

Curriculum Vitae

Michael Shribak

Current position:

Associate Scientist

Marine Biological Laboratory, Woods Hole, MA 02543

Tel. 508-289-7242

Email: mshribak@mbl.edu

Education:

1977-1982: Master Degree (Physical Optics and Spectroscopy)

Physical Department of Lviv State University, Lviv, Ukraine

1987-1991: Doctor of Philosophy (Optics)

Optical Department of Moscow University of Geodesy and Cartography Moscow, Russia

Title of PhD thesis: "Improving optical storage systems with polarization splitting of beams"

Thesis advisor: Prof. Yu.M. Klimkov

Professional appointments:

11/1982-5/1993: State Enterprise "Lviv Radio Engineering Research Institute", and then created on its base in 1987 State Enterprise "Scientific Research Institute of Consumer Radio Electronics Devices", Lviv, UKRAINE

Engineer/ Junior Scientist/ Scientist/ Senior Scientist

6/1993- 7/2000: State Scientific Institution "The A.V.Lykov Institute Heat and Mass Transfer", The National Academy of Sciences of Belarus, Minsk, BELARUS

Senior Scientist

3/1995- 8/1998: Scientific and Technical Center "LEMT (Lasers in Ecology, Medicine and Technology)", Belarusian Optical & Mechanical Association, Minsk, BELARUS

Senior Scientist

9/1998-3/1999: Tokyo University of Agriculture and Technology, Tokyo, JAPAN

Visiting Professor

7/31/2000-**present time**: Marine Biological Laboratory, Woods Hole, Massachusetts, USA

Staff Scientist/ Assistant Research Scientist/ Associate Research Scientist/ Associate Scientist

Invited Talks (last 4 years):

2012, Oct. 6 "Development of the quantitative orientation-independent DIC microscopy," Optical Microscopy & Imaging in the Biomedical Sciences (Special Topics Course), MBL, Woods Hole, MA.

2013, Oct. 8 "Quantitative orientation-independent DIC and polarization microscopy", Optical Microscopy & Imaging in the Biomedical Sciences (Special Topics Course), MBL, Woods Hole, MA.

2013, Nov. 9 "Quantitative orientation-independent DIC and polarization microscopy", Brown MBL Program Retreat, MBL, Woods Hole, MA.

2014, Sep. 13 "Quantitative orientation-independent DIC and polarization microscopy", Optical Microscopy & Imaging in the Biomedical Sciences (Special Topics Course), MBL, Woods Hole, MA.

- 2015, Apr. 10 New light microscopy techniques for mapping of optical thickness and anisotropy in live specimens”, Kovler Diabetes Center, The University of Chicago Medicine, Chicago, IL.
- 2015, June 25 “New developments in DIC and polarized light microscopy techniques”, Physiology: Modern Cell Biology Using Microscopic, Biochemical and Computational Approaches (Summer Course), MBL, Woods Hole, MA.
- 2015, Sep. 22 “New developments in DIC and polarized light microscopy techniques”, Department of Radiology, The University of Chicago, Chicago, IL.
- 2016, Apr. 13 “Polarization and interference microscopy with using liquid crystal optical components”, Liquid Crystal Institute, The Kent University, Kent, OH.
- 2016, Sep. 16 “Orientation-independent DIC and polarization microscopy”, Optical Microscopy & Imaging in the Biomedical Sciences (Special Topics Course), MBL, Woods Hole, MA.
- 2016, Nov. 14 “Quantitative orientation-independent polarization and DIC microscopy”, University of Wisconsin-Madison, Madison, WI.

Service on National Committees:

- NIH: ZRG1 BST-M (58): “ARRA-Challenge grant program at NIH” (2009)
- NIH: ZGM1 BBCB-A: “Biomedical Instrumentation” (2014)
- NIH: ZRG1 MDCN-N (92): “Glia Development, Function and Disease” (2015)
- NIH: ZRG1 BCMB-A (51) R: “NIH Director’s Transformative Research Awards (R01)” (2017)

Editorial Board of Scientific Journals:

- Nature Scientific Reports;

Reviewer for Scientific Journals:

- Applied Optics;
- Biomedical Optics Express;
- Computational and Mathematical Methods in Medicine;
- IEEE: Transactions on Medical Imaging;
- Journal of Biomedical Optics;
- Journal of Engineering Physics and Thermophysics;
- Journal of Microscopy;
- Journal of the Optical Society of America;
- Journal of Optics;
- Journal of Physics D: Applied Physics;
- Material Research Express;
- Optics Communications;
- Optics Express;
- Optical Letters;
- Thin Solid Films;

Funding:

a. Current and Past 10 Years:

06/04/2012-03/31/2018:

NIH 9R01GM101701-04, "Orientation independent DIC and polarization microscopy", Shribak (PI).

01/01/2011-04/31/2012:

NIH 3R01EB005710-03S1, "Orientation independent DIC and polarization microscopy", Shribak (PI).

03/01/2007-12/31/2010:

NIH 1R01EB005710A1, "Orientation independent DIC and polarization microscopy", Shribak (PI).

02/18/2005-02/17/2007:

NIH R44HD037317 (subaward), "Morphology-based rating of egg development potential", Shribak (PI).

07/1/2004-02/28/2009:

NIH R0EB002583 "Development of new automated polarized light microscope", Oldenbourg (PI), Role: Co-Investigator.

5/01/2003-08/31/2006:

NIH R44EB001482 (SBIR, Phases I and II), "Real-time pol-scope microscope for live-cell imaging", Levenson (PI), Role: Co-Investigator.

09/15/2001-09/14/2004:

NIH R01GM62695, "3-D image restoration for polarized light microscopy", Oldenbourg (PI), Role: Co-Investigator.

07/31/2000-08/31/2003:

NIH R01GM49210 "Development of new automated polarized light microscope", Oldenbourg (PI), Role: Co-Investigator.

b. Pending Applications:

04/01/2018-03/31/2022: NIH R01GM101701 "Orientation independent DIC and polarization microscopy", Shribak (PI),

Patents:

1. **M.Shribak** "Polychromatic polarization state generator and its application for real-time birefringence imaging", US Patent 9625369, Int.Cl. G01N 21/23 (2017).
2. **M.Shribak** "Orientation-independent differential interference contrast microscopy technique and device", US Patent 7564618, Int.Cl.G02B 21/06 (2009).
3. **M.Shribak**, and R.Oldenbourg "Retardance measurement system and method", US Patent 7372567, Int.Cl. G01J 4/00 (2007), *licensed to Perkin Elmer (Waltham, MA)*.
4. **M.Shribak**, and R.Oldenbourg "Retardance measurement system and method", US Patent 7239388, Int.Cl. G01J 4/00 (2007), *licensed to Perkin Elmer (Waltham, MA)*.
5. **M.Shribak** "Orientation-independent differential interference contrast microscopy technique and device", US Patent 7233434, Int.Cl.G02B 21/06 (2007).
6. **M.Shribak**, and R.Oldenbourg "Retardance measurement system and method", US Patent 7202950, Int.Cl. G01J 4/00 (2007), *licensed to Perkin Elmer (Waltham, MA)*.

7. **M.Shribak**, R.Oldenbourg, P.J.Cronin, C.C.Hoyt, and P.J.Miller “Instantaneous polarization measurement system and method”, US Patent 7079247, Int.Cl. G01J 4/00 (2006), *licensed to Perkin Elmer (Waltham, MA)*.
8. R.Oldenbourg, **M.Shribak**, C.Hoyt, and P.Torok “Enhancing polarized light microscopy”, US Patent 6924893, Int.Cl. G01J 4/00, (2003).
9. **M.I.Shribak** “Device for quality inspection of the optical fiber end face”, Patent of Belarus No.2443, Int.Cl. G01B 11/02, (1995).
10. L.M.Shashuk, **M.I.Shribak** “Apparatus for determining position and speed of the optical pickup movement in laser disk player”, Patent of Russia No. 2071612, Int.Cl. G11B 7/08, (1992).
11. Yu.M.Klimkov, **M.I.Shribak**, E.L.Iourieva “Method and apparatus for measuring birefringence in optical information carrier”, Patent of Russia No.1835556, Int.Cl. G11B 7/00, (1990).
12. Yu.M.Klimkov, **M.I.Shribak** “Method and apparatus for measurement of the angular displacement of remote object”, Patent of Russia No.1721437, Int.Cl. G01B 11/26, (1989).
13. **M.I.Shribak**, Yu.M.Klimkov “Apparatus for polarization separating of illuminating and reflected laser beams in optical information reading system”, Patent of Russia No.1716566, Int.Cl. G11B 7/00, (1989).
14. Yu.M.Klimkov, **M.I.Shribak** “Sensor of focusing of optical system for data reading”, Patent of the USSR No.1653001, Int.Cl. G11B 7/00, (1989).
15. Yu.M.Klimkov, **M.I.Shribak** “Apparatus for attenuating the optical feedback”, Patent of the USSR No.1653000, Int.Cl.G11B 7/00, (1989).
16. **M.I.Shribak**, Yu.M.Klimkov “Optical reading apparatus”, Patent of the USSR No.1581076, Int.Cl. G11B 7/08, (1988).
17. O.V.Oleksyuk, **M.I.Shribak**, A.P.Dovgan, L.M.Shashuk “Apparatus for measuring radial and vertical displacements of information tracks of disc information carrier”, Patent of the USSR No.1581075, Int.Cl. G11B 7/00, (1988).
18. Yu.M.Klimkov, S.N.Perevalov, I.M.Senko, L.M.Shashuk, **M.I.Shribak** “Optical reading apparatus”, Patent of the USSR No.1559943, Int.Cl. G11B 7/00, (1988).
19. Yu.M.Klimkov, **M.I.Shribak**, “Apparatus for measuring noise of a laser diode”, Patent of the USSR No.1544064, Int.Cl. G11B 7/00, (1988).
20. V.S.Gvozdikov, Yu.M.Klimkov, V.V.Nasonov, V.P.Chalov, L.M.Shashuk, **M.I.Shribak** “Apparatus for optical data reading”, Patent of the USSR No.1528219, Int.Cl. G11B 7/00, (1988).
21. **M.I.Shribak** “Apparatus for measuring parameters of the beam multiplier of laser disk player”, Patent of the USSR No.1474499, Int.Cl. G01M 11/00, (1987).
22. **M.I.Shribak**, V.I.Shribak “Apparatus for adjusting the optical system of laser disc player”, Patent of the USSR No.1469520, Int.Cl. G11B 7/09, (1987).
23. **M.I.Shribak**, A.P.Dovgan, L.M.Shashuk “Apparatus for following-up information track of optical data carrier”, Patent of the USSR No.1455360, Int.Cl. G11B 7/00, (1986).
24. O.G.Vlokh, **M.I.Shribak** “Apparatus for positioning laser beam in optical information reader”, Patent of the USSR No.1446651, Int.Cl. G11B 7/09, (1987).
25. **M.I.Shribak**, S.A.Milutin “Apparatus for adjusting the optical system of laser disk player”, Patent of the USSR No.1434494, Int.Cl. G11B 7/00, (1986).
26. **M.I.Shribak** “Method and apparatus for measuring birefringence of reflecting video disks”, Patent of the USSR No.1431484, Int.Cl. G01N 21/23, (1986).

27. S.A.Milutin, **M.I.Shribak** "Apparatus for adjusting the optical system of laser disk player", Patent of the USSR No.1425776, Int.Cl. G11B 7/00, (1986).
28. **M.I.Shribak**, "Optical reading apparatus", Patent of the USSR No.1422243, Int.Cl. G11B 7/00, (1986).
29. **M.I.Shribak** "Apparatus for measuring birefringence of reflecting optical data carrier", Patent of the USSR No.1414097, Int.Cl. G01N 21/23, (1986).
30. **M.I.Shribak** "Apparatus for measuring birefringence of reflecting optical data carrier", Patent of the USSR No.1390636, Int.Cl. G11B 7/00, (1985).
31. S.A.Milutin, **M.I.Shribak** "Apparatus for measuring diameter of the laser beam", Patent of the USSR No.1378561, Int.Cl. G01M 11/00, G01B 11/00 (1986).
32. S.N.Tkachenko, A.P.Dovgan, I.M.Senko, **M.I.Shribak** "Apparatus for reading information from disc carrier", Patent of the USSR No.1377900, Int.Cl. G11B 7/00, (1986).
33. **M.I.Shribak**, A.P.Dovgan, I.M.Senko "Optical reading apparatus", Patent of the USSR No.1352528, Int.Cl. G11B 7/00, (1986).
34. **M.I.Shribak** "Non-destructive method of measuring of the information microrelief of videodisc", Patent of the USSR No.1344108, Int.Cl. G11B 7/00, (1985).
35. **M.I.Shribak**, "Optical reading apparatus", Patent of the USSR No.1339640, Int.Cl. G11B 7/00, (1986).
36. S.A.Milutin, **M.I.Shribak**, A.P.Dovgan "Apparatus for measuring diameter of the laser beam", Patent of the USSR No.1317281, Int.Cl.G01B 21/00, (1985).
37. S.A.Milutin, **M.I.Shribak** "Apparatus for adjusting the optical system of laser player", Patent of the USSR No.1304068, Int.Cl. G11B 7/00, (1985).
38. **M.I.Shribak**, A.I.Ektov "Apparatus for optical reading of information", Patent of the USSR No.1297106, Int.Cl. G11B 7/00, filed (1985).
39. A.P.Dovgan, **M.I.Shribak** "Follow-up system for information track of optical record carrier", Patent of the USSR No.1290410, Int.Cl. G11B 7/09, (1985).
40. **M.I.Shribak** "Apparatus for measuring birefringence of the reflecting optical information carrier", Patent of the USSR No.1290091, Int.Cl. G01J 4/00, G11B 7/00, (1985).
41. **M.I.Shribak** "Apparatus for measuring birefringence of the reflecting optical information carrier", Patent of the USSR No.1290090, Int.Cl. G01J 4/00, G11B 7/00, (1985).
42. **M.I.Shribak** "Apparatus for measuring birefringence of the reflecting optical data carrier", Patent of the USSR No.1282202, Int.Cl. G11B 7/00, (1985).
43. A.P.Dovgan, I.M.Senko, **M.I.Shribak**, L.P.Dovgan "Apparatus for measuring phase-frequency and amplitude-frequency characteristics", Patent of the USSR No.1277014, Int.Cl. G01R 25/00, (1985).
44. **M.I.Shribak**, A.I.Ektov, M.I.Drobot, I.M.Senko "Apparatus for automatic focusing of the beam", Patent of the USSR No.1273987, Int.Cl. G11B 7/09, (1985).
45. A.P.Dovgan, **M.I.Shribak** "Follow-up system for information track of optical record carrier", Patent of the USSR No.1224827, Int.Cl. G11B 7/09, (1984).
46. **M.I.Shribak** "Apparatus for reading information from optical carrier", Patent of the USSR No.1224826, Int.Cl. G11B 7/09, (1983).
47. **M.I.Shribak**, V.I.Butta "Device for reading information from optical disc carrier", Patent of the USSR No.1216798, Int.Cl. G11B 7/00, (1984).

48. **M.I.Shribak**, N.N.Shamova “Apparatus for measuring birefringence of reflecting optic information carrier”, Patent of the USSR No.1210137, Int.Cl. G11B 7/00, (1984).
49. A.V.Irlin, V.S.Gvozdikov, V.G.Tsukanov, **M.I.Shribak** “Apparatus for tracking light beam during the optical data reading”, Patent of the USSR No.1203583, Int.Cl. G11B 7/09, (1984).
50. **M.I.Shribak** “Apparatus for reading information from optical disk carrier”, Patent of the USSR No.1153353, Int.Cl. G11B 7/00, (1984).
51. V.I.Butta, A.P.Dovgan, M.I.Drobot, I.M.Senko, **M.I.Shribak** “Optical reading device with beam focused on the carrier surface”, Patent of the USSR No.1137518, Int.Cl. G11B 7/00, (1983).

Publications:

a. Original Research in Peer-Reviewed Journals:

1. **M. Shribak**, K. Larkin, D. Biggs, “Mapping of optical path length and image enhancement using orientation-independent differential interference contrast microscopy”, *Journal of Biomedical Optics*, vol. 22, No.1, 16006 (2017), doi: 10.1117/1.JBO.22.1.016006.
2. T. Tani, **M. Shribak**, R. Oldenbourg, “Living cells and dynamic molecules observed with the polarized light microscope: The legacy of Shinya Inoué”, *Biological Bulletin*, vol. 231, No.1, p.85-95 (2016). (free access <http://www.journals.uchicago.edu/doi/full/10.1086/689593>).
3. **M. Shribak**, “Polychromatic polarization microscope: bringing colors to a colorless world”, *Nature/ Scientific Reports*, **5**, 17340; doi: 10.1038/srep17340 (2015) (PMCID: [PMC4661494](https://pubmed.ncbi.nlm.nih.gov/27044444/)). (free access <http://www.nature.com/articles/srep17340>).
4. J.A. Zinskie, **M. Shribak**, M.F. Bruist, K. Aufderheide, C. Janetopoulos, “A mechanical microcompressor for high resolution imaging of motile specimens”, *Experimental Cell Research*, vol. 337, p.249-256 (2015) (PMCID: PMC4696872).
5. S.B. Mehta, **M. Shribak**, R. Oldenbourg, “Polarized light imaging of birefringence and diattenuation at high resolution and high sensitivity”, *Journal of Optics*, vol.15, 094007 (2013). (PMCID: [PMC3834771](https://pubmed.ncbi.nlm.nih.gov/24844444/)). (*selected by the editors of Journal of Optics as a Highlight of 2013*).
6. **M. Shribak**, “Quantitative orientation-independent DIC microscope with fast switching shear direction and bias modulation”, *The Journal of the Optical Society of America A*, vol.30, No.4, p.769-782 (2013). (PMCID: [PMC3695724](https://pubmed.ncbi.nlm.nih.gov/24844444/)). (*selected for Virtual Journal of Biomedical Optics, vol.8, No.5 (2013)*)
7. **M. Shribak**, “Complete polarization state generator with one variable retarder and its application for fast and sensitive measuring of two-dimensional birefringence distribution”, *The Journal of the Optical Society of America A*, vol.28, No.3, p.410-419 (2011). (PMCID: PMC3059986).
8. **M. Shribak**, J. LaFountain, D. Biggs, S. Inoué, “Orientation-independent differential interference contrast (DIC) microscopy and its combination with orientation-independent polarization system”, *Journal of Biomedical Optics*, vol. 13, No.1, 14011 (2008). (PMCID: PMC2302836). (*selected for Virtual Journal of Biological Physics Research, vol.15, No.4 (2008)*)
9. **M. Shribak**, S. Inoué, “Orientation-Independent Differential Interference Contrast Microscopy”, *Applied Optics*, vol. 45, No.3, p. 460-469 (2006). (*featured on journal cover*)
10. E. Barry, Z. Hensel, **M. Shribak**, R. Oldenbourg, and Z. Dogic, “Entropy driven formation of a chiral liquid-crystalline phase of helical filaments”, *Physical Review Letters*, vol. 96, 018305 (2006).
11. **M. Shribak**, R. Oldenbourg, “Three-dimensional birefringence distribution in reconstituted asters of *Spisula* oocytes revealed by scanned aperture polarized light microscopy”, *Biological Bulletin*; 205: 194-195 (2003).

12. **M. Shribak**, R. Oldenbourg, "Techniques for fast and sensitive measurements of two-dimensional birefringence distributions", *Applied Optics*, vol. 42, No.16, p. 3009-3017 (2003).
13. S.Inoué, O.Shimomura, M.Goda, **M.Shribak**, P.T.Tran, "Fluorescence polarization of green fluorescence protein", *Proceedings of the National Academy of Sciences of the USA*, vol.99, No.7, p.4272 - 4277 (2002).
14. **M. Shribak**, S. Inoué, R. Oldenbourg, "Polarization aberrations caused by differential transmission and phase shift in high NA lenses: theory, measurement and rectification", *Optical Engineering*, vol. 41, No. 5, p.943-954, (2002).
15. **M.I.Shribak**, "Polarimetric optical fiber refractometer", *Applied Optics*, vol. 40, No.16, p.2670-2674 (2001).
16. **M.I.Shribak**, Y.Otani, T.Yoshizawa "Autocollimation polarimeter for measuring two-dimensional distribution of birefringence", *Optics & Spectroscopy*, vol. 89, No.1, p.155-159 (2000).
17. **M.I.Shribak**, "Birefringence measurements in elliptic phase plate in the autocollimating mode", *Instruments and Experimental Techniques*, vol.39, No.5, p.732-736 (1996).
18. Yu.M.Klimkov, **M.I.Shribak**, "Application of auto-collimation balance polarimeter for measurement of angular shifts of distant objects", *Measurement techniques*, vol. 38, No.4, p.420-425 (1995).
19. **M.I.Shribak**, "Compensation detector of birefringence", *Instruments and Experimental Techniques*, vol.37, No.4, p.453-456 (1994).
20. V.L.Kolpashchikov, O.G.Martynenko, **M.I.Shribak**, "Temperature measurements using a birefringent sensor", *Journal of Engineering Physics and Thermophysics*, vol.67, No.5-6, p.1106-1112 (1994).
21. V.L.Kolpashchikov, O.G.Martynenko, **M.I.Shribak**, "Fiber optical sensor with single multimode fiber and moving mirror", in "Heat & Mass Transfer-93/92" - Minsk, Academic Scientific Complex "A.V.Luikov Heat & Mass Transfer", p.6-8 (1994) (in Russian).
22. **M.I.Shribak**, "A compensation method of measuring birefringence", *Soviet Journal of Optical Technology*, vol.60, No.8, p.546-549 (1993).
23. Yu.M.Klimkov, **M.I.Shribak**, E.L.Iourieva, "A balanced method of measuring birefringence for normal reflection", *Measurement techniques*, vol. 36, No.7, p.759-762 (1993).
24. L.M.Shashuk, **M.I.Shribak**, "Autocollimation sensor for laser-head position and velocity in reading data from optical disks", *Measurement techniques*, vol. 36, No.4, p.378-380 (1993).
25. Yu.M.Klimkov, **M.I.Shribak**, "An autocollimation system for measuring of angular displacements of remote object by means of birefringence", *Measurement techniques*, vol. 34, No.8, p.781-785 (1991).
26. Yu.M.Klimkov, **M.I.Shribak**, "Polarization separation of direct and reflected beams of laser diode with use of the two-component phase plate", *Journal of Instrument Engineering*, vol.34, No.3, p.54-60 (1991). (in Russian).
27. S.A.Gudenko, Yu.M.Klimkov, E.A.Podpalyi, V.S.Smelov and **M.I.Shribak**, "Magneto-optical polarization conversion of monochromatic polarized optical radiation", *Optics and Spectroscopy*, vol.70, No.5, p.632-634 (1991).
28. Yu.M.Klimkov, **M.I.Shribak**, "Influence of lens shape on polarization aberrations of the axial beam", *Izvestia vuzov. Geodesy and aerophotography*, No.5, p.128-139 (1990). (in Russian).
29. Yu.M.Klimkov, **M.I.Shribak**, "Using the circularity polarized light for measurement of birefringence at the normal reflection", *Izvestia vuzov. Geodesy and aerophotography*, No.1, p.110-115 (1990). (in Russian).
30. **M.I.Shribak**, "Measurement birefringence for normal reflection", *Soviet Journal of Optical Technology*, vol.56, No.11, p.703-706 (1989).
31. Yu.M.Klimkov, **M.I.Shribak**, "A polarization division of direct and reflected beams using a gyrotropic quarter-wave plate", *Soviet Journal of Optical Technology*, vol.56, No.11, p.664-667 (1989).

32. Yu.M.Klimkov, **M.I.Shribak**, “Particularities of using laser diodes in optical video players”, *Journal of Instrument Engineering*, vol.32, No.9, p.68-74 (1989). (in Russian).
33. O.G.Vlokh, **M.I.Shribak**, “Jones matrix at arbitrary elliptical birefringence”, *Bulletin of the Lviv University. Series Physics*, vol.22, p.7-13 (1989). (in Ukrainian).
34. S.A.Milutin, I.M.Senko, S.N.Tkachenko, **M.I.Shribak**, “Tracking in optical audio players”, *Tehnika sredstv svyazi. Ser. TRPA*, No.3, p.104-107 (1987). (in Russian).
35. **M.I.Shribak**, “Use of gyrotropic birefringent plate as quarter-wave plate”, *Soviet Journal of Optical Technology*, vol.53, No.8, p.443-446 (1986).
36. **M.I.Shribak**, “A polarization separation of forward and reverse beams in the reading of reflective carriers of information”, *Soviet Journal of Optical Technology*, vol.53, No.7, p.389-391 (1986).

b. Book Chapters:

1. **M.Shribak**, “Polarization” (revised). In: *Handbook of Optical Metrology: Principles and Applications*, 2nd edition (ed. T. Yoshizawa), CRC Press, Boca Raton, FL, USA, pp. 373-388 (2015).
2. **M.Shribak**, “Differential interference contrast microscopy”. In: *Biomedical Optical Phase Microscopy and Nanoscopy* (eds. N. T. Shaked, Z. Zalevsky and L. L. Satterwhite), Elsevier, (2012).
3. R.Oldenbourg, and **M.Shribak**, “Microscopes”. In: *Handbook of Optics, Third Edition, Volume I: Geometrical and Physical Optics, Polarized Light, Components and Instruments* (ed. Michael Bass), McGraw-Hill Professional, (2010).
4. **M.Shribak**, “Polarization”. In: *Handbook of Optical Metrology: Principles and Applications* (ed. T. Yoshizawa), CRC Press, Boca Raton, FL, USA, pp. 339-350 (2009).

c. Invited Publications:

1. D.C.France, V.Baru, **M.Shribak**, S.Inoue, S.McCutcheon, H.E.Buhse, P.T.Matsudaira, “Nano spring eternal” in “Cell Biology 2005”, Press Book for the 45th Annual Meeting of the American Society for Cell Biology, San Francisco, CA, December 10-14, 2005, p.9 (2005).
2. **M.Shribak**, and R.Oldenbourg “Imaging birefringent biological organelles independent of their orientation in 3D space” in Conference “Frontiers in Optics 2005/ Laser Science XXI”, Tucson, USA, October 16-20, 2005, Technical Digest CD, p. FMH2 (2005).
3. R.Oldenbourg, and **M.Shribak**, “Architectural dynamics in living cells revealed by polarized light microscopy” in 8th International Conference on Optics Within Life Sciences, Melbourne, Australia, 28 November - 1 December 2004, Book of Abstracts, pp.128-129, (2004).
4. **M.Shribak**, and R.Oldenbourg “Mapping microtubule birefringence in three-dimensional orientation by polarization microscope with scanning oblique illumination beam”, *O plus E*, vol.26, No.1, p.1-2 (2004) (in Japanese).
5. **M. Shribak**, and R.Oldenbourg “A polarizing microscope for mapping birefringent object in 3D space”, *Microscopy Today*, vol. 11, No.6, p. 42-46 (2003).

d. Conference Proceedings:

1. **M. Shribak**, “Compact Orientation-Independent Differential Interference Contrast (OI-DIC) microscope designed for high resolution and high sensitivity mapping of optical path and optical path gradient”, *Microscopy and Microanalysis*, vol. 20 (Suppl 3) p.1350-1351, (2014). (PMCID: [PMC4260647](https://pubmed.ncbi.nlm.nih.gov/266647/)).
2. **M. Shribak**, “Using liquid crystal variable retarders for fast modulation of bias and shear direction in quantitative differential interference contrast (DIC)”, in *Three-Dimensional and Multidimensional Microscopy: Image*

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