

YOUNG BASILE



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Practice Areas

Patent

Industries

Quantum Technology

Admissions

U.S. Patent and Trademark
Office

Education

Louisiana State University,
Ph.D., Quantum Optics, 2020

St. Stephen's College,
University of Delhi, B.Sc.,
Physics with Honors

Dr. Siddiqui Matekole is a quantum scientist who works with clients developing quantum technologies, including quantum optics, quantum error correction, and quantum algorithms. Her technical focus also extends to physics, chemistry, and machine learning. She brings more than ten years of research experience in quantum information science, spanning its theoretical and experimental sides.

She joins the firm from the Federal Judicial Center, where she served as a Science and Technology Fellow and focused on generative AI and its impact on minors. Previously, at Riverlane, she improved quantum error correction decoder performance by implementing more detailed noise models and developing informed hypergraph decoders.

As a research associate at Brookhaven National Laboratory, Dr. Siddiqui Matekole developed low-level programming models for optimizing noisy intermediate-scale quantum devices, with a focus on pulse-level control and machine learning assisted quantum error correction.

Publications

E. S. Matekole, S. L. Cuozzo, N. Prajapati, N. Bhusal, H. Lee, I. Novikova, E. E. Mikhailov, J. P. Dowling, and L. Cohen, "Quantum-Limited Squeezed Light Detection with a Camera," *Physical Review Letters* 125, 113602 (2020).

L. Cohen, E. S. Matekole, Y. Sher, D. Istrati, H. S. Eisenberg, and J. P. Dowling, "Thresholded Quantum LIDAR: Exploiting Photon-Number-Resolving Detection," *Physical Review Letters* 123, 203601 (2019).

J. Majaniemi and E. S. Matekole, "Reducing quantum error correction overhead using soft information," *Quantum Science and Technology* 11, 025024 (2026).