

Development of an affordable and state-of-art optical super-resolution imaging system utilizing stochastic optical reconstruction microscopy

by Anupam Bharadwaj

Submission date: 29-Jan-2026 11:05AM (UTC+0530)

Submission ID: 2850866325

File name: Main_Chapters.pdf (9.61M)

Word count: 28276

Character count: 145498

Development of an affordable and state-of-art optical super-resolution imaging system utilizing stochastic optical reconstruction microscopy

ORIGINALITY REPORT

13%

SIMILARITY INDEX

3%

INTERNET SOURCES

13%

PUBLICATIONS

0%

STUDENT PAPERS

PRIMARY SOURCES

1 Anupam Bharadwaj, Ranjan Kalita, Amalesh Kumar, Anupam Sarma et al. "A Cost-effective, Modular, Research-grade Optical Microscope", Current Science, 2024 3%

Publication

2 Anupam Bharadwaj, Amalesh Kumar, Rumela Mitra, Bithiah Grace Jaganathan, Bosanta R Boruah. "Enhanced fluorescence blinking of AF647 fluorophores in Mowiol via violet and UV light induced recovery for superior localization microscopy", Methods and Applications in Fluorescence, 2024 2%

Publication

3 Anupam Bharadwaj, Amalesh Kumar, Ranjan Kalita, RUMELA MITRA et al. "Super-resolved fluorescence imaging utilising accessible stochastic optical reconstruction microscopy (easySTORM) implemented on a low-cost, modular open-source (openFrame) microscope", Measurement Science and Technology, 2024 2%

Publication

4 www.ncbi.nlm.nih.gov 1%
Internet Source

5 Alberto Diaspro. "Nanoscopy and Multidimensional Optical Fluorescence Microscopy", Chapman and Hall/CRC, 2019 <1%

6

Anupam Bharadwaj, Amalesh Kumar, RUMELA MITRA, Bithiah Grace Jaganathan, Bosanta Ranjan Boruah. "Enhanced fluorescence blinking of AF647 fluorophores in Mowiol via violet and UV light induced recovery for superior localization microscopy", Methods and Applications in Fluorescence, 2024

Publication

<1 %

7

Karuna Sindhu Malik, Bosanta R Boruah. "Optimal trap velocity in a dynamic holographic optical trap using a nematic liquid crystal spatial light modulator", Journal of Optics, 2022

Publication

<1 %

8

Anupam Bharadwaj, Amalesh Kumar, Sam Padalumavunkal Mathew, Rumela Mitra et al. "Advancing cellular insights: Super-resolution STORM imaging of cytoskeletal structures in human stem and cancer cells", Biochemistry and Biophysics Reports, 2024

Publication

<1 %

9

etheses.whiterose.ac.uk

Internet Source

<1 %

10

"Advances in Biophotonics, Nanofabrication, Optical Metrology and Nonlinear and Ultrafast Photonics", Springer Science and Business Media LLC, 2025

Publication

<1 %

11

Kulkarni, Nachiket. "Low-Cost Chromatic Confocal Endomicroscope for the Diagnosis of Cervical Precancer", The University of Arizona, 2021

Publication

<1 %

12	ir.canterbury.ac.nz Internet Source	<1 %
13	livrepository.liverpool.ac.uk Internet Source	<1 %
14	hdl.handle.net Internet Source	<1 %
15	Roy, Sangheeta. "Recognition of Multi-Type and Multi-Oriented Text in Videos", University of Malaya (Malaysia), 2023 Publication	<1 %
16	Christensen, Charles Nicklas. "Deep Learning for Image Processing in Optical Super-Resolution Microscopy", University of Cambridge (United Kingdom) Publication	<1 %
17	Neuromethods, 2014. Publication	<1 %
18	Wang, Renjie. "Selective Area Epitaxy of GaN-Based Nanowire Heterostructures for Applications in Photonic and Electronic Devices.", McGill University (Canada), 2021 Publication	<1 %
19	e-pub.uni-weimar.de Internet Source	<1 %
20	Submitted to Ark Schools Student Paper	<1 %
21	Kitamura, N.. "Optical trapping-chemical analysis of single microparticles in solution", Journal of Photochemistry & Photobiology, C: Photochemistry Reviews, 20031215 Publication	<1 %
22	Gao, Hao-Cheng. "Advanced Interferometric Super-Resolution Techniques for Visualizing	<1 %

and Quantifying Synaptic Plasticity in Mouse
Brain Models", Purdue University, 2025

Publication

23

core.ac.uk

Internet Source

<1 %

24

www.future-science.com

Internet Source

<1 %

25

Blackburn, Catherine Louise. "The Benefit
Received from Visual Information when
Listening to Clear and Degraded Speech in
Background Noise", Nottingham Trent
University (United Kingdom), 2020

Publication

<1 %

26

Chen, Haoxiu. "Microstructure Evolution and
Mechanical Behavior of Laser Additively
Manufactured Alloys With Heterogeneous
Microstructures.", University of Toronto
(Canada), 2024

Publication

<1 %

27

Li, Shaoheng. "Super-Resolution Fluorescence
Microscopy", University of Georgia, 2025

Publication

<1 %

28

Lecture Notes in Computer Science, 2014.

Publication

<1 %

29

Patra, Shashwat Rajan. "Exploring Deep
Learning Methods for Low Numerical
Aperture to High Numerical Aperture
Resolution Enhancement in Confocal
Microscopy", The University of Memphis, 2023

Publication

<1 %

30

www.science.org

Internet Source

<1 %

31

"The Nuclear Envelope", Springer Science and
Business Media LLC, 2016

<1 %

32 Roy, Anish Raj. "Visualizing Unusual Mammalian Cell Environments at the Nanoscale with Advanced Fluorescence Super-Resolution Microscopy Methods", Stanford University, 2023

Publication

<1 %

33 shu.bg
Internet Source

<1 %

34 spectrum.library.concordia.ca
Internet Source

<1 %

35 Submitted to Hong Kong University of Science and Technology

Student Paper

<1 %

36 Submitted to Imperial College of Science, Technology and Medicine

Student Paper

<1 %

37 Yoshikawa, M.. "TNF- α and IL-4 regulate expression of fractalkine (CX3CL1) as a membrane-anchored proadhesive protein and soluble chemotactic peptide on human fibroblasts", FEBS Letters, 20040312

Publication

<1 %

38 ia600902.us.archive.org
Internet Source

<1 %

39 uhra.herts.ac.uk
Internet Source

<1 %

40 Tejendra K. Gupta, Bhanu P. Singh, Ravi Kant Tripathi, Sanjay R. Dhakate, Vidya N. Singh, O. S. Panwar, Rakesh B. Mathur. "Superior nano-mechanical properties of reduced graphene oxide reinforced polyurethane composites", RSC Advances, 2015

Publication

<1 %

41	retrovirology.biomedcentral.com Internet Source	<1 %
42	d-nb.info Internet Source	<1 %
43	docnum.univ-lorraine.fr Internet Source	<1 %
44	escholarship.org Internet Source	<1 %
45	pdffox.com Internet Source	<1 %
46	wa Mulange, Delphin Mulange. "Stabilization of Cr(VI) from Fine Ferrochrome Dust Using Exfoliated Vermiculite", University of Pretoria (South Africa), 2023 Publication	<1 %
47	www.coursehero.com Internet Source	<1 %
48	"Practical Materials Characterization", Springer Science and Business Media LLC, 2014 Publication	<1 %
49	Hofmann, C.. "Energy transfer in a single self-aggregated photosynthetic unit", FEBS Letters, 20030710 Publication	<1 %
50	Hue, Seng Hoe. "The Investigation of Pure Viscoelastic Fluids in a Liquid-Liquid Displacement System", University of London, University College London (United Kingdom), 2024 Publication	<1 %
51	S. Sugai. "Stochastic random network model in Ge and Si chalcogenide glasses", Physical Similarity Report-19-4110-196195004	<1 %

52 www.frontiersin.org <1 %
Internet Source

53 Alessandra Cambi, Diane S. Lidke. "Cell Membrane Nanodomains - From Biochemistry to Nanoscopy", CRC Press, 2019 <1 %
Publication

54 Emile P. Dupont, Estelle Labonne, Caroline Vandevyver, Ulrike Lehmann, Edoardo Charbon, Martin A. M. Gijs. "Monolithic Silicon Chip for Immunofluorescence Detection on Single Magnetic Beads", Analytical Chemistry, 2009 <1 %
Publication

55 Liao, Zhiyu, Emma N. Hooley, Long Chen, Sebastian Stappert, Klaus Müllen, and Tom Vosch. "Green Emitting Photoproducts from Terrylene Diimide after Red Illumination", Journal of the American Chemical Society, 2013. <1 %
Publication

56 Lu, Yi-Han. "Optically Activated Delayed Fluorescence Anisotropy: A new Approach for Macromolecular Size Determination.", Georgia Institute of Technology <1 %
Publication

57 Methods in Molecular Biology, 2013. <1 %
Publication

58 Mike Wördemann. "Structured Light Fields", Springer Science and Business Media LLC, 2012 <1 %
Publication

59 Nguyen, Chi-Toan. "Microstructure Changes During Fast β Cycles of Zirconium Alloys", The University of Manchester (United Kingdom), 2025
Publication

60 S. McFarlin. "A synthetic interferometric isar technique for developing 3-d signatures", 2003 IEEE Aerospace Conference Proceedings (Cat No 03TH8652) AERO-03, 2003
Publication

61 Xinfu Zhang, Yi Xiao, Jing Qi, Junle Qu, Bosung Kim, Xiling Yue, Kevin D. Belfield. "Long-Wavelength, Photostable, Two-Photon Excitable BODIPY Fluorophores Readily Modifiable for Molecular Probes", The Journal of Organic Chemistry, 2013
Publication

62 doi.org
Internet Source

63 www.science.gov
Internet Source

64 "Polar Oxides", Wiley, 2004
Publication

65 Mi-Sun Hwang, Won-Ki Baek. "Glucosamine induces autophagic cell death through the stimulation of ER stress in human glioma cancer cells", Biochemical and Biophysical Research Communications, 2010
Publication

66 Yves Dufrêne. "Life at the Nanoscale - Atomic Force Microscopy of Live Cells", CRC Press, 2019
Publication

67

Bernard Valeur, Mário Nuno Berberan-Santos. "Molecular Fluorescence", Wiley, 2012

Publication

<1 %

68

Methods in Molecular Biology, 2015.

Publication

<1 %

69

Teng Zhao, Ying Wang, Yuanliang Zhai, Xiaoxuan Qu, Aifang Cheng, Shengwang Du, M. M. T. Loy. "A user-friendly two-color super-resolution localization microscope", Optics Express, 2015

Publication

<1 %

70

www.db-thueringen.de

Internet Source

<1 %

Exclude quotes ☒ On

Exclude matches ☐ Off

Exclude bibliography ☒ On