

Giuseppe Vicidomini - Bibliography

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BIBLIOMETRIC DATA

H-Index of 33 (Scopus, October 2024). Total citation count exceeding 4140 (Scopus, October 2024) with a total number of 81 publications in peer reviewed international journals (10 as first author, 3 as shared first author, 2 as shared last author, and 27 as last author). Further, 6 reviews, 3 submitted papers, 25 proceedings in international conferences, 12 chapters in books, 1 editorial, 5 patents (4 granted, and 3 licensed) and 1 know-how licence agreement.

JOURNAL PAPERS (81)

* shared first author, § corresponding author, † shared last author

[81] L. E. Fahim, J. M. Marcus, N. D. Powell, Z. A. Ralston, K. Walgamotte, E. Perego, **G. Vicidomini**, A. Rossetta, and J. E. Lee, “Fluorescence lifetime sorting reveals tunable enzyme interactions within cytoplasmic condensates,” *J Cell Biol* **224**(1), e20231105 (2025).

[80] D. Mariani, A. Setti, F. Castagnetti, E. Vitiello, L. Stufiera Mecarelli, G. Di Timoteo, A. Giuliani, E. Perego, S. Zappone, and **G. Vicidomini**, N. Liessi, A. Armirotti, and I. Bozzoni, “ALS-associated FUS mutation reshapes the RNA and protein composition and dynamic of Stress Granules,” *Nucleic Acids Res*, *in press* (2024). Preprint on [bioRxiv](#).

[79] A. Bucci, G. Tortarolo, M. O. Held, L. Bega, E. Perego, F. Castagnetti, I. Bozzoni, E. Slenders, and **G. Vicidomini**§, “4D Single-Particle Tracking with Asynchronous Read-Out Single-Photon Avalanche Diode Array Detector,” *Nat Comm* **15**, 6188 (2024). Preprint on [bioRxiv](#).

[78] G. Di Timoteo, A. Giuliani, A. Setti, M. .C. Biagi, M. Lisi, T. Santini, A. Grandioso, D. Mariani, F. Castagnetti, E. Perego, S. Zappone, S. Lattante, M. Sabatelli, D. Rotili, **G. Vicidomini**, and I. Bozzoni, “M6A reduction relieves FUS-associated ALS granules,” *Nat Comm* **15**, 5033 (2024). Preprint on [bioRxiv](#).

[77] D. Ancora, A. Zunino, **G. Vicidomini**, and A. H. Crevenna, “Image Scanning Microscopy Reconstruction by Autocorrelation Inversion,” *JPhys Photonics* **4**(6), 045003 (2024). Preprint on [arXiv](#).

[76] G. Tortarolo, A. Zunino, S. Piazza, M. Donato, S. Zappone, A. Pierzynska-Mach, M. Castello, and **G. Vicidomini**§, “A Compact and Effective Photon-Resolved Image Scanning Microscope,” *Adv Photonics* **6**(1), 016003 (2024). Preprint on [bioRxiv](#).

[75] E. Perego, S. Zappone, F. Castagnetti, D. Mariani, E. Vitiello, J. Rupert, E. Zacco, G. G. Tartaglia, I. Bozzoni, E. Slenders, and **G. Vicidomini**§, “Single-photon microscopy to study biomolecular condensates,” *Nat Comm* **14**, 8224 (2023). Preprint on [bioRxiv](#).

[74] C. J. R. Sheppard, M. Castello, G. Tortarolo, A. Zunino, E. Slenders, P. Bianchini, **G. Vicidomini**, and A. Diaspro, “Background Rejection in Two-Photon Fluorescence Image Scanning Microscopy,” *Photonics* **10**(5), 601 (2023).

[74] C. J. R. Sheppard, M. Castello, G. Tortarolo, A. Zunino, E. Slenders, P. Bianchini, **G. Vicidomini**, and A. Diaspro, “Image scanning microscopy with a doughnut beam: signal strength and integrated intensity,” *J Opt Soc Am A* **40**(8), 1612-1619 (2023).

[73] A. Zunino, M. Castello, **G. Vicidomini**§, “Reconstructing the Image Scanning Microscopy Dataset: an Inverse Problem,” *Inverse Problem* **39**(6), 064004 (2023). Preprint on [arXiv](#)

[72] A. Zunino, E. Slenders, F. Fersini, A. Bucci, M. Donato, and **G. Vicidomini**§, “Open-source

tools enable accessible and advanced image scanning microscopy data analysis,” *Nat Photon* **17**, 457-458 (2023).

[71] E. Slenders, and **G. Vicidomini**[§], “ISM-FLUX: MINFLUX with an array detector,” *Phys Rev Research* **5**, 023033 (2023). Preprint on [bioRxiv](#).

[70] E. Di Franco, A. Costantino, E. Cerutti, M. D’Amico, A. P. Privitera, P. Bianchini, **G. Vicidomini**, M. Gulisano, A. Diaspro, and L. Lanzanò, “SPLIT-PIN software enabling confocal and super-resolution imaging with a virtually closed pinhole,” *Sci Rep* **13**, 2741 (2023).

[69] I. Nepita, S. Piazza, M. Ruglioni, S. Cristiani, E. Bosurgi, T. Salvadori, **G. Vicidomini**, A. Diaspro, M. Castello, P. Bianchini, B. Storti, and R. Bizzarri, “Image Scanning Microscopy to Investigate Polycomb Protein Colocalization onto Chromatin,” *Appl Sci* **13**(3), 1556 (2023)

[68] I. Nepita, S. Piazza, M. Ruglioni, S. Cristiani, E. Bosurgi, T. Salvadori, **G. Vicidomini**, A. Diaspro, M. Castello, A. Cerase, P. Bianchini, B. Storti, and R. Bizzarri, “On the Advent of Super-Resolution Microscopy in the Realm of Polycomb Proteins,” *Biology* **12**(3), 374 (2023)

[67] C. J. R. Sheppard, M. Castello, G. Tortarolo, A. Zunino, E. Slenders, P. Bianchini, **G. Vicidomini**, and A. Diaspro, “Signal strength and integrated intensity in confocal and image scanning microscopy,” *J Opt Soc Am A* **40**(1), 138-148 (2023).

[66] G. Tortarolo, A. Zunino, F. Fersini, M. Castello, S. Piazza, C. J. R. Sheppard, P. Bianchini, A. Diaspro, S. Koho, and **G. Vicidomini**, “Focus image scanning microscopy for sharp and gentle super-resolved microscopy,” *Nat Comm* **13**, 7723 (2022). Preprint on [bioRxiv](#).

[65] A. Rossetta, E. Slenders, M. Donato, S. Zappone, F. Fersini, M. Bruno, F. Diotalevi, S. Koho, G. Tortarolo, A. Barberis, M. Crepaldi, E. Perego, and **G. Vicidomini**[§], “The BrightEyes-TTM as an open-source time-tagging module for democratising single-photon microscopy,” *Nat Comm* **13**, 7406 (2022). Preprint on [bioRxiv](#).

[64] E. Cerutti, M. D’Amico, I. Cainero, G. I. Dellino, M. Faretta, **G. Vicidomini**, P. G. Pelicci, P. Bianchini, and A. Diaspro, “Evaluation of STED super-resolution image quality by image correlation spectroscopy (QuICS),” *Sci Rep* **11**, 20782 (2021). Preprint on [bioRxiv](#).

[63] E. Slenders, E. Perego, M. Buttafava, G. Tortarolo, E. Conca, S. Zappone, A. Pierzynska-Mach, F. Villa, E. Maria Petrini, A. Barberis, A. Tosi, and **G. Vicidomini**[§], “Cooled SPAD Array Detector for Low Light-Dose Fluorescence Laser Scanning Microscopy,” *Biophys R* **1**(2), 100025 (2021). Preprint on [biorXiv](#)

[62] D. Ferrante, B. Sterlini, C. Prestigio, A. Marte, A. Corradi, F. Onofri, G. Tortarolo, **G. Vicidomini**, A. Petretto, J. Muià, A. Thalhammer, P. Valente, L. A. Cingolani, F. Benfenati, and P. Baldelli, “Chromatin Investigation in the Nucleus Using a Phasor Approach to Structured Illumination Microscopy,” *Cell Reports* **35**, 109248 (2021).

[61] I. Cainero, E. Cerutti, M. Faretta, G. I. Dellino, P. G. Pelicci, P. Bianchini, **G. Vicidomini**, A. Diaspro, and L. Lanzanò, “Chromatin Investigation in the Nucleus Using a Phasor Approach to Structured Illumination Microscopy,” *Biophys J* **120**(12), 2566-2576 (2021)

[60] E. Slenders, M. Castello, M. Buttafava, F. Villa, A. Tosi, L. Lanzanò, S. V. Koho, and **G. Vicidomini**[§], “Confocal-based fluorescence fluctuation spectroscopy with a SPAD array detector,” *Light Sci Appl* **10**, 31 (2021).

[59] C. J. R. Sheppard, M. Castello, G. Tortarolo, E. Slenders, T. Deguchi, S. V. Koho, P. Bian-

- chini, **G. Vicidomini**, and A Diaspro, “Pixel Reassignment in Image Scanning Microscopy with a Doughnut Beam: Example of Maximum Likelihood Restoration,” *JOSA A* **38**(7), 1075-1084 (2021).
- [58] C. J. R. Sheppard, M. Castello, G. Tortarolo, E. Slenders, T. Deguchi, S. V. Koho, **G. Vicidomini**, and A. Diaspro, “Image Scanning Microscopy with Multiphoton Excitation or Bessel Beam Illumination,” *JOSA A* **37**(10), 1639-1649 (2020).
- [57] M. Buttafava, F. Villa, M. Castello, G. Tortarolo, E. Conca, M. Sanzaro, S. Piazza, P. Bianchini, A. Diaspro, F. Zappa, **G. Vicidomini**, and A. Tosi, “SPAD-Based Asynchronous-Readout Array Detectors for Image-Scanning Microscopy,” *Optica* **7**(7), 755-765 (2020). Preprint on [arXiv](#)
- [56] S. V. Koho, E. Slenders, G. Tortarolo, M. Castello, M. Buttafava, F. Villa, E. Tcarenkova, M. Ameloot, P. Bianchini, C. J. R. Sheppard, A. Diaspro, A. Tosi, and **G. Vicidomini**[§], “Two-Photon Image-Scanning Microscopy with SPAD Array and Blind Image Reconstruction,” *Biomed Opt Express* **11**(6), 2905-2924 (2020). Preprint on [bioRxiv](#).
- [55] S. Pelicci, G. Tortarolo, **G. Vicidomini**, A. Diaspro, and L Lanzañò, “Improving SPLIT-STED Super-Resolution Imaging with Tunable Depletion and Excitation Power,” *J Phys D: Appl Phys* **53**, 234003 (2020).
- [54] C. J. R. Sheppard, M. Castello, G. Tortarolo, T. Deguchi, S. V. Koho, **G. Vicidomini**, and A. Diaspro, “Pixel reassignment in image scanning microscopy: a re-evaluation,” *JOSA A* **37**(1), 154-162 (2020).
- [53] I. Coto Hernandez, M. Castello, G. Tortarolo, N. Jowett, A. Diaspro, L. Lanzañò, and **G. Vicidomini**[§], “Efficient Multiphoton STED Nanoscope exploiting spatio-temporal information,” *Neurophotonics* **6**(4), 045004 (2019).
- [52] S. Koho, G. Tortarolo, M. Castello, T. Deguchi, A. Diaspro, and **G. Vicidomini**[§], “Fourier ring correlation simplifies image restoration in fluorescence microscopy,” *Nat Comm* **10**, 3103 (2019). Preprint on [bioRxiv](#).
- [51] M. Di Bona, M. A. Mancini, D. Mazza, **G. Vicidomini**, A. Diaspro, and L. Lanzañò, “Measuring mobility in chromatin by intensity-sorted FCS,” *Biophys J* **116**(6), 987-999 (2019). Preprint on [bioRxiv](#).
- [50] J. Dreier, M. Castello, G. Coceano, R. Caceres, J. Plastino, **G. Vicidomini**^{§,†}, and I. Testa, “Smart scanning for low-illumination and fast RESOLFT nanoscopy in vivo,” *Nat Commun* **10**, 556 (2019).
- [49] G. Tortarolo, Y. Sun, K.W. Teng, Y. Ishitsuka, L. Lanzañò, P.R. Selvin, B. Barbieri, A. Diaspro, and **G. Vicidomini**[§], “Photon-separation to enhance the spatial resolution of pulsed STED microscopy,” *Nanoscale* **11**, 1754-1761 (2019). Preprint on [bioRxiv](#).
- [48] M. Castello, G. Tortarolo, M. Buttafava, T. Deguchi, F. Villa, S. Koho, L. Pesce, M. Oneto, S. Pelicci, L. Lanzañò, P. Bianchini, C. J. R. Sheppard, A. Diaspro, A. Tosi, and **G. Vicidomini**[§], “A robust and versatile platform for image scanning microscopy enabling super-resolution FLIM,” *Nat Methods* **16**(2), 175-178 (2019). Preprint on [bioRxiv](#).
- [47] S. Colabrese, M. Castello, **G. Vicidomini**^{§,†} and A. Del Bue, “A machine learning approach for single molecule localization microscopy,” *Biomed Opt Express* **9**(4), 1680–1691 (2018)
- [46] L. Scippioni, M. DI Bona, **G. Vicidomini**, A. Diaspro and L. Lanzañò, “Local raster image correlation spectroscopy generates high-resolution intracellular diffusion maps,” *Communications*

Biology **1**, 10 (2018).

- [45] G. Tortarolo, M. Castello, A. Diaspro, S. Koho and **G. Vicidomini**[§], “Evaluating Image Resolution in STED Microscopy,” *Optica* **5**(1), 32–35 (2018)
- [44] M. Duocastella, **G. Vicidomini**, K. Korobchevskaya, K. Pydzinska, M. Ziolek, A. Diaspro, and G. de Miguel “Improving the Spatial Resolution in Direct Laser Writing Lithography by Using a Reversible Cationic Photoinitiator,” *J Phys Chem C* **121**(31), 16970–16977 (2017).
- [43] C.J.R. Sheppard, M. Castello, G. Tortarolo, **G. Vicidomini** and A. Diaspro, “Image formation in image scanning microscopy, including the case of two-photon excitation,” *JOSA A* **34**(8), 1339–1350 (2017)
- [42] L. Lanzaó, L. Scippioni, M. DI Bona, P. Bianchini, R. Bizzarri, F. Cardarelli, A. Diaspro and **G. Vicidomini**[§], “Measurement of nanoscale three-dimensional diffusion in the interior of living cells by STED-FCS,” *Nat Commun* **8**(1), 65 (2017).
- [41] M. Castello, G. Tortarolo, I. Coto Hernández, T. Deguchi, A. Diaspro, and **G. Vicidomini**[§], “Removal of anti-Stokes emission background in STED microscopy by FPGA-based synchronous detection,” *Rev Sci Instrum* **88**(5), 053701 (2017)
- [40] C.J.R. Sheppard, S. Roth, R. Heintzmann, M. Castello, **G. Vicidomini**, R. Chen, X. Chen, and A. Diaspro, “Interpretation of the optical transfer function: Significance for image scanning microscopy,” *Opt Express* **24**(24), 27280–27287 (2016)
- [39] M. Elmeranta, **G. Vicidomini**, M. Duocastella, A. Diaspro, and G. de Miguel “Characterization of nanostructures fabricated with two-beam DLW lithography using STED microscopy Lithography” *Opt Mat Express* **6**(10), 3169–3179 (2016)
- [38] M. Castello, G. Tortarolo, I. Coto Hernández, P. Bianchini, M. Buttafava, G. Boso, A. Tosi, A. Diaspro and **G. Vicidomini**[§], “Gated-STED Microscopy with Sub-Nanosecond Pulsed Fiber Laser for Reducing Photobleaching,” *Microsc Res Tech*, **79**(9), 785–791 (2016)
- [37] I. Coto Hernández, M. Castello, L. Lanzaó, M. d’Amora, P. Bianchini, A. Diaspro and **G. Vicidomini**[§], “Two-Photon Excitation STED Microscopy with Time- Gated Detection,” *Sci Rep*, **6**, 19419 (2016)
- [36] G. de Miguel, **G. Vicidomini**, M. Duocastella, and A. Diaspro, “Selective fluorescence functionalization of dye-doped polymerized structures fabricated by Direct Laser Writing (DLW) Lithography,” *Nanoscale* **7**, 20164–20170 (2015)
- [35] M. Castello, C.J.R. Sheppard, A. Diaspro and **G. Vicidomini**[§], “Image scanning microscopy with a quadrant detector,” *Opt Letters* **40**(22), 5355–5358 (2015)
- [34] G. de Miguel, M. Duocastella, **G. Vicidomini** and A. Diaspro, “ $\lambda/20$ axial control in 2.5D polymerized structures fabricated with DLW lithography,” *Opt Express* **23**(19), 24850–24858 (2015)
- [33] **G. Vicidomini**[§], H. Ta, A. Honigmann, V. Mueller, M. Porsmose Clausen, D. Waithe, S. Galiani, E. Sezgin, A. Diaspro, S.W. Hell and C. Eggeling, “STED-FLCS an advanced tool to reveal spatio-temporal heterogeneity of molecular membrane dynamics,” *Nano Lett* **15**(9), 5912–5918 (2015)
- [32] I. Coto Hernández, M. Butafava, G. Boso, A. Diaspro, A. Tosi and **G. Vicidomini**[§], “gated STED microscopy with time-gated single-photon avalanche diode,” *Biomed Opt Express* **6**, 2258–2267 (2015).

- [31] L. Lanzanó, I. Coto Hernández, M. Castello, E. Gratton, A. Diaspro and **G. Vicidomini**[§], “Encoding and decoding spatio-temporal information for super-resolution microscopy,” *Nat Commun* **6**, 6701 (2015).
- [30] M. Castello, A. Diaspro and **G. Vicidomini**[§], “Multi-image deconvolution improves signal-to-noise ratio on gated CW-STED microscopy,” *Appl Phys Lett* **105**, 234106 (2014).
- [29] M. Duocastella, **G. Vicidomini**, and A. Diaspro, “Simultaneous multiplane confocal microscopy using acoustic tunable lenses,” *Opt Express* **22**, 19293–19301 (2014).
- [28] I. Coto Hernández, M. d’Amora, A. Diaspro, and **G. Vicidomini**[§], “Influence of laser intensity noise on gated CW-STED microscopy,” *Laser Phys Lett* **11**, 095603 (2014).
- [27] I. Coto Hernández, C. Peres, F. Cella Zancacchi, M. d’Amora, S. Christodoulou, P. Bianchini, A. Diaspro, and **G. Vicidomini**[§], “A new filtering technique for removing anti-stokes emission background in gated CW-STED microscopy,” *J Biophotonics* **77**, 376–380 (2014).
- [26] S. Christodoulou, G. Vaccaro, V. Pinchetti, F. De Donato, J. Q. Grim, A. Casu, A. Genovese, **G. Vicidomini**, A. Diaspro, S. Brovelli, L. Manna, and I. Moreels, “Synthesis of highly luminescent wurtzite cdse/cds giant-shell nanocrystals using a fast continuous injection route,” *J Mater Chem C* **2**, 3439–3447 (2014).
- [25] **G. Vicidomini**[§], I. Coto Hernández, M. d’Amora, F. Cella Zancacchi, P. Bianchini, and A. Diaspro, “Gated CW-STED microscopy: A versatile tool for biological nanometer scale investigation,” *Methods* **66**, 124–130 (2014).
- [24] R. Zanella, G. Zanghirati, R. Cavicchioli, L. Zanni, P. Boccacci, M. Bertero, and **G. Vicidomini**[§], “Towards real-time image deconvolution: application to confocal and sted microscopy,” *Sci Rep* **3**, 2523 (2013).
- [23] **G. Vicidomini**[§], A. Schönle, H. Ta, K. Y. Han, G. Moneron, C. Eggeling, and S. W. Hell, “Sted nanoscopy with time-gated detection: Theoretical and experimental aspects,” *PLoS ONE* **8**, e54421 (2013).
- [22] K. Cortese*, **G. Vicidomini***, M. Gagliani, P. Boccacci, A. Diaspro, and C. Tacchetti, “High data output method for 3-d correlative light-electron microscopy using ultrathin cryosections,” in *Nanoimaging, Methods Mol Biol*, **950**, 417–437 (2013).
- [21] K. Cortese, **G. Vicidomini**, M. C. Gagliani, P. Boccacci, A. Diaspro, and C. Tacchetti, “3d hdo-clem: Cellular compartment analysis by correlative light-electron microscopy on cryosection,” *Correlative Light and Electron Microscopy, Methods Cell Biol*, **111**, 95–115 (2013).
- [20] P. Bianchini, B. Harke, S. Galiani, **G. Vicidomini**, and A. Diaspro, “Single-wavelength two-photon excitation-stimulated emission depletion (sw2pe-sted) superresolution imaging,” *PNAS* **109**, 6390–6393 (2012).
- [19] S. Galiani, B. Harke, **G. Vicidomini**, G. Lignani, F. Benfenati, A. Diaspro, and P. Bianchini, “Strategies to maximize the performance of a sted microscope,” *Opt Express* **20**, 7362–7374 (2012).
- [18] **G. Vicidomini**, G. Moneron, C. Eggeling, E. Rittweger, and S. Hell, “Sted with wavelengths closer to the emission maximum,” *Opt Express* **20**, 5225–5236 (2012).
- [17] **G. Vicidomini***, G. Moneron*, K. Han*, V. Westphal, H. Ta, M. Reuss, J. Engelhardt, C. Eggeling, and S. Hell, “Sharper low-power sted nanoscopy by time gating,” *Nat Methods* **8**,

571–575 (2011).

[16] J. Bückers, D. Wildanger, **G. Vicidomini**, L. Kastrup, and S. Hell “Simultaneous multi-lifetime multi-color sted imaging for colocalization analyses,” *Opt. Express* **19**, 3130–3143 (2011).

[15] **G. Vicidomini**, R. Schmidt, A. Egner, S. Hell, and A. Schönle, “Automatic deconvolution in 4pi-microscopy with variable phase,” *Opt Express* **18**, 10154–10167 (2010).

[14] **G. Vicidomini**, M. Gagliani, K. Cortese, J. Krieger, P. Buescher, P. Bianchini, P. Boccacci, C. Tacchetti, and A. Diaspro, “A novel approach for correlative light electron microscopy analysis,” *Microsc Res Tech* **73**, 215–224 (2010).

[13] **G. Vicidomini**, S. Hell, and A. Schönle, “Automatic deconvolution of 4pi-microscopy data with arbitrary phase,” *Opt Lett* **34**, 3583–3585 (2009).

[12] **G. Vicidomini**[§], P. Boccacci, A. Diaspro, and M. Bertero, “Application of the split-gradient method to 3d image deconvolution in fluorescence microscopy,” *J Microsc* **234**, 47–61 (2009).

[11] E. Ronzitti, **G. Vicidomini**, V. Caorsil, and A. Diaspro, “Annular pupil filter under shot-noise condition for linear and non linear microscopy,” *Opt Express* **17**, 6867–6880 (2009).

[10] **G. Vicidomini**^{*}, M. Gagliani^{*}, M. Canfora^{*}, K. Cortese, F. Frosi, C. Santangelo, P. Di Fiore, P. Boccacci, A. Diaspro, and C. Tacchetti, “High data output and automated 3d correlative light-electron microscopy method,” *Traffic* **9**, 1828–1838 (2008).

[9] P. Mondal, **G. Vicidomini**, and A. Diaspro, “Image reconstruction for multiphoton fluorescence microscopy,” *Appl Phys Lett* **92** (2008).

[8] **G. Vicidomini**, M. Schneider, P. Bianchini, S. Krol, T. Szellas, and A. Diaspro “Characterization of uniform ultrathin layer for z-response measurements in three-dimensional section fluorescence microscopy,” *J Microsc* **225**, 88–95 (2007).

[7] P. Mondal, **G. Vicidomini**, and A. Diaspro, “Markov random field aided Bayesian approach for image reconstruction in confocal microscopy,” *J Appl Phys* **102** (2007).

[6] D. Mazza, F. Cella, **G. Vicidomini**, S. Krol, and A. Diaspro, “Role of three-dimensional bleach distribution in confocal and two-photon fluorescence recovery after photobleaching experiments,” *Appl Opt* **46**, 7401–7411 (2007).

[5] G. Colombetti, G. Checcucci, S. Lucia, C. Usai, P. Ramoino, P. Bianchini, M. Pesce, **G. Vicidomini**, and A. Diaspro, “Evidence for ciliary pigment localization in colored ciliates and implications for their photosensory transduction chain: A confocal microscopy study,” *Microsc Res Tech* **70**, 1028–1033 (2007).

[4] V. Caorsi, E. Ronzitti, **G. Vicidomini**, S. Krol, G. McConnell, and A. Diaspro, “Fret measurements on fuzzy fluorescent nanostructures,” *Microsc Res Tech* **70**, 452–458 (2007).

[3] **G. Vicidomini**, P. Mondal, and A. Diaspro, “Fuzzy logic and maximum a posteriori-based image restoration for confocal microscopy,” *Opt Lett* **31**, 3582–3584 (2006).

[2] F. Difato, F. Mazzone, S. Scaglione, M. Fato, F. Beltrame, L. Kubínová, J. Janáček, P. Ramoino, **G. Vicidomini**, and A. Diaspro, “Improvement in volume estimation from confocal sections after image deconvolution,” *Microsc Res Tech* **64**, 151–155 (2004).

[1] P. Bonetto, P. Boccacci, M. Scarito, M. Davolio, M. Epifani, **G. Vicidomini**, C. Tacchetti, P. Ramoino, C. Usai, and A. Diaspro, “Three-dimensional microscopy migrates to the web with ”powerup your microscope”,” *Microsc Res Tech* **64**, 196–203 (2004).

REVIEWS (6)

[6] G. Lukinavičius, J. Alvelid, R. Gerasimait, C. Rodilla-Ramirez, V. T. Nguyễn, **G. Vicidomini**, F. Bottanelli, K. Y. Han, and I. Testa, “Stimulated emission depletion microscopy,” *Nat Rev Methods Primers*, **4**, 56 (2024)

G. Vicidomini[§], P. Bianchini, and A. Diaspro, “STED Super-Resolved Microscopy,” *Nat Methods*, **15**, 173–182 (2018)

[5] **G. Vicidomini**[§], P. Bianchini, and A. Diaspro, “STED Super-Resolved Microscopy,” *Nat Methods*, **15**, 173–182 (2018)

[4] S.W. Hell, S. Sahl, X. Zhuang, R. Heintzmann, M. Booth, J. Bewersdorf, G. Shtengel, H. Hess, P. Tinnefeld, A. Honigsmann, S. Jakobs, I. Testa, L. Cognet, B. Lounis, H. Ewers, S. Davis, D. Klennerman, K. Willig, **G. Vicidomini**, M. Castello, A. Diaspro, T. Cordes, M. Bates, and C. Eggeling, “The 2015 Super-Resolution Microscopy Roadmap,” *J Phys D: Appl Phys*, **48**, 443001 (2015)

[3] P. Bianchini, C. Peres, M. Onetto, S. Galiani, **G. Vicidomini**, and A. Diaspro, “STED nanoscopy: a glimpse into the future,” *Cell Tissue Res*, **360**, 143–150 (2015)

[2] M. Bertero, P. Boccacci, G. Desiderá, and **G. Vicidomini**, “Image deblurring with poisson data: From cells to galaxies,” *Inverse Probl* **25**, 123006 (2009).

[1] A. Diaspro, P. Bianchini, **G. Vicidomini**, M. Faretta, P. Ramoino, and C. Usai, “Multi-photon excitation microscopy,” *Biomed Eng Online* **5**, 36 (2006).

SUBMITTED
OR PREPRINT
PAPERS
(3)

[1] A. Zunino, G. Garr, E. Perego, S. Zappone, M. Donato, and **G. Vicidomini**[§], “Structured Detection for Simultaneous Super-Resolution and Optical Sectioning in Laser Scanning Microscopy,” preprint on [arXiv](#).

[2] E. Slenders, S. Patil, M. O. Held, A. Zunino, **G. Vicidomini**[§], “Array Detection Enables Large Localization Range for Simple and Robust MINFLUX,” preprint on [bioRxiv](#).

[3] M. Donato, E. Slenders, A. Zunino, L. Bega, **G. Vicidomini**[§], “BrightEyes-MCS: a control suite for multichannel scanning microscopy,” preprint on [JOSS](#)

CONFERENCE
PROCEEDINGS
(25)

[25] Y. Sun, G. Tortarolo, Y. Chen, Y. Chang, U. C. Coskun, S. J. Liao, B. Barbieri, **G. Vicidomini**, H. Yeh, “Enhancing the resolution of STED microscopy by SPLIT and flimGANE,” in “Multiphoton Microscopy in the Biomedical Sciences XXIV,” A. Periasamy and P. So, K. Knig, eds. (SPIE, USA, 2024), vol. 12847, p. 1284704.

[24] F. Fersini, A. Zunino, P. Morerio, A. Del Bue, M. J. Booth, **G. Vicidomini**[§], “Direct access to optical aberration information in fluorescence laser scanning microscopy using detector arrays,” in “Adaptive Optics and Wavefront Control for Biological Systems X,” T. G. Bifano, N. Ji, L. Tian, eds. (SPIE, USA, 2024), vol. 12851, p. 1285102.

[23] G. Garré, A. Zunino, F. Fersini, **G. Vicidomini**[§], “Pushing the performance of image scanning microscopy to its limits with maximum likelihood reconstruction,” in “EOS Annual Meeting, 2023”, vol. 287, p. 03001.

[22] **G. Vicidomini**[§], “Single-photon laser-scanning microscopy,” in “Proceedings of the Interna-

tional School of Physics Enrico Fermi, 2023” P. Binachini, A. Diaspro, C. J. R. Sheppard, and M. Bouzin, eds., vol. 210, p. 23-34

[21] A. Zunino, G. Tortarolo, F. Fersini, G. Garré, **G. Vicidomini**[§], “Focus-ISM Enhances Optical Sectioning in Super-Resolution Microscopy,” in “CLEO/Europe-EQEC, 2023”, p.1-1.

[20] E. Slenders, S. Patil, A. Bucci, L. Bega, M. Donato, M. O. Held, **G. Vicidomini**[§], “Single-Molecule Image Scanning Microscopy,” in “CLEO/Europe-EQEC, 2023”, p.1-1.

[19] A. Zunino, G. Tortarolo, F. Fersini, G. Garré, and **G. Vicidomini**[§], “Extending the Three-Dimensional Resolution with Focus-ISM,” in “OSA, Biophotonics Congress, Novel Techniques in Microscopy, 2023”, p. NM2C.4.

[18] G. Tortarolo, S. Piazza, A. Bucci, P. Bianchini, C.J.R. Sheppard, A. Diaspro, E. Slenders, S. Koho, M. Castello, and **G. Vicidomini**[§], “Time-Resolved STED Microscopy with Single-Photon Detector Array: a Perfect Synergy,” in “2021 Conference on Lasers and Electro-Optics Europe and European Quantum Electronics Conference, OSA Technical Digest, Optical Society of America, 2021”, p. cL3-2.

[17] **G. Vicidomini**[§], “Fluorescence Laser-Scanning Microscopy with SPAD Array Detector: Towards Single-Photon Microscopy,” in “OSA, Biophotonics Congress, Novel Techniques in Microscopy, 2021”, p. NF2C.1.

[16] G. Tortarolo, Y. Sun, S. Shah, B. Barbieri, K.W. Teng, Y. Ishitsuka, P.R. Selvin, L. Lanzañó, A. Diaspro, and **G. Vicidomini**[§], “The SPLIT approach for enhancing the spatial resolution in pulsed STED microscopy with FastFLIM and phasor plots,” in “Multiphoton Microscopy in the Biomedical Sciences XIX - Proceedings,” A. Periasamy and P. So, eds. (SPIE, USA, 2019), vol. 108820, p. 108820I.

[15] I. Coto Hernández, L. Lanzañó, M. Castello, N. Jowett, A. Diaspro, **G. Vicidomini**[§], “Improving multiphoton STED nanoscopy with separation of photons by Lifetime Tuning (SPLIT),” in “Multiphoton Microscopy in the Biomedical Sciences XVIII - Proceedings,” A. Periasamy and P. So, eds. (SPIE, USA, 2018), vol. 10498, p. 104982U.

[14] Y. Sun, G. Tortarolo, K.W. Teng, Y. Ishitsuka, U.C. Coskun, S.C. Jeff Liao, A. Diaspro, **G. Vicidomini**, P.R. Selvin and B. Barbieri, “A novel pulsed STED microscopy method using FastFLIM and the phasor plots,” in “Multiphoton Microscopy in the Biomedical Sciences XVII - Proceedings,” A. Periasamy and P. So, eds. (SPIE, USA, 2017), vol. 10069, p. 100691C.

[13] S. Colabrese, M. Castello, **G. Vicidomini** and A. Del Bue, “Learning-based approach to boost detection rate and localisation accuracy in single molecule localisation microscopy,” in “IEEE International Conference on Image Processing (ICIP),” p. 3184–3188.

[12] C.J.R. Sheppard, M. Castello, **G. Vicidomini**, M. Duocastella and A. Diaspro, “Microscopy using source and detector arrays,” in “Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXIII - Proceedings,” T. G. Brown, C. J. Cogswell, and T. Wilson, eds. (SPIE, USA, 2016), vol. 9713, p. 971302.

[11] M. Castello, L. Lanzañó, I. Coto Hernández, C. Eggeling, A. Diaspro and **G. Vicidomini**[§], “The importance of the photon arrival times in STED microscopy,” in “Single Molecule Spectroscopy and Superresolution Imaging VIII - Proceedings,” J. Enderlein, I. Gregor, Z. K. Gryczynski, R. Erdmann, F. Koberling, eds. (SPIE, USA, 2015), vol. 9331, p. 93310X.

[10] M. Duocastella, **G. Vicidomini** and A. Diaspro, “Simultaneous multiple imaging for 3D

confocal microscopy using high-speed z-scanning multiplexing,” in “Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXII - Proceedings,” T. G. Brown, C. J. Cogswell, and T. Wilson, eds. (SPIE, USA, 2015), vol. 9330, p. 93300Q.

9] D. Mazza, P. Bianchini, V. Caorsi, F. Cella, P. Mondal, E. Ronzitti, I. Testa, **G. Vicidomini**, and A. Diaspro, “Non-linear microscopy,” in “Biophotonics,” L. Pavesi and P. M. Fauchet, eds. (Springer, Berlin Heidelberg, 2008), pp. 47–69.

[8] F. Cella, E. Ronzitti, **G. Vicidomini**, P. Mondal, and A. Diaspro, “Studying the illumination puzzle towards an isotropic increase of optical resolution,” in “Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XIV - Proceedings,” J. Conchello, C. Cogswell, T. Wilson, and T. G. Brown, eds. (SPIE, USA, 2008), vol. 6861, p. 686112.

[7] **G. Vicidomini**, J. Zwier, P. Bianchini, F. Cella, E. Ronzitti, S. Krol, T. Szellas, G. Brakenhoff, and A. Diaspro, “Sipcharts using uniform ultra-thin and thin layers for z-response measurements in two-photon excitation fluorescence microscopy,” in “Multiphoton Microscopy in the Biomedical Sciences VII - Proceedings,” A. Periasamy and P. So, eds. (SPIE, USA, 2007), vol. 6442, p. 644224.

[6] **G. Vicidomini**, P. Mondal, and A. Diaspro, “Soft computing approach to confocal and two-photon excitation microscopy,” in “Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XIV - Proceedings,” J. Conchello, C. Cogswell, and T. Wilson, eds. (SPIE, USA, 2007), vol. 6443, p. 644319.

[5] A. Diaspro, I. Testa, M. Faretta, R. Magrassi, S. Barozzi, D. Parazzoli, and **G. Vicidomini**, “3d localized photoactivation of pa-gfp in living cells using two-photon interactions,” in “28th Annual International Conference of the IEEE Engineering in Medicine and Biology - Proceedings,” (IEEE, USA, 2006), vol. 1-15, pp. 389–391.

[4] M. Bertero, P. Boccacci, G. Desidera, and **G. Vicidomini**, “High-resolution imaging by multiple-image deconvolution,” in “Information Optics, AIP Conferences Proceedings,” G. Cristobal, B. Javidi, and S. Vallmitjana, eds. (AIP, USA, 2006), vol. 860, pp. 3–14.

[3] I. Testa, M. Schneider, S. Barozzi, **G. Vicidomini**, D. Parazzoli, M. Faretta, and A. Diaspro, “T2p-gfp: two-photon photo-activation of pa-gfp in the 720-840 nm spectral region. - art. no. 608912,” in “Multiphoton Microscopy in the Biomedical Sciences VI,” A. Periasamy and P. So, eds. (SPIE, USA, 2006), vol. 6089, p. 8912.

[2] **G. Vicidomini**, “Image formation in fluorescence microscopy - three-dimensional mathematical model,” in “From Cells to Proteins: Imaging Nature across Dimensions,” V. Evangelista, L. Barsanti, V. Passarelli, and P. Gualtieri, eds. (Springer, Berlin Heidelberg, 2005), vol. 3, pp. 371–393.

[1] A. Diaspro, P. Bianchini, V. Caorsi, D. Mazza, M. Pesce, I. Testa, **G. Vicidomini**, G. Chirico, F. Cannone, and C. Usai, “From microscopy to nanoscopy: How to get and read optical data at single molecule level using confocal and two-photon excitation microscopy.” in “From Cells to Proteins: Imaging Nature across Dimensions,” V. Evangelista, L. Barsanti, V. Passarelli, and P. Gualtieri, eds. (Springer, Berlin Heidelberg, 2005), vol. 3, pp. 187–207.

BOOK
CHAPTERS (12)

[12] G. Tortarolo, M. Castello, and **G. Vicidomini**, “Super-Resolution Imaging through Laser-Scanning Microscopy,” in “Biomedical Optical Imaging: From Nanoscopy to Tomography,” J. Xia and R. Choe, eds. (AIP Publishing, Melville, New York, 2021), Chapter 3, pp. 3-13-28.

[11] A. Diaspro, P. Bianchini, F. Cella Zancchi, L. Lanzanó, **G. Vicidomini**, M. Oneto, L. Pesce, I. Cainero, “Fluorescence Microscopy,” in “Springer Handbook of Microscopy,” P. W. Hawkes, and J. C. H. Spence eds. (Springer Cham, 2019), Springer Handbooks Series, n. 21

- [10] L. Lanzaó, **G. Vicidomini**, L. Scippioni, M. Castello, and A. Diaspro, “STED microscopy: exploring fluorescence lifetime gradients for super-resolution at reduced illumination intensities,” in “Multi-Photon Microscopy and Fluorescence Lifetime Imaging: Applications in Biology and Medicine,” K. König, ed. (Walter de Gruyter GmbH & Co KG, 2018), pp. 85-102
- [9] L. Lanzaó, L. Scippioni, M. Castello, P. Bianchini, **G. Vicidomini** and A. Diaspro, “Role of the Pico- Nano-Second Temporal Dimension in STED Microscopy,” in “Perspectives on Fluorescence: A Tribute to Gregorio Weber,” D.M. Jameson, ed. (Springer Berlin Heidelberg, 2016), Springer Series on Fluorescence, pp. 1-19
- [8] G. de Miguel, **G. Vicidomini**, B. Harke and A. Diaspro, “Linewidth and Writing Resolution,” in “Three-Dimensional Microfabrication Using Two-photon Polymerization,” T. Baldacchini, ed. (William Andrew Publishing, Oxford, 2016), Series on Micro and Nano Technologies, pp. 190-220
- [7] **G. Vicidomini**, I. Coto Hernández, A. Diaspro, S. Galiani, and G. Eggeling, “The importance of photon arrival times in STED microscopy,” in “Advanced Photon Counting: Applications, Methods, Instrumentation,” P. Kapusta, M. Wahl, and R. Erdmann, eds. (Springer Berlin Heidelberg, 2014), Springer Series on Fluorescence, pp. 283-301
- [6] **G. Vicidomini**, and G. Moneron, “Gated Stimulated Emission Depletion Microscopy (g-STED),” in “Encyclopedia of Biophysics” R.C.K.. Gordon, eds. (Springer, Springer Berlin Heidelberg, 2013), pp. 888-889.
- [5] B. Harke, P. Bianchini, **G. Vicidomini**, S. Galiani, and A. Diaspro, “Stimulated Emission Depletion (STED) Microscopy,” in “Encyclopedia of Biophysics” R.C.K.. Gordon, eds. (Springer, Springer Berlin Heidelberg, 2013), pp. 2470-2475.
- [4] A. Diaspro, P. Bianchini, F. Cella Znacchi, , and **G. Vicidomini**, “Fluorescence Three Dimensional Optical Imaging,” in “Encyclopedia of Biophysics” R.C.K.. Gordon, eds. (Springer, Springer Berlin Heidelberg, 2013), pp. 824-826.
- [3] A. Diaspro, F. Cella Znacchi, P. Bianchini, and **G. Vicidomini**, “Super-resolution fluorescence optical microscopy: Targeted and stochastic read-out approaches,” in “Novel Approaches for Single Molecule Activation and Detection,” F. Benfenati, E. Di Fabrizio, and V. Torre, eds. (Springer Berlin Heidelberg, 2014), Advances in Atom and Single Molecule Machines, pp. 27–43.
- [2] E. Ronzitti, **G. Vicidomini**, F. Znacchi, and A. Diaspro, “Improving image formation by pushing the signal-to-noise ratio,” in “Optical Fluorescence Microscopy,” A. Diaspro, ed. (Springer Berlin Heidelberg, 2011), pp. 101–110.
- [1] A. Diaspro, M. Schneider, P. Bianchini, V. Caorsi, D. Mazza, M. Pesce, I. Testa, **G. Vicidomini**, and C. Usai, “Two-photon excitation fluorescence microscopy,” in “Science of Microscopy,” P. W. Hawkes and J. C. Spence, eds. (Springer New York, 2007), pp. 751–789.

EDITORIALS (1)

- [1] F. Cella Znacchi, P. Bianchini, and **G. Vicidomini**, “Fluorescence microscopy in the spotlight,” *Microsc Res Tech* **77**, 479–482 (2014).

PATENTS AND KNOW-HOW (6)

- [6] “Simultaneous multi-species super-resolution imaging via temporal multiplexing and single-photon detector array,” Publication Number: WO/2023/275777 (licensed by [Genoa Instruments](#))
- [5] “Time-resolved imaging method with high spatial resolution,” Publication Number: WO/2019/145889 (licensed by [Genoa Instruments](#), [Zeiss](#), [Nikon Instruments](#)).

[4] “Efficient assembly and use of stimulated emission depletion microscopy,” Know-How License Agreement (licensed by [ISS](#)).

[3] “Method of stimulated emission depletion microscopy having high spatial resolution,” Publication Number: WO/2019/077556.

[2] “Stimulated Emission-Depletion (STED) Microscopy Based on Time Gating of Excitation Beam and Synchronous Detection of Fluorescence Emission,” Publication Number: WO/2015/022635.

[1] “STED Microscopy with Pulsed Excitation, Continuous Stimulation, and Gated Registration of Spontaneously Emitted Fluorescence Light,” Publication Number: WO/2012/069076 (licensed by [Leica Microsystems](#), [PicoQuant](#), [Abberior Instruments GmbH](#)).