Publication List – Prof. Fabien Sorin

Google scholar account:
https://scholar.google.ch/citations?hl=en&user=C-dBDZQAAAAJ&view_op=list_works&sortby=pubdate

a. Peer-reviewed scientific journal articles (not including reviews or proceedings)

Under review

1. T. Das Gupta, J. Butet, L. Martin-monier, K. Yang, O. Martin, F. Sorin "Enhanced second harmonic generation using tailored surface lattice resonances in amorphous glassy metasurfaces", under review in Advanced Optical Materials.
2. W. Yan, I. Richard, G. Kurtuldu, N. James, T. Nguyen-Dang, T. Das Gupta, Y. Qu, J. D. Cao, G. Schiavone, R. Ignatans, S. P. Lacour, V. Tileli, G. Courtine, J. F. Löffler, F. Sorin, "Nano-structured metallic glasses with extreme aspect ratios", under review in Nature nanotechnology.
3. A. Leber, C. Dong, R. Chandran, T. Das Gupta, N. Bartolomei, F. Sorin, "Soft and stretchable liquid metal transmission lines as distributed probes of multimodal deformations", under review in Nature Electronics.
4. C. Dong, A. Leber, T. Das Gupta, R. Chandran, M. Volpi, Y. Qu, T. Nguyen-Dang, W. Yan, F. Sorin, "High-efficiency Super-elastic Liquid Metal based Triboelectric Fibers and Textiles", under review in Nature Communications.

Published

5. S. Shadman, T. Nguyen-Dang, T. Das Gupta, A. G. Page, I. Richard, A. Leber, J. Ruza, G. Krishnamani and F. Sorin, "Microstructured Biodegradable Fibers for Advanced Control Delivery", Advanced Functional Materials, in Press (2020)
6. A. Leber, A. G. Page, D. Yan, Y. Qu, S. Yazdi, P. Reis, F. Sorin, "Compressible and electrically conducting fibers for large-area sensing of pressures, Advanced Functional Materials, 1904274 (2019).
7. C. Dong, A. G. Page, W. Yan, T. Nguyen-Dang, F. Sorin, "Microstructured multimaterial fibers for microfluidic sensing", Advanced Materials Technologies, 4, 1900417 (2019).
8. J. Luo, G. Panzarasa, A. Osypova, F. Sorin, F. Spano, R. Rossi, A. Sadeghpour, L. Boesel, "Polyphenols as morphogenetic agents for the controlled synthesis of mesoporous silica nanoparticles", second review in Chemistry of Materials 31, 3192-3200 (2019)
9. T. Nguyen Dang, I. Richard, E. Goy, F. Sordo and F. Sorin, "Insights into the fabrication of sub-100 nm textured thermally drawn fibers", second review in Journal of Applied Physics 125, 175301 (2019).
10. A.G. Page, M. Berthet, F. Gallaire and F. Sorin, "Unraveling radial dependency effects in thermal drawing", Applied Physics Letters 115, 044102 (2019).
11. T. Das Gupta, L. Martin-Monier, W. Yan, A. Le Bris, T. Nguyen-Dang, A. G. Page, K. T. Ho, F. Yesilkoy, H. Altug, Y. Qu, and F. Sorin, "Self-assembly of nanostructured glass metasurfaces via templated fluid instabilities", Nature Nanotechnology 14, 320 (2019).
12. F. Sordo, E. R. Janecek, Y. Qu, V. Michaud, F. Stellacci, J. Engmann, T. J. Wooster and F. Sorin, "Micro-structured fibers for the production of food", Advanced Materials 31, 1807282 (2019).
13. N. Bartolomei, Y. Qu, T. Nguyen Dang, W. Yan, A. G. Page, T. Das Gupta, A. Leber, F. Sorin "Super-elastic multi-material optical fibers for health-care applications" Proc. SPIE 10872 (2019).
14. M. Rein, V. D. Favrod, C. Hou, T. Khudiyev, A. Stolyarov, C. Chung, C. Chhav, M. Ellis, J. Joannopoulos, Y. Fink, "Diode fibers for fabric-based optical telecommunication" Nature, 560, 214-218 (2018).
    (Not counted in my publications. V.D. Favrod from my group did her Master thesis in co-supervision with Prof. Fink).
15. W. Yan, A. Burgos-Caminal, T. Das Gupta, J. E. Moser, and F. Sorin, "Direct Synthesis of Selenium Nanowire Mesh on a Solid Substrate and Insights into Ultrafast Photocarrier Dynamics", Journal of Physical Chemistry C, 122, 25134-25141 (2018).
16. Y. Qu, Dang T. Nguyên, A. G. Page, W. Yan, T. Das Gupta, G. M. Rotaru, R. M. Rossi, V. D. Favrod, N. Bartolomei, and F. Sorin, "Super-elastic Multi-material Electronic and Photonic Fiber Devices via Thermal Drawing", Advanced Materials, 30, 1707251 (2018).
17. W. Yan, Y. Qu, T. Das Gupta, A. Darga, D. T. Nguyên, A. G. Page, M. Rossi, M. Ceriotti and F. Sorin, "Semiconducting Nanowire-based Optoelectronic Fibers", Advanced Materials, 17, 1700681 (2017).

18. F. Sorin, W. Yan, M. Volpi, A. G. Page, T. Nguyen Dang, Y. Qu, "Multi-material Optoelectronic Fiber Devices", Proc. SPIE 10194, doi 10.1117/12.2263515 (2017).
19. F. Sorin, J. Ballato, L. Wei, X. Jia, D. Milanese, "Multi-material and Multifunctional Optical Fibers", Optical Materials Express, 7, 1906 (2017).
20. W. Yan, C. Cayron, T. Das Gupta, A. G. Page, Y. Qu, and F. Sorin, "Microstructure tailoring of selenium-core multi-material optoelectronic fibers", Optical Materials Express, 7, 1388 –1397 (2017).
21. T. Nguyen-Dang, A. G. Page, Y. Qu, Y. Wei; M. Volpi, F. Sorin, "Multi-Material Micro-Electromechanical Fibers with Bendable Functional Domains" Journal of Physics D: Applied Physics, 50, 144001 (2017).
22. T. Nguyen-Dang, A. C. de Luca, W. Yan, Y. Qu, A. G. Page, M. Volpi, T. Das Gupta, S. P. Lacour, and F. Sorin, "Controlled sub-micrometer hierarchical textures engineered in polymeric fibers and microchannels via thermal drawing", Advanced Functional Materials, 27, 1605935 (2017).
23. A. Le Bris, F. Maloum, J. Teisseire and F. Sorin, "Self-organized ordered silver nanoparticle arrays obtained by solid-state dewetting", Applied Physics Letters, 105, 203102 (2014).
24. B. Brudieu, A. Le Bris, J. Teisseire, F. Guillemot, G. Dantelle S. Misra, P. Roca i Cabarrocas , T. Gacoin, and F. Sorin, "Sol-gel route toward efficient and robust distributed Bragg reflectors for light management applications", Advanced Optical Materials, 2, 1105-1112 (2014).
25. A. Le Bris, B. Brudieu, T. Gacoin, J. Teisseire and F. Sorin, Proc. of SPIE 8620, Physics, Simulation, and Photonic Engineering of Photovoltaic Devices II, 86200H (2013).
26. H. Yoo, R.A. Wibowo, A. Hölzing, R. Lechner, J. Palm, S. Jost, M. Gowtham, F. Sorin, B. Louis, R. Hock, Thin Solid Films, **535**, p. 73 (2013).
27. R. Lechner, S. Jost, J. Palm, M. Gowtham, F. Sorin, B. Louis, H. Yoo, R. A. Wibowo, R. Hock, "CZTS solar cells processed by rapid thermal processing of stacked elemental layer precursors", Thin Solid Films **535**, p.5 (2013). (European record for CZTSSe cells at the time).
28. A. Gumennik, A. M. Stolyarov, B. Schell, C. Hou, G. Lestoquoy, F. Sorin, W. McDaniel, A. Rose, J. D. Joannopoulos, and Y. Fink, Advanced Materials, **24**, p. 6005 (2012).
29. A. M. Stolyarov, L. Wei, O. Shapira, F. Sorin, G. Lestoquoy, J. D. Joannopoulos and Y. Fink, Applied Physics Letters, **101**, 011108 (2012).
30. A. M. Stolyarov, A. Gumennik, W. McDaniel, O. Shapira, B. Schell, F. Sorin, K. Kuriki, G. Benoit, A. Rose, J.D. Joannopoulos, Y. Fink, Optics Express **20** (11) p. 12407 (2012).
31. A. M. Stolyarov, L. Wei, O. Shapira, F. Sorin, S. L. Chua, J. D. Joannopoulos and Y. Fink, , Nature Photonics **6**, p. 229 (2012).
32. N. D. Orf, O. Shapira, F. Sorin, S. Danto, M. A. Baldo, J. D. Joannopoulos, and Y. Fink, , PNAS, **108** (12) p. 4743 (2011).
33. F. Sorin and Y. Fink, Proc. of SPIE Vol. 7653 765305-9 (2010).
34. F. Sorin, G. Lestoquoy, S. Danto, J. D. Joannopoulos and Y. Fink, Optics Express, **18** (23), p.24264 (2010).
35. S. Egusa, Z. Wang, N. Chocat, Z.M. Ruff, A. M. Stolyarov, D. Shemuly, F. Sorin, P. T. Rakich, J. D. Joannopoulos and Y. Fink, Nature Materials **9**, p. 643(2010).
36. S. Danto, F. Sorin, N. D. Orf, Z. Wang, S. A. Speakman, J. D. Joannopoulos and Y. Fink, Advanced Materials, 22, p. 4162 (2010).
37. F. Sorin, O. Shapira, A.F. Abouraddy, M. Spencer, N. Orf, J.D. Joannopoulos, Y. Fink, Nano Letters, 9 (7), p. 2630 (2009).
38. F. Sorin, A. F. Abouraddy, N. Orf, O. Shapira, J. Viens, J.D. Joannopoulos, Y. Fink. Advanced Materials, *19, p. 3872* (2007).
39. A. F. Abouraddy, O. Shapira, M. Bayindir, J. Arnold, F. Sorin, D.S. Hinczewski, J.D. Joannopoulos and Y. Fink, Nature Materials, 5 (7): 532-536 (2006).
40. M. Bayindir, A. F. Abouraddy, F. Sorin, JD. Joannopoulos, and Y. Fink, Opt. and Phot. News 15, 24 (2004).
41. M. Bayindir, F. Sorin, A. Abouraddy, J. Viens, SD. Hart, J. Joannopoulos, Y. Fink, Nature, 431, 826 (2004).

b. Review articles

1. W. Yan, C. Dong, Y. Xiang, S. Jiang, A. Leber, G. Loke, W. Xu, C. Hou, S. Zhou, M. Chen, R. Hu, P. S. Ping, L. Wei, X. Jia, F. Sorin, X. Tao, G. Tao, "Thermally drawn advanced functional fibers: new frontier of flexible electronic devices", Materials Today, https://doi.org/10.1016/j.mattod.2019.11.006 (2020)
2. W. Yan, A. Page, T. Nguyen, Y. Qu, F. Sordo, L. Wei and F. Sorin, "Advanced Multi-material Electronic and Optoelectronic Fibers and Textiles", Advanced Materials, 31, 1802348 (2018).

3. M. Schmidt, A. Argyros and F. Sorin, "Hybrid Optical Fibers: An Innovative Platform for In-Fiber Photonic Devices", Advanced Optical Materials, **4**, 13 (2016).
4. F. Sorin, O. Shapira, A.F. Abouraddy and Y. Fink, "Photodetecting fibers enable large area flexible image systems", SPIE Newsroom. DOI: 10.1117/2.1200911.1760 (2009).
5. A. F. Abouraddy, M. Bayindir,, G. Benoit, S.D. Hart, K. Kuriki, N. Orf, O. Shapira, F. Sorin, B. Temelkuran, and Y. Fink. **"**Towards Multimaterial Multifunctional fibers that see, hear, sense and communicate**",** Nature Materials, 6 p. 336 (2007).
6. *M. Bayindir*, *A. F. Abouraddy*, O. Shapira, J. Viens, D.S. Hinczewski, F. Sorin, J. Arnold, J.D. Joannopoulos, and Y. Fink, "Kilometer-long ordered nanophotonic devices by preform-to-fiber fabrication", IEEE Journal of Selected Topics in Quantum Electronics, 12 (6): 1202-1213 (2006).

c. Books, book chapters

1. F. Sorin, PhD dissertation: "Multimaterial, multifunctional fiber devices", Massachusetts Institute of Technology, URI: http://hdl.handle.net/1721.1/44281 (2008).

d. Proceedings with peer-review (minimum 2 pages articles)

1. T. Das Gupta, L. Martin-Monier, A. Le Bris, W. Yan, T. Nguyen-Dang, A. Page, F. Sorin, "Programmable self-assembled metasurface for strong field enhancement" Accepted for CLEO 2019 (published in June).
2. T. Das Gupta, L. Martin-Monier, W. Yan, A. Le Bris, T. Dang Nguyen, A. Page, Y. Qu, and F. Sorin, "Template assisted dewetting of optical glasses for large area, flexible and stretchable all dielectric metasurfaces", Conference on Lasers and Electro-Optics (CLEO 2018), OSA Technical Digest (online) (OSA 2018), paper STh1I.5 (2018).
3. W. Yan, T. Das Gupta, I. Richard, and F. Sorin, "Integration of High-performance Optoelectronic Nanowire-based Devices at Optical Fiber Tips" Conference on Lasers and Electro-Optics (CLEO 2018), OSA Technical Digest (online) (OSA 2018), paper SF2K.4 (2018).
4. Fabien Sorin, "Multi-material and Multi-functional Optical Fibers", Optical Fiber Communication (OFC 2018), OSA Technical Digest (online) (OSA 2018), paper Tu2J.6 (2018).
5. W. Yan, T. Das Gupta, T. Nguyên-Dang, Y. Qu, A. Page, F. Sorin, "Tailoring Semiconductors Microstructure in Optoelectronic Fiber Devices", Proceedings WOSF 2017, Cyprus (2017).
6. F. Sorin, Y. Qu, T. Das Gupta, T. Nguyên-Dang , W. Yan, A. Page, M. Volpi, "Fibres Optiques Hybrides Multi-matériaux", Proceedings Société Française d'Optique (SFO), Bordeaux (2016).
7. W. Yan, Y. Qu, T. Nguyen-Dang, M. Volpi, A. G. Page and F. Sorin, "Multi-material Optical Fibers with Integrated Optoelectronic Devices", Proceedings of the ACP 2016, paper AF3A.3 (2016).
8. F. Sorin, A. Le Bris, B. Brudieu, F. Maloum, F. Guillemot, J. Teisseire and T. Gacoin, "Innovative Materials and processing approaches for nanostructured photonic systems", Proceedings of the ACP2015, paper ASu1A.1, (2015).
9. J. Teisseire, B. Brudieu, A. L. Bris, I. Gozhyk, F. Guillemot, G. Dantelle, F. Sorin, and T. Gacoin, "1D and 2D photonic structures made by simple liquid-based process", Proceedings of the 2015 European Conference on Lasers and Electro-Optics - European Quantum Electronics Conference, paper CK_14_6, Optical Society of America (2015).
10. F. Sorin, "Recent development and perspectives of multimaterial optoelectronic fibres" OSA technical Digest, Proceedings ACP 2013, paper ATh3C.4 (2013).
11. A. Le Bris, B. Brudieu, T. Gacoin, J. Teisseire and F. Sorin, "Enhancing absorption in a thin film photovoltaic system with periodic nanostructures obtained by low-cost techniques"Proc. SPIE 8620, Physics, Simulation, and Photonic Engineering of Photovoltaic Devices II, 86200H (2013).
12. A. M. Stolyarov, L. Wei, F. Sorin, G. Lestoquoy, J. D. Joannopoulos and Y. Fink "All-in-Fiber Liquid Crystal Cell", Conference on Lasers and Electro-Optics (CLEO), OSA Technical Digest (online) (Optical Society of America, 2012), paper CTh4D.7 (2012).
13. F. Sorin, G. Lestoquoy, S. Danto, J. D. Joannopoulos and Y. Fink, "Distributed light sensing with convex potential fibers", Conference on Lasers and Electro-Optics (CLEO) OSA Technical Digest (CD) (Optical Society of America, 2010), paper CTuP5 (2010).
14. Z. Wang, A. F. Abouraddy, F. Sorin, S. Danto, O. Shapira, J. D. Joannopoulos and Y. Fink, "Multimaterial Fibers and Integrated Fiber Photonic Devices", Frontiers in Optics, OSA Technical Digest (CD) (Optical Society of America, 2008), paper FWR4 (2008).

15. F. Sorin, A. F. Abouraddy, N. D. Orf, O. Shapira, J. Viens, J. D. Joannopoulos, Y. Fink "Geometry and Structure of Multimaterial Photodetecting Fibers: A Comparative Study", Conference on Lasers and Electro-Optics (CLEO 2007), OSA Technical Digest (online) (OSA 2007), paper CTh04 (2007).

e. Patents

1. "Fabrication Method for Functional Micro/Nano Structures over Large-area, Flexible and High Curvature Surfaces, by Drawing a Fiber from a Preform" Patent application number: WO 2017/085323 A1 (2016).
2. "Multi-material stretchable optical, electronic and optoelectronic fibers and ribbons composites via thermal drawing", Patent Number WO 2017/137945 A12017 (2017).
3. "Edible fibers" Patent application number: EP18156715.7 (2018).
4. "Ultralong, complexly structured micro- and nanoscale metallic glasses and fibers", Patent application number: PCT/IB2018/057401 (2018).
5. "Fabrication of glass-based nanostructures on large area rigid and soft planar substrates, fibers and textiles", Patent application number: US 62/802,725 (2019).
6. "Optoelectronic Fiber Photodetector." Patent number: US 7,292,758 B2 (2007)
7. "Optoelectronic Fiber Co-drawn from Conducting, Semiconducting, and Insulating Materials." Patent number: US 7,295,734 B2 (2007)
8. "Thermal Sensing Fiber Device." Patent number: US 7,567,740 B2 (2009)
9. "Fiber Draw Synthesis." Patent number WO2012112198 A2 (2012)
10. "Photodetecting Fiber." Patent number US 2012/0263409 A1 (2012)
11. "Microfluidic radial fiber laser." Patent number WO2013090156 A1 (2013)
12. "Fiber Sensor." Patent number US20140212084 A1 (2014)