




Scientific contributions by Stephane Perrin

University of Strasbourg, ICube Research Institute

Updated on March 22, 2021

Current h-index: **11** (source: Google Scholar )

Current citation count: **265** (source: Google Scholar )

RG Score: **22.72** (source: Research Gate )

IF: Journal Impact Factor.

A) BOOKS AND CHAPTERS (2)

- 1) S. Perrin, S. Lecler, and P. Montgomery, "Microsphere-assisted interference microscopy" in *Label-free super-resolution microscopy*, V. Astratov (Ed.), Springer International Publishing, 2019, pp. 443-469.
- 2) P. Montgomery, S. Lecler, S. Perrin, and A. Leong-Hoi, "Jouer aux billes sur les nano-terrains" in *Voir l'invisible, Voir - Comprendre - Agir*, J.-M. Lehn (Ed.), Puits Fleuri, 2019 pp. 130-131.

B) PATENTS (1)

- 1) P. Montgomery, S. Lecler, S. Perrin, A. Leong-Hoi, "System and method for super-resolution full-field optical metrology on the far-field nanometre scale," *World patent WO2018189250A1* (2018); *European patent EP3388779A1* (2017).

C) REFEREED JOURNAL ARTICLES (17)

- 1) R. Boudoukha, S. Perrin, A. Guessoum, P. Montgomery, N.-E. Demagh, and S. Lecler, "Near- to far-field coupling of evanescent waves by glass microspheres," *Photonics* **8**(3), 73 (2021), **IF = 2.140**.
- 2) S. Perrin, Y.J. Donie, P. Montgomery, G. Gomard, and S. Lecler, "Compensated microsphere-assisted interference microscopy," *Physical Review Applied* **13**(2), 014068 (2020), **IF = 4.194**.
- 3) S. Lecler, S. Perrin, A. Leong-Hoi, and P. Montgomery, "Photonic jet lens," *Scientific Reports* **9**, 4725 (2019), **IF = 3.998**.
- 4) S. Perrin, H. Li, A. Leong-Hoi, S. Lecler, and P. Montgomery, "Illumination conditions in microsphere-assisted microscopy," *Journal of Microscopy* **274**(1), 69-75 (2019), **IF = 1.575**.
- 5) S. Perrin, H. Li, S. Lecler, and P. Montgomery, "Unconventional magnification behaviour in microsphere-assisted microscopy," *Optics and Laser Technology* **114**, 40-43 (2019), **IF = 3.233**.
- 6) S. Perrin, P. Montgomery, and S. Lecler, "Super-resolution imaging within reach," *Optical Engineering* **58**(5), 050501 (2019), **IF = 1.113**.
- 7) P. Montgomery, S. Lecler, A. Leong-Hoi, and S. Perrin, "High resolution surface metrology using microsphere-assisted interference microscopy," *Physica Status Solidi A* **216**(13), 1800761 (2019), **IF = 1.759**; also appears in Hot Topic: Surfaces and Interfaces (*Advanced Materials Interfaces*, **IF = 4.948**).
- 8) C. Gorecki, J. Lullin, S. Perrin, S. Bargiel, J. Albero, O. Gaiffe, J. Rutkowski, J. M. Cote, J. Krauter, W. Osten, W.-S. Wang, M. Weimer, and J. Froemel, "Micromachined phase-shifted array-type Mirau interferometer for swept-source OCT imaging: design, microfabrication and experimental validation," *Biomedical Optics Express* **10**(3), 1111-1125 (2019), **IF = 3.921**.

- 9) S. Perrin, H. Li, K. Badu, T. Comparon, G. Quaranta, N. Messaddeq, N. Lemercier, P. Montgomery, J.-L. Vonesch, and S. Lecler, "Transmission microsphere-assisted dark-field microscopy," *Physica Status Solidi RRL* **13**(2), 1800445 (2019), **IF = 2.291**.
- 10) A. Leong-Hoi, C. Hairaye, S. Perrin, S. Lecler, P. Pfeiffer, and P. Montgomery, "High resolution microsphere-assisted interference microscopy for 3D characterization of nanomaterials," *Physica Status Solidi A* **215**(6), 1700858 (2017), **IF = 1.759**.
- 11) S. Perrin, A. Leong-Hoi, S. Lecler, P. Pfeiffer, I. Kassamakov, A. Nolvi, E. Haeggstrom, and P. Montgomery, "Microsphere-assisted phase-shifting profilometry," *Applied Optics* **56**(25), 7249-7255 (2017), **IF = 1.961**.
- 12) J. Albero, S. Perrin, N. Passilly, J. Krauter, L. Gauthier-Manuel, L. Froehly, J. Lullin, S. Bargiel, W. Osten, and C. Gorecki, "Wafer-level fabrication of multi-element glass lenses: lens doublet with improved optical performances," *Optics Letters* **41**(1), 96-99 (2016), **IF = 3.714**.
- 13) S. Perrin, M. Baranski, L. Froehly, J. Albero, N. Passilly, and C. Gorecki, "Simple method based on intensity measurements for characterization of aberrations from micro-optical components," *Applied Optics* **54**(31), 9060-9064 (2015), **IF = 1.961**.
- 14) J. Lullin, S. Bargiel, P. Lemoal, S. Perrin, J. Albero, N. Passilly, L. Froehly, F. Lardet-Vieudrin and C. Gorecki, "An electrostatic vertical micro-scanner for phase modulating array-type Mirau micro-interferometry," *Journal of Micromechanics and Microengineering* **25**(11), 115013 (2015), **IF = 1.739**.
- 15) J. Lullin, S. Perrin, M. Baranski, S. Bargiel, L. Froehly, N. Passilly, J. Albero, and C. Gorecki, "Impact of mirror spider legs on imaging quality in Mirau micro-interferometry," *Optics Letters* **40**(10), 2209-2212 (2015), **IF = 3.714**.
- 16) J. Albero, S. Perrin, S. Bargiel, N. Passilly, M. Baranski, L. Gauthier-Manuel, F. Bernard, J. Lullin, L. Froehly, J. Krauter, W. Osten, and C. Gorecki, "Dense arrays of millimeter-sized glass lenses fabricated at wafer-level," *Optics Express* **23**(9), 11702-11712 (2015), **IF = 3.669**.
- 17) M. Baranski, S. Perrin, N. Passilly, L. Froehly, J. Albero, S. Bargiel, and C. Gorecki, "A simple method for quality evaluation of micro-optical components based on 3D IPSF measurement," *Optics Express* **22**(11), 13202-13212 (2014), **IF = 3.669**.

D) CONFERENCES

International Conference Presentations (6):

- 1) S. Perrin, S. Lecler, and P. Montgomery, "From 2D to 3D super-resolution imaging through glass microspheres," *EOS Annual Meeting*, Porto, Portugal, September 2020 (Invited).
- 2) S. Perrin, S. Lecler, and P. Montgomery, "Super-resolution imaging through microspheres," *SPIE Photonics Europe* in Optics and Photonics for Advanced Dimensional Metrology, Strasbourg, France, April 2020 (Invited).
- 3) S. Lecler, S. Perrin, G. Quaranta, N. Messaddeq, N. Lemercier, J.-L. Vonesch, and P. Montgomery, "Label-free super-resolution microsphere-assisted microscopy of biological samples," *SPIE BiOS* in Label-free Biomedical Imaging and Sensing, San Francisco, USA, February 2020 (Invited).
- 4) S. Perrin, S. Lecler, A. Leong-Hoi, and P. Montgomery, "Role of coherence in microsphere-assisted nanoscopy," *SPIE Optical Metrology* in Modeling Aspects in Optical Metrology VI, Munich, Germany, June 2017 (Invited).
- 5) S. Perrin, N. Passilly, L. Froehly, and C. Gorecki, "Aberration retrieval for the characterization of micro-optical

components,” *SPIE Photonics Europe* in Optical Micro- and Nanometrology VI, Brussels, Belgium, April 2016.

- 6) S. Perrin, M. Baranski, N. Passilly, L. Froehly, J. Albero, S. Bargiel, and C. Gorecki, “Simple setup for optical characterization of microlenses,” *SPIE Optics and Photonics in Interferometry XVII: Advanced Applications*, San Diego, United States, August 2014.

National Conference Presentations (3):

- 1) S. Perrin, S. Lecler, and P. Montgomery, “Profilométrie super-résolue par interférométrie optique,” *Congrès OPTIQUE Dijon de la SFO*, Dijon, France, July 2021.
- 2) S. Perrin, N. Messaddeq, N. Lemerrier, P. Montgomery, J.-L. Vonesch, and S. Lecler, “Microsphere-assisted microscopy for biological imaging,” *Journées communes des GdR CNRS MIA et ImBio*, Illkirch, France, November 2018.
- 3) P. Montgomery, A. Leong-Hoi, S. Perrin, S. Lecler, “Techniques de nanoscopie en champ lointain,” *12e Journées communes des GdR CNRS ISIS et ONDES*, Paris, France, March 2017.

Seminars (4):

- 1) S. Perrin, A. Leong-Hoi, S. Lecler, P. Pfeiffer, and P. Montgomery, “Super-resolution profilometry for nanoscale materials,” *Conference for International Graduate Autumn School: Nano & Micro Systems engineering (NAMIS)*, Freiburg, Germany, October 2017.
- 2) O. Caravaca Mora, S. Perrin and P. Montgomery, “The earlier the better - Optical Imaging and Robotics for Early Cancer Screening; The smaller the better - Miniaturization for Space Saving and The more interesting the better,” *Series Science for Dummies, European Doctoral College*, Strasbourg, France, April 2017.
- 3) S. Perrin, J. Lullin, L. Froehly, N. Passilly, and C. Gorecki, “Optical coherence tomography for early diagnosis of skin pathologies,” *International Graduate Workshop Information Optics (WIO)*, Neuchatel, Switzerland, September 2014.
- 4) S. Perrin, L. Froehly, N. Passilly, and C. Gorecki, “Optical Coherence Tomography microsystem for early diagnosis of skin pathologies,” *International Graduate Summer School: Biophotonics '13*, Backafallsbyn, Sweden, June 2013.

Refereed Conference Proceedings (22)

- 1) S. Perrin, S. Lecler, and P. Montgomery, “From 2D to 3D super-resolution imaging through glass microspheres,” *EOS Annual Meeting (EOSAM 2020)*, EPJ Web Conf. **238**, 06002 (2020).
- 2) R. Boudoukha, S. Perrin, A. Guessoum, N.-E. Demagh, P. Montgomery, and S. Lecler, “Whispering gallery mode in super-resolution microsphere-assisted microscopy,” *SPIE Photonics Europe*, Proc. SPIE **11368**, 1136805 (2020).
- 3) G. Basset, A. Luu-Dinh, C. Schneider, D. Schlup, S. Perrin, W. Fangting, and S. Lecler, “Fabrication of arrays of quasi-micro-beads for massively parallel nanojet super-resolution imaging,” *SPIE Photonics Europe*, Proc. SPIE **11368**, 1136803 (2020).
- 4) S. Perrin, S. Lecler, and P. Montgomery, “Super-resolution imaging through microspheres,” *SPIE Photonics Europe*, Proc. SPIE **11352**, 113520T (2020).
- 5) S. Perrin, P. Montgomery, and S. Lecler, “Microsphere-aided imaging of subdiffraction-limited translucent features,” *SPIE Optical Metrology*, Proc. SPIE **11060**, 1106005 (2019).
- 6) S. Marbach, S. Perrin, P. Montgomery, M. Flury, and S. Lecler, “Microsphere-assisted imaging of sub-diffraction-limited features,” *SPIE Optical Metrology*, Proc. SPIE **11056**, 110560R (2019).

- 7) P. Montgomery, S. Perrin, and S. Lecler, “Microsphere-assisted microscopy: From 2D to 3D super-resolution imaging,” *20th International Conference on Transparent Optical Networks (ICTON)*, Proc. IEEE, pp. 1-4 (2018).
- 8) S. Lecler, S. Perrin, A. Leong-Hoi, and P. Montgomery, “Microsphere-assisted microscopy: Contribution to the understanding of label-free super-resolution,” *SPIE BiOS*, Proc. SPIE **10500**, 105000P (2018).
- 9) P. Montgomery, S. Lecler, A. Leong-Hoi, S. Perrin, and P. Pfeiffer, “Sub-diffraction surface topography measurement using a microsphere-assisted Linnik interferometer,” *SPIE Optical Metrology*, Proc. SPIE **10329**, 1032918 (2017).
- 10) S. Perrin, S. Lecler, A. Leong-Hoi, P. Montgomery, “Role of coherence in microsphere-assisted nanoscopy,” *SPIE Optical Metrology*, Proc. SPIE **10330**, 103300V (2017).
- 11) C. Gorecki, S. Bargiel, N. Passilly, O. Gaiffe, L. Froehly, J. Lullin, and S. Perrin, “A MEMS array-type Mirau interferometer for swept-source OCT imaging with applications in dermatology,” *19th International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS)*, Proc. IEEE, pp. 1995-1998 (2017).
- 12) N. Passilly, S. Perrin, J. Albero, J. Krauter, O. Gaiffe, L. Gauthier-Manuel, L. Froehly, J. Lullin, S. Bargiel, W. Osten, and C. Gorecki, “Wafer-level fabrication of arrays of glass lens doublets,” *SPIE Photonics Europe*, Proc. SPIE **9888**, 98880T (2016).
- 13) S. Bargiel, J. Lullin, P. Lemoal, S. Perrin, N. Passilly, J. Albero, L. Froehly, F. Lardet-Vieudrin, and C. Gorecki, “Vertical comb-drive microscanner with 4x4 array of micromirrors for phase-shifting Mirau microinterferometry,” *SPIE Photonics Europe*, Proc. SPIE **9890**, 98900D (2016).
- 14) S. Perrin, N. Passilly, L. Froehly, and C. Gorecki, “Aberation retrieval for the characterization of micro-optical components,” *SPIE Photonics Europe*, Proc. SPIE **9890**, 98901A (2016).
- 15) N. Passilly, S. Perrin, J. Lullin, J. Albero, S. Bargiel, L. Froehly, C. Gorecki, J. Krauter, W. Osten, W.-S. Wang, and M. Wiemer, “Array-type miniature interferometer as the core optical microsystem of an optical coherence tomography device for tissue inspection,” *SPIE Photonics Europe*, Proc. SPIE **9890**, 98900C (2016).
- 16) J. Krauter, T. Boettcher, K. Korner, M. Gronle, W. Osten, N. Passilly, L. Froehly, S. Perrin, and C. Gorecki, “Performance analysis of a full-field and full-range swept-source OCT system,” *SPIE Optical Engineering + Applications*, Proc. SPIE **9576**, 957609 (2015).
- 17) J. Krauter, T. Boettcher, K. Korner, M. Gronle, W. Osten, N. Passilly, L. Froehly, S. Perrin, and C. Gorecki, “Full-field swept-source optical coherence tomography with phase-shifting techniques for skin cancer detection,” *SPIE Optical Metrology*, Proc. SPIE **9529**, 952913 (2015).
- 18) S. Perrin, M. Baranski, N. Passilly, L. Froehly, J. Albero, S. Bargiel, and C. Gorecki, “Simple setup for optical characterization of microlenses,” *SPIE Optical Engineering + Applications*, Proc. SPIE **9204**, 92040D (2014).
- 19) J. Lullin, S. Bargiel, E. Courjon, S. Perrin, M. Baranski, N. Passilly, and C. Gorecki, “Monolithic integration of a glass membrane on silicon micro-actuator for microinterferometry,” *IEEE Optical MEMS and Nanophotonics (OMN)*, Proc. IEEE, pp. 87-88 (2014).
- 20) J. Albero, S. Perrin, S. Bargiel, M. Baranski, N. Passilly, L. Gauthier-Manuel, and C. Gorecki, “Arrays of millimeter-sized glass lenses for miniature inspection systems,” *SPIE Photonics Europe*, Proc. SPIE **9130**, 91300U (2014).
- 21) J. Krauter, T. Boettcher, W. Lyda, W. Osten, N. Passilly, L. Froehly, S. Bargiel, J. Albero, S. Perrin, J. Lullin, and C. Gorecki, “Optical design of a vertically integrated

array-type Mirau-based OCT system,” *SPIE Photonics Europe*, Proc. SPIE **9132**, 91320L (2014).

- 22) M. Baranski, S. Perrin, N. Passilly, L. Froehly, S. Bargiel, J. Albero, and C. Gorecki, “Metrology of micro-optical components quality using direct measurement of 3D intensity point spread function,” *SPIE Photonics Europe*, Proc. SPIE **9132**, 913216 (2014).

E) OTHER CONTRIBUTIONS

Cover pages of journals (1):

- 1) P. Montgomery, S. Lecler, A. Leong-Hoi, and S. Perrin, “High resolution surface metrology using microsphere-assisted interference microscopy,” *Physica Status Solidi A* **216**(13), 1970044 (2019).

Open-access papers (2):

- 1) S. Perrin, K. Badu, P. Montgomery, and S. Lecler, “Super-resolution imaging within reach,” *arXiv:1812.06776* [physics.ed-ph] (2018).
 2) S. Perrin and P. Montgomery, “Fourier optics: basic concepts,” *arXiv:1802.07161* [physics.gen-ph] (2018).

Theses (2):

- 1) S. Perrin, “Development and characterization of an optical coherence tomography micro-system: Application to dermatology,” *Doctorate thesis*, University Bourgogne Franche-Comté (France), June 2016, 160 pages. Supervisors: C. Gorecki, L. Froehly, N. Passilly.

- 2) S. Perrin, “Low-coherence digital holographic microscopy for biological imaging,” *Master thesis*, University of Bourgogne (France) and École Polytechnique Fédérale de Lausanne (Switzerland), June 2010. Supervisors: C. Depeursinge, J. Kuhn.

Scientific highlights (3):

- 1) S. Perrin, S. Lecler and P. Montgomery, “Microspheres for super-resolution 3D reconstructions in interference microscopy,” *Photoniques* **101**, 14 (2020).
 2) P. Montgomery, S. Lecler, and S. Perrin, “Using glass marbles for 3D super-resolution” in *2017, A year at the CNRS in Alsace* (Sept. 2018).
 3) S. Perrin, “Vertically Integrated Array-type Mirau-based OCT System for early detection of skin pathologies,” *Optical Coherence Tomography News* (Mar. 2015).

F) REVIEWS IN JOURNALS

- Elsevier, Optics and Lasers in Engineering, **IF = 4.273**
- OSA, Optics Letters, **IF = 3.714**
- OSA, Optics Express, **IF = 3.669**
- Elsevier, Optics & Laser Technology, **IF = 3.233**
- IEEE, Sensors Journal, **IF = 3.073**
- MDPI, Applied Sciences, **IF = 2.474**
- IEEE, Photonics Technology Letters, **IF = 2.451**
- AIP, Journal of Applied Physics, **IF = 2.286**
- MDPI, Photonics, **IF = 2.140**
- OSA, Applied Optics, **IF = 1.961**
- Springer, Applied Physics B, **IF = 1.817**