



## Rajib Ahmed

Postdoctoral Research Fellow, Radiology

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#### BIO

Dr. Rajib Ahmed working as a postdoc fellow at Stanford University School of Medicine, Canary Center at Stanford for Cancer Early Detection. His research focus on micro- and nano-technologies based biomedical optical devices.

Rajib received his B.Sc. and M.Sc. degree at the department of applied physics electronics and communication engineering in 2010 and 2012 from University of Dhaka (Bangladesh), and also studied two-year double degree M.Sc. as a Erasmus mundus student at MAsters on Photonic NETWORKS Engineering (MAPNET) on in Scuola Superiore Sant'Anna (Italy), Aston University (UK), and Technische Univeraitat Berlin (Germany) in 2013-2014. He received his Ph.D. degree on laser based nanofabrication from school of engineering, University of Birmingham (UK) in 2018. Upon the completion of his Ph.D. studies, Rajib started working as a postdoctoral research fellow at Stanford University School of Medicine in 2018.

Rajib has published his research work in the most prestigious journals (more than 40), including ACS Nano, Light: Science & Applications, Advanced Optical Materials, Advanced Healthcare Materials, Scientific Reports, Nanoscale, ACS Photonics, Optics Express, Optics Letter, Applied Physics Letter, etc. Besides his research publications, he has contributed to the publication of 4 book chapters and also working as a scientific journal editors and reviewers. His research findings have been presented in national and international conferences.

#### HONORS AND AWARDS

- Honorable mentioned paper award,, World Congress on Micro and Nano Manufacturing 2018 (18-20 September 2018)
- Travel Grant, Summer Session, Non-linear and Quantum Optics, Brazil, São Paulo School of Advanced Science (SPSAS) (2018)
- School Scholarship, University of Birmingham (2015)
- Travel Grants, CIOMP and OSA summer session, Optical Engineering, china, OSA Foundation (2013)
- Travel Grants, Meeting for Young Researcher, Poland, SPIE/OSA Foundation (2013)
- Erasmus Mundus Scholarship, MAsters on Photonic NETWORKS Engineering (MAPNET), European Union (2012/2014)
- Best Presentation Award, CIOMP-OSA Summer Session, Leaser and Their Applications, China, The Optical Society (2011)
- Travel Grants, CIOMP and OSA summer session, Laser and their Applications, China, The Optical Society (2011)
- Best Student Paper Award, PHOTNICS 2010 Conference, Guwahati, India, IEEE Photonics Society (2010)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board Member, Journal of Integrative Medicine; Int Journal of Electronics and Informatics (IJEI) (2018 - present)
- Organizing Committee Member, ICIEV Conference Series (2018 - present)

- Reviewer, ACS Materials and Interfaces (2018 - present)
- Reviewer, Nature Scientific Report (2018 - present)
- Reviewer, MDPI (SENSORS, Micromachines; Materials) (2018 - present)
- Reviewer, APL Photonics. (2018 - present)
- Reviewer, RSC Advance. (2018 - present)
- Reviewer, IEEE(Journal of Lightwave Technology, Electronics Letters) (2017 - present)
- Reviewer, Optical and Quantum Electronics (2017 - present)
- Reviewer, OSA( Optics Express, Applied Optics, Optics Letters, Optical Materials Express) (2013 - present)

## PROFESSIONAL EDUCATION

- Doctor of Philosophy, University Of Birmingham (2018)
- Master of Science, Aston University, Technische Universität Berlin , Photonic NETWORKS Engineering (2014)
- Master of Science, Scuola Superiore Sant'Anna , Photonic NETWORKS Engineering (2013)
- Master of Science, University Of Dhaka (2012)
- Bachelor of Science, University Of Dhaka (2010)

## LINKS

- Research Gate: [https://www.researchgate.net/profile/Rajib\\_Ahmed3](https://www.researchgate.net/profile/Rajib_Ahmed3)
- Google Scholar: [https://scholar.google.co.uk/citations?hl=en&user=SmEoIXsAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.co.uk/citations?hl=en&user=SmEoIXsAAAAJ&view_op=list_works&sortby=pubdate)

## Publications

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### PUBLICATIONS

- **Lateral and Vertical Flow Assays for Point-of-Care Diagnostics** *ADVANCED HEALTHCARE MATERIALS*  
Jiang, N., Ahmed, R., Damayantharan, M., Unal, B., Butt, H., Yetisen, A. K.  
2019; 8 (14)
- **Diffraction Surface Patterns through Single-Shot Ns-Pulsed Laser Ablation** *ACS Photonics*  
Ahmed, R., et al  
2019; 6 (7): 1572-1580
- **Graphene-Reinforced Advanced Composite Materials** *Handbook of Graphene, Volume 4: Graphene Composite Materials*  
Ji, X., Qi, S., Ahmed, R.  
John Wiley & Sons.2019
- **Lateral and Vertical Flow Assays for Point-of-Care Diagnostics.** *Advanced healthcare materials*  
Jiang, N., Ahmed, R., Damayantharan, M., Ünal, B., Butt, H., Yetisen, A. K.  
2019; e1900244
- **Holographic Writing of Ink-Based Phase Conjugate Nanostructures via Laser Ablation (vol 7, 10603, 2017)** *SCIENTIFIC REPORTS*  
Khalid, M., Ahmed, R., Yetisen, A. K., AlQattan, B., Butt, H.  
2018; 8: 6363
- **Highly sensitive selectively coated photonic crystal fiber-based plasmonic sensor** *OPTICS LETTERS*  
Rifat, A. A., Haider, F., Ahmed, R., Mahdiraji, G., Adikan, F., Miroshnichenko, A. E.  
2018; 43 (4): 891–94
- **Functionalized Flexible Soft Polymer Optical Fibers for Laser Photomedicine** *ADVANCED OPTICAL MATERIALS*  
Jiang, N., Ahmed, R., Rifat, A. A., Guo, J., Yin, Y., Montelongo, Y., Butt, H., Yetisen, A. K.  
2018; 6 (3)

- **Flexible corner cube retroreflector array for temperature and strain sensing** *RSC ADVANCES*  
Khalid, M., Ahmed, R., Yetisen, A. K., Butt, H.  
2018; 8 (14): 7588–98
- **Remote Thermal Sensing by Integration of Corner-Cube Optics and Thermochromic Materials** *Advanced Optical Materials*  
Khalid, M., Whitehouse, C., Ahmed, R., et al  
2018; 1801013
- **Spiral Photonic Crystal Fiber-Based Dual-Polarized Surface Plasmon Resonance Biosensor** *IEEE SENSORS JOURNAL*  
Hasan, M., Akter, S., Rifat, A. A., Rana, S., Ahmed, K., Ahmed, R., Subbaraman, H., Abbott, D.  
2018; 18 (1): 133–40
- **Photonic crystal fiber based plasmonic sensors** *SENSORS AND ACTUATORS B-CHEMICAL*  
Rifat, A. A., Ahmed, R., Yetisen, A. K., Butt, H., Sabouri, A., Mandiraji, G., Yun, S., Adikan, F.  
2017; 243: 311–25
- **Highly Sensitive D-Shaped Photonic Crystal Fiber-Based Plasmonic Biosensor in Visible to Near-IR** *IEEE SENSORS JOURNAL*  
Rifat, A. A., Ahmed, R., Mahdiraji, G., Adikan, F.  
2017; 17 (9): 2776–83
- **High Numerical Aperture Hexagonal Stacked Ring-Based Bidirectional Flexible Polymer Microlens Array** *ACS NANO*  
Ahmed, R., Yetisen, A. K., Butt, H.  
2017; 11 (3): 3155–65
- **Color-selective holographic retroreflector array for sensing applications** *LIGHT-SCIENCE & APPLICATIONS*  
Ahmed, R., Yetisen, A. K., Yun, S., Butt, H.  
2017; 6
- **Printable ink lenses, diffusers, and 2D gratings** *NANOSCALE*  
Ahmed, R., Yetisen, A. K., El Khoury, A., Butt, H.  
2017; 9 (1): 266–76
- **Phase-conjugated directional diffraction from a retroreflector array hologram** *RSC ADVANCES*  
Ahmed, R., Rifat, A. A., Hassan, M., Yetisen, A. K., Butt, H.  
2017; 7 (41): 25657–64
- **Color-Selective 2.5D Holograms on Large-Area Flexible Substrates for Sensing and Multilevel Security** *ADVANCED OPTICAL MATERIALS*  
Yetisen, A. K., Butt, H., Mikulchyk, T., Ahmed, R., Montelongo, Y., Humar, M., Jiang, N., Martin, S., Naydenova, I., Yun, S.  
2016; 4 (10): 1589–1600
- **Multiwall carbon nanotube microcavity arrays** *JOURNAL OF APPLIED PHYSICS*  
Ahmed, R., Rifat, A. A., Yetisen, A. K., Dai, Q., Yun, S., Butt, H.  
2016; 119 (11)
- **Highly sensitive multi-core flat fiber surface plasmon resonance refractive index sensor** *OPTICS EXPRESS*  
Rifat, A. A., Mandiraji, G. A., Sua, Y., Ahmed, R., Shee, Y. G., Adikan, F.  
2016; 24 (3): 2485–95
- **Copper-Graphene-Based Photonic Crystal Fiber Plasmonic Biosensor** *IEEE PHOTONICS JOURNAL*  
Rifat, A. A., Mahdiraji, G., Ahmed, R., Chow, D. M., Sua, Y. M., Shee, Y. G., Adikan, F.  
2016; 8 (1)
- **Optical microring resonator based corrosion sensing** *RSC ADVANCES*  
Ahmed, R., Rifat, A. A., Yetisen, A. K., Salem, M., Yun, S., Butt, H.  
2016; 6 (61): 56127–33
- **Holographic direct pulsed laser writing of two-dimensional nanostructures** *RSC ADVANCES*  
AlQattan, B., Butt, H., Sabouri, A., Yetisen, A. K., Ahmed, R., Mahmoodi, N.  
2016; 6 (112): 111269–75

- **Surface Plasmon Resonance Photonic Crystal Fiber Biosensor: A Practical Sensing Approach** *IEEE PHOTONICS TECHNOLOGY LETTERS*  
Rifat, A. A., Mahdiraji, G., Sua, Y. M., Shee, Y. G., Ahmed, R., Chow, D. M., Adikan, F.  
2015; 27 (15): 1628–31
- **Photonic Crystal Fiber-Based Surface Plasmon Resonance Sensor with Selective Analyte Channels and Graphene-Silver Deposited Core** *SENSORS*  
Rifat, A. A., Mahdiraji, G., Chow, D. M., Shee, Y., Ahmed, R., Adikan, F.  
2015; 15 (5): 11499–510
- **Carbon nanotube biconvex microcavities** *APPLIED PHYSICS LETTERS*  
Butt, H., Yetisen, A. K., Ahmed, R., Yun, S., Dai, Q.  
2015; 106 (12)
- **Development of Photonic Crystal Fiber-Based Gas/Chemical Sensors** *Computational Photonic Sensors*  
Rifat, A.  
Springer International Publishing AG, part of Springer Nature 2019.2019; M. F. O. Hameed and S. Obayya: 287–317
- **Real-time Biosensing of Proteins on a DVD Nanoplasmonic Grating**  
Ahmed, R., Ozen, M., Inci, F., Karaaslan, M., Henrich, T. J., Demirci, U., VoDinh, T., Ho, H. P., Ray, K.  
SPIE-INT SOC OPTICAL ENGINEERING.2019
- **Real-time biosensing of proteins on a DVD nanoplasmonic grating** *Plasmonics in Biology and Medicine XVI*  
Ahmed, R., et al  
2019: 108940N
- **Subwavelength Direct Laser Nanopatterning via Microparticle Arrays for Functionalizing Metallic Surfaces** *Subwavelength Direct Laser Nanopatterning via Microparticle Arrays for Functionalizing Metallic Surfaces*  
Romano, J., AHMED, R., et al  
2019
- **Colonoscopy Technologies for Diagnostics and Drug Delivery** *Medical Devices & Sensors*  
Ahmed, R., et al  
2019: e10041
- **A Hi-Bi Ultra-Sensitive Surface Plasmon Resonance Fiber Sensor** *IEEE ACCESS*  
Islam, M., Cordeiro, C. B., Sultana, J., Aoni, R., Feng, S., Ahmed, R., Dorraki, M., Dinovitser, A., Ng, B., Abbott, D.  
2019; 7: 79085–94
- **SOI Waveguide-Based Biochemical Sensors** *Computational Photonic Sensors*  
Rifat, A.  
Springer International Publishing AG, part of Springer Nature 2019.2019; M. F. O. Hameed and S. Obayya: 423–448
- **Microstructured Optical Fiber-Based Plasmonic Sensors** *Computational Photonic Sensors*  
Rifat, A.  
Springer International Publishing AG, part of Springer Nature 2019.2019; M. F. O. Hameed and S. Obayya: 203–232
- **Highly amplitude sensitive photonic crystal fiber based plasmonic sensor** *Journal of the Optical Society of America B*  
Haider, F.  
2018; 35 (11): 2816-2821
- **Propagation Controlled Photonic Crystal Fiber Based Plasmonic Sensor via Scaled-Down Approach** *IEEE Sensors Journal*  
Haider, F., Aoni, R., Ahmed, R., et al  
2018
- **Dual-polarized highly sensitive plasmonic sensor in the visible to near-IR spectrum** *Optics Express*  
Islam, M., et al  
2018; 26 (23): 30347-30361
- **Highly amplitude-sensitive photonic-crystal-fiber-based plasmonic sensor** *Journal of the Optical Society of America B*  
Haider, F., Aoni, R., AHMED, R., et al  
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- **Towards large area submicron surface texturing by femtosecond laser irradiation of microparticle arrays** *World Congress on Micro and Nano Manufacturing*  
Romano, J.  
2018
  - **Highly Sensitive Plasmonic Metasensor with Wide Detection Range** *Frontiers in Optics (FIO)*  
Rifat, A., et al
  - **Bio-Inspired Optical Spectroscopy** *Advances in Biophotonics*  
AHMED, R. N., et al  
2018
  - **Morpho butterfly-inspired optical diffraction, diffusion, and bio-chemical sensing** *Morpho butterfly-inspired optical diffraction, diffusion, and bio-chemical sensing*  
AHMED, R. N., et al  
2018; 8 (48): 27111-27118
  - **Bio-inspired optical spectroscopy** *Advance Biophotonics*  
Ahmed, R., et al  
2018
  - **Photonic crystal fiber-based plasmonic biosensor with external sensing approach (vol 12, 012503, 2017)** *JOURNAL OF NANOPHOTONICS*  
Rifat, A. A., Hasan, M., Ahmed, R., Butt, H.  
2018; 12 (1)
  - **Holographic Writing of Ink-Based Phase Conjugate Nanostructures via Laser Ablation** *SCIENTIFIC REPORTS*  
Khalid, M., Ahmed, R., Yetisen, A. K., AlQattan, B., Butt, H.  
2017; 7: 10603
  - **Finite element analysis of nanosecond pulsed laser ablation of various materials** *WORLD JOURNAL OF ENGINEERING*  
Ren, J., Ahmed, R., Butt, H.  
2017; 14 (6): 489–96
  - **Multimode waveguide based directional coupler** *OPTICS COMMUNICATIONS*  
Ahmed, R., Rifat, A. A., Sabouri, A., Al-Qattan, B., Essa, K., Butt, H.  
2016; 370: 183–91
  - **A simple photonic crystal fiber based plasmonic biosensor** *International OSA Network of Students*  
Ahmmmed, R., Ahmed, R., et al  
2016
  - **Computational Modelling of Nanophotonic Optical Devices** *7th Annual BBEAR PGR Conference*  
Ahmed, R., et al  
2016
  - **Circular Stepped-Pyramid based Microlens Array** *EPS Research Conference*  
Ahmed, R.  
2016
  - **Holographic Ink-based optical device** *Photon 16*  
Ahmed, R., et al  
2016
  - **Mode-multiplexed waveguide sensor** *JOURNAL OF ELECTROMAGNETIC WAVES AND APPLICATIONS*  
Ahmed, R., Rifat, A. A., Yetisen, A. K., Yun, S., Khan, S., Butt, H.  
2016; 30 (4): 444–55
  - **Design of Dispersion Manage, Low Confinement Loss and High Nonlinearity Photonic Crystal Fiber for Communication Applications** *The 6th ANU/SEED-Net Regional Conference on Electrical Engineering*  
Ahmmmed, R., et al

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2014

- **Optimum design of a nearly zero ultra-flattened dispersion with lower confinement loss photonic crystal fibers for communication systems** *International Journal of Scientific and Engineering Research*  
Ahmmmed , R., Ahmed, R., et al  
2013; 4 (1)
- **2D Photonic Crystal Power Splitter with Finite-Difference-Time-Domain (FDTD) Method** *Meeting for Young Researcher*  
AHMED, R. N., et al  
2013
- **Design and Simulation of Dual-Concentric-Core Photonic Crystal Fiber for Dispersion Compensation** *CIOMP-OSA Summer Session on Optical Engineering, Design and Manufacturing*  
Ahmmmed, R., Ahmed, R., et al  
2013
- **Design of Ultra-flattened Zero Dispersion Shifted Photonic Crystal Fibers with Lower Confinement Loss for Telecommunication Applications** *CIOMP-OSA Summer Session on Optical Engineering, Design and Manufacturing*  
Ahmed, R., et al  
2013
- **Design, simulation & optimization of 2D photonic crystal power splitter** *Optics and Photonics Journal*  
Ahmed, R., et al  
2013; 3 (02)
- **Design of Large Negative Dispersion and Modal Analysis for Hexagonal, Square, FCC and BCC Photonic Crystal Fibers**  
Ahmmmed, R., Ahmed, R., Razzak, S., IEEE  
IEEE.2013
- **Electrical and dielectric properties analysis of vanadium penta-oxide (V<sub>2</sub>O<sub>5</sub>) doped Ni-Zn ferrite samples** *The Pacific Journal of Science and Technology*  
Ahad, A., Ahmed, R., et al  
2013; 14 (1)
- **DESIGN, IMPLEMENTATION AND PERFORMANCE STUDY OF LOW COST CYLINDRICAL PARABOLIC CONCENTRATOR WITH FLAT HORIZONTAL ABSORBER** *Journal of Electrical Engineering*  
Hossen, M., Ahmed, R., et al  
2013; 13 (1)
- **Design, Analysis and Performance Study of a Hybrid PV-Diesel-Wind System for a Village Gopal Nagar in Comilla** *Global Journal of Science Frontier Research*  
Hoque, M., Bhuiyan, I., Ahmed, R., et al  
2012; 12 (5)
- **Synthesis and Investigation of Microstructure, Resistivity and Dielectric Properties of Vanadium penta-oxide (V<sub>2</sub>O<sub>5</sub>) Doped Ni-Zn Ferrite** *International conference on Electrical, Computer and Telecommunication Engineering*  
Ahad, A., AHMED, R. N., et al  
2012
- **Effect of air fill fraction on modal analysis** *International conference on Electrical, Computer and Telecommunication Engineering*  
Aoni, R., AHMED, R. N., et al  
2012
- **Design & Analysis of Optical Lenses by using 2D Photonic Crystals for Sub-wavelength Focusing** *International Journal of Advance Computer Science and Application*  
Ahmed, R., et al  
2012; 3 (12)
- **A Text Dependent Speaker Recognition using Vector Quantization** *Dhaka Univ. J. Eng. & Tech.*  
Ahmed, R., et al  
2011; 1 (2): 1-6

- **A Proposition for Low Cost Preventive Cardiology for Rural Health Care System in Bangladesh and Design of a Biomedical Data Collection Platform Using a Noninvasive Approach** *Regional Conference On Medical Physics*  
Rab, M., et al  
2011
- **Design & Analysis on Silicon Based Optical Micro-Ring Resonator Sensor Device for Biomedica Application at  $\mu\text{m}$  Wavelength** *CIOMP-OSA international Summer Session, Leaser and Their Applications*  
AHMED, R. N., et al  
2011
- **Low Cost, Noiseless and Patient Safety ECG Amplifier and Filter** *International conference on Medical Physics in Radiation Oncology & Imaging (ICMPROI-2011)*  
Rab, A., et al  
2011: 72
- **On chip si-microring resonator for bio-medical applications at  $\mu\text{m}$  wavelength** *International Conference on Medical Physics in Radiation Oncology & Imaging (ICMPROI-2011)*  
AHMED, R. N., et al  
2011: 73
- **Design & analysis on silicon based optical micro-ring resonator sensor device for biomedical applications at  $\mu\text{m}$  wavelength** *CIOMP-OSA Summer Session: Lasers and Their Applications*  
Ahmed, R., , et al  
2011
- **Effect of Lattice Constant and Air Hole Diameter on the Mode Profile in Triangular and Square Lattice Photonic Crystal Fiber at THz Regime**  
Faruk, M., ul Aftab, M., Ahmed, R., Hussain, B., Islam, M., Alam, S., Ao, S. I., Douglas, C., Grundfest, W. S., Burgstone, J.  
INT ASSOC ENGINEERS-IAENG.2010: 1109-+
- **High Power Transmission by Elliptical Unit Cell Boundary on 2D Single Line Defect Photonic Crystal Waveguide** *International Conference on Fiber Optics & Photonics*  
Ahmed, R., et al  
2010