S. Lingfors, "*Benefits of glass fibers in solar fiber optic lighting systems*", Applied Optics, Vol. 52, No. 27, 6685-6695, Doc. ID 188916 (2013). (reviewed)
5. T. Volotinen and L. Stensland, "*Method for single mode fibre bending studies in short fibres and cables*", Proc. 37th of The International Wire and Cable Symposium (IWCS), 710 – 721 (1988). (reviewed)
6. **PhD thesis in physics**, Helsinki University, Faculty of Science, Dept. of Physics, "*Influence of the standard single mode fibre bends on cable properties investigated by the $\alpha I_{1b}(\lambda)$ method*", reviewed by two independent scientific examiners and published as Acta Polytechnica Scandinavica, Appl. Phys. Ser. No. 171, 1-185 (1990). (reviewed)
7. **Book:** Tarja Volotinen, Willem Griffioen, Michel Gadonna and Hans Limberger, "*Reliability of Optical Fibres and Components, Final report of COST 246*", Springer-Verlag, London. 1 - 410 (1999), (reviewed) and the chapters:
 8. Chap. 1 *Introduction and general information about COST and the COST246 Action*, 1-13. (reviewed)
 9. Chap. 2 *Reliability of optical fibres and components*, 15-29. (reviewed)
 10. Chap. 3 *Optical Fibres (WG1.1)*, 37 – 67. (co-authored) (reviewed)

A2. Conference articles and contributions in optical fibers and communications

11. D. Lingfors, R. Hallqvist and T. Volotinen, "*Lighting performance and energy saving of a novel solar fibre optic lighting system*", orally presented and published at Proc. of CISBAT13, Lausanne, Switzerland Sept., 318 -322 (2013).
12. T T Volotinen, N Nilsson, D Johansson, J Widen and Ph Kräuchi, "*Solar Fibre Optic Lights - Daylight to Office Desks and Corridors*", Proceedings CISBAT 2011, Lausanne, Switzerland, 491-496 (2011).
13. Tarja T. Volotinen, Anu E. Konkarikoski, C. Bertil Arvidsson, and Thomas K Ericsson, "*Impact of silica glass structure on transmission properties of Ge-doped single-mode fibers*", SPIE (The International Society of Optical Engineering) Vol. 4940, 1 - 13 (2003). (reviewed)
14. T. T. Volotinen, "*Reliability of optical fibres and components: achievements and conclusions of COST 246*", SPIE Vol. 3848, 88 – 94, (1999). (Invited, reviewed)
15. T. T. Volotinen, "*Water tests of optical fibres*", SPIE Vol. 3848, 134 – 143 (1999). (reviewed)

16. T. Volotinen, M. Zimmol, M. Tomozawa, Y. - K. Lee, K. Raine, 1998, “*Effect of mechanical stripping and arc-fusion on the strength and ageing of a spliced recoated optical fibre*”, MRS (Materials, research Society Symposium Proceedings) Vol. 531, 163 – 168 (1998). (reviewed)
17. T. Volotinen, A. Breuls, N. Evanno, K. Kemeter, C. Kurkjian, P. Regio, S. Semjonov, T. Svensson and S. Glaesemann, *Mechanical behavior and B-value of an abraded optical fibre*, Proc. of 47th IWCS, 881 – 890 (1998). (reviewed)
18. J. Overgaard, P. Haslov, H. Knuuttila, A. Mazzotti, P. Regio, T. Svensson, T. Volotinen and S. Dodd, *Effect of water quality and quantity on strength degradation of fused silica fibre in water tests*, Proc. of the 45th IWCS, 928 – 938 (1996).
19. W. Griffioen, T. Volotinen, P. Wilson, A. Gouronnec and T. Svensson, *Handleability of Aged Optical Fibres*, Proc. of the 44th IWCS, 857 – 864 (1995).
20. T. T. Volotinen and O. S. Gebizlioglu, *Mechanical behavior of coated fused silica optical fibres aged at elevated temperature in air and filling compound*, SPIE Vol. 2611, 72 – 87 (1995). (reviewed)
21. H. H. Yuce, R. A. Frantz, O. S. Gebizlioglu, I. M. Plitz, T. T. Volotinen, *The mechanical performance of aged dual-coated fibers with varying extents of coating cure*, Proc. of the 42nd IWCS, 875-863 (1993).
22. T. T. Volotinen, H. H. Yuce and R. A. Frantz, *Effects of glass preparation on the surface corrosion of fused silica optical fibres*, SPIE Vol. 2074, 83 – 94 (1993). (reviewed)
23. T. T. Volotinen, H. H. Yuce and R. A. Frantz, *Ageing Behaviour of Fibres*, SPIE Vol. 1973, 161 – 174 (1993). (reviewed)
24. T. Volotinen, H. Yuce, N. Bonanno, R. Frantz and S. Duffy, *Splicing of Aged Fibres*, SPIE Vol. 1973, 186 – 192 (1993). (reviewed)
25. T.T. Volotinen, *Achieving long lifetimes and extremely low failure rates for silica optical fibres in communications networks*, Invited presentation at SPIE5465 conference, Strasbourg, France, (2004).
26. T. T. Volotinen, *An integrable and cost effective FTTH-network structure*, Proc. of OFC2000 (The Optical Fiber Communication Conference), paper FA3- 1 – 3, (2000).
27. T. Volotinen, *Branched single-mode fibre access network*, Proc. of NOC2000 (European conference on Networks & Optical Communications); paper 41, (2000).
28. T. T. Volotinen, *Service environment of optical fibres in telecommunications networks, Summary of the replies to COST 246 WG1 questionnaires I and II (93 -95)*, Proc. of the 1st COST 246 Workshop, (1995).
29. N. J. Bonanno, H.C. Hartman, R. W. Contreras, H. H. Yuce, T .T. Volotinen and J.P. Varachi Jr., *Handling Behaviour of Aged and Unaged Fibres during Splicing Operation*, Proc. of 9th NFOEC (National Fibre Optic Engineering Conference), June 93, San Antonio, Texas, (1993).
30. T. Volotinen, L.Stensland and A.Björk, *A new method of testing optical fibres and cables*, Ericsson Review, 69, 4, 100 – 114 (1992).
31. T.Volotinen, L. Stensland and A. Björk, *Testing of some single mode fibre cables and ribbons by the $\alpha I_{1b}(\lambda)$ method*, Proc. of The 40th IWCS, 535 - 539 (1991).
32. T. Volotinen, L. Stensland and A. Björk, *The $\alpha I_{1b}(\lambda)$ method, a way to investigate the bending and bend sensitivity of single mode fibres*, Proc. of the OFMC (The Optical Fibre Measurement Conference), 20 – 23 (1991).

B1. Books and journal articles in glass science and solid state physics

33. Tarja T. Volotinen, Mei Fang, Lyubov Belova, K. Venkat Rao, David M. Whittaker, Kiri Addison, David S. Score, Marzook Alshammari, Gillian A. Gehring, *Enhanced Magneto-optic Behavior at a Photonic Band Gap of Three-Dimensional Fe₃O₄/SiO₂ Magnetic Photonic Crystals*, Progress in Nanotechnology and Nanomaterials, 3, 2, 26-31(2014). (reviewed)
34. M. Fang, T. T. Volotinen, S. K. Kulkarni, L. Belova and K.V. Rao, *Designing photonic band gaps in SiO₂-based face-centered cubic-structured crystals*, Jour. of Nanophotonics, 5, 053514-1-8 (2011). (reviewed)

35. Y Wu, T Tamaki, T Volotinen, L Belova, K V Rao, *Enhanced photoresponse of inkjet printed ZnO thin films capped with CdS nanoparticles*, J. Phys. Chem. Lett. 1, 89 – 92 (2010). (reviewed)
36. M Fang, T T Volotinen, L Belova and K V Rao, *Effect of embedding Fe₃O₄ nanoparticles in silica spheres on the optical transmission properties of three-dimensional magnetic photonic crystals*, Jour. of Applied Physics, 108, 103501-6 (2010). (reviewed)
37. T T Volotinen, J M Parker, P A Bingham, *Concentrations and site partitioning of Fe²⁺ and Fe³⁺ ions in a soda-lime-silica glass obtained by optical absorbance spectroscopy*, Phys. Chem. Glasses: Eur. J. Glass Sci. Technol. B, 49, 5, 258–270 (2008). (reviewed)
38. **PhD thesis 2 in engineering materials** The University of Sheffield, Faculty of Engineering, Dept. of Engineering Materials, *Mathematical description of absorbance spectra for Fe and Cu doped soda-lime-silica glasses*, 1 – 218 (2007). (reviewed)

B2. Conference contributions in glass science and solid state physics

39. Y Wu, T Tamaki, T Volotinen, A Riazanova, L Belova, and K V Rao, *Enhanced photoresponse of inkjet printed ZnO thin films induced by chemically capped CdS nanoparticles by dip coating*, Proc. of SPIE Vol. 7402: Nanoengineering, Fabrication, Properties, Optics, and Devices VI, (2009). (reviewed)
40. T T Volotinen, J M Parker, *Analysis of absorption peak widths of Cu²⁺-ions in silicate glasses*, a conference paper published in Proc. of XX Int. Congress on Glass, Kyoto, Japan, 2004.

B3. Conference presentations in glass science and solid state physics

- M Fang, T T Volotinen, S Kulkarni, L Belova and K V Rao, *Linear sphere size effect on the optical properties of 3-D magnetic photonic crystals*, oral presentation at the 11th Joint MMM (Magnetism and Magnetic Materials)- Intermag. conference Jan. 2010, Washington DC, USA.
- A Masood, A Biswas, S Nagar, T Tamaki, T Volotinen, L Belova, and K V Rao, *Magnetic, optical and transport properties of transparent amorphous Fe₇₇B₁₇Nb₆ thin films*, oral presentation at the 11th Joint MMM (Magnetism and Magnetic Materials)- Intermag. conference Jan. 2010, Washington DC, USA.
- S K Nivas, L D`Souza, T T Volotinen, L Belova and K V Rao, *Kinetic, Au-Nano-Particle and Photoluminescence Study on the Reducing Ability of Medicinal Plant Extracts*, poster presented at MRS Fall Meeting 2009.
- Tarja T Volotinen, Mei Fang, Lyubov Belova and K V. Rao, *Functional band gaps of Fe₃O₄/SiO₂ magnetic photonic crystals*, a poster presented at Optics Day 2009 and Imagic Day 2009 conferences at ACREO-KTH in Nov. in Stockholm.
- Ansar Masood, Anis Biswas, Sandeep Nagar, T. Tamaki, T. Volotinen, L. Belova and K. V. Rao, *Designing transparent magnetic glassy metallic films for non-invasive sensing*, a poster presented at Optics Day 2009 and Imagic Day 2009 conferences in Nov at ACREO-KTH in Stockholm.
- Volotinen T T, Fang M, Belova L and Rao K V, *Transmission properties of magnetic photonic crystals designed from coated magnetite nanoparticles*, oral presentation given at EUROMAT (European Congress and Exhibition on Advanced Materials and Processes), 7th Sept. 2009, Session A12- Paper 2, in Glasgow.
- Mei Fang, Tarja T Volotinen, Lyuba Belova and K V. Rao, *Magnetic photonic crystals of nano-structured spheres*, a poster presented in the Sweden-Japan Nanophotonics Workshop, 29-30 June 2009, at ACREO-KTH, Kista, Stockholm, Sweden.
- T T Volotinen and J M Parker, *Fitted colour and redox of Cu and Fe doped soda-lime-silica glasses*, an oral presentation at The Annual Conference of SGT, 2007, Derby, UK.
- T T Volotinen and J M Parker, *Mathematical description of absorbance spectra and redox in Fe and Ce doped silicate glasses*, a poster presentation at ICG 2007, Strasbourg, France.
- T T Volotinen, J M Parker, P A Bingham, A P Wilkinson and N Kirk, *Computer modelling of optical absorption spectra of doped glasses*, ESG 2006/Glass: The Art of Science, Sunderland, UK.
- T T Volotinen, J M Parker, A P Wilkinson and D Hollis, *Accurate background loss correction for optical absorption spectroscopy of coloured silicate glasses*, a presentation at SGT annual meeting in Sept. 2005, Sheffield, Glass: Past, Present and Future.

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List of publications

24 March 2016
page 4(4)

- T T Volotinen and J M Parker, *Absorption spectrum addition of transition metal pairs in silicate glasses*, presented at The New Researchers Forum at The Soc. of Glass Tech. conference in Liverpool, 2004.
- T T Volotinen and J M Parker, *A systematic approach to development of glass optical filters*, a poster, presented at the New Glass Researchers Forum at the Soc. of Glass Tech. conference in Birmingham, 2003.

C. Patents

41. One Finnish patent on fibre optic splice protection
42. Two Swedish patents (9901541-4, 9901540-6) in optical fibre couplers.