CHAITALI JOSHI

B260 Moore Laboratory, California Institute of Technology- Pasadena, CA 91125
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CURRENT POSITION

California Institute of Technology, Pasadena, CA — September 2020- Present
IQIM/AWS Postdoctoral Scholar in Electrical Engineering

EDUCATION

Cornell University, Ithaca, NY — August 2013 - August 2020
Ph.D. in Applied and Engineering Physics — *Advisor: Prof. Alexander Gaeta*
Minor in Applied Mathematics and Computer Science

Indian Institute of Technology Bombay, India — July 2009 - May 2013
B.Tech in Engineering Physics

PUBLICATIONS

Resonance fluorescence of a chiral artificial atom — In review at PRX
C. Joshi*, F. Yang*, M. Mirhosseini
arXiv:2212.11400 (2022)

Strong kinetic-inductance Kerr nonlinearity with titanium nitride nanowires — Editor's suggestion
C. Joshi, W. Chen, H.G. LeDuc, P. K. Day, M. Mirhosseini
Phys. Rev. Applied 18, 064088 (2022)

A quantum electromechanical interface for long-lived phonons — In review
A. Bozkurt, H. Zhao, **C. Joshi**, H.G. LeDuc, P. K. Day, M. Mirhosseini
arXiv:2207.10972 (2022)

Picosecond-resolution single-photon time lens for temporal mode quantum processing — EurekAlert
C. Joshi, B. M. Sparkes, A. Farsi, T. Gerrits, V. Verma, S. Ramelow, S. W. Nam, A. L. Gaeta
Optica 9, 364-373 (2022)

Deep sub-wavelength localization of light and sound in dielectric resonators
A. Bozkurt, **C. Joshi**, M. Mirhosseini
Optics Express 30, 12378-12386 (2022)

Frequency-Domain Quantum Interference with Correlated Photons from an Integrated Microresonator
C. Joshi, A. Farsi, A. Dutt, B.Y. Kim, X. Ji, Y. Zhao, A. Bishop, M. Lipson and A. L. Gaeta
Physical Review Letters 124, 143601 (2020)

Frequency multiplexing for quasi-deterministic heralded single-photon sources
C. Joshi, A. Farsi, S. Clemmen, S. Ramelow, A. L. Gaeta
Nature Communications 9, 847 (2018)

Visible nonlinear photonics via high-order-mode dispersion engineering
Y. Zhao, X. Ji, BY. Kim...**C. Joshi**...M. Lipson, A. L. Gaeta
Optica 7, 135-141 (2020)

Frequency domain boson sampling
C. Joshi, A. Farsi, A. L. Gaeta
Conference on Lasers and Electro-Optics, Optical Society of America, 2017

AWARDS & RECOGNITION

- **IQIM/AWS Postdoctoral Fellowship**, Caltech 2020
- Optical Society of America **Milton Chang Incubic Travel Grant** recipient 2017
- Best Student Poster Award, NSF EFRI-ACQUIRE grantees review meeting 2017
- Optical Society of America **Tinglye Li Innovation Award** finalist 2017
- Recipient of the **Samsung Innovation Award**, an inter-IIT product design challenge 2012
- Recipient of the **Mitacs Globalink Research Fellowship** from the Govt. of Canada for summer research at the University of Toronto 2012
- Awarded the **Kishore Vaigyanic Protsahan Yojana (KVPY) Fellowship** granted to 125 students in the country by the Govt. of India 2008
- Qualified for the **International Astronomy Olympiad** training and selection camp conducted by Tata Insitute of Fundamental Research, India 2007
- Awarded Certificate of Merit for qualifying amongst **top 1**% students nationally in the National Standard Examination in Astronomy **(NSEA)** 2006

INVITED TALKS

- Condensed Matter Physics Seminar, University of Virginia 2021
- Institute of Quantum Information and Matter (IQIM) Seminar, Caltech 2020
- Conference in Lasers and Electro-Optics (CLEO) highlighted talk, Optical Society of America 2020
- Quantum Nanoelectronics Laboratory, University of California Berkeley 2019
- SPIE Photonics West, San Francisco, CA 2019

TECHNICAL SKILLS

Nanofabrication: Electron-beam lithography (Raith EBPG 5000+/5200), Scanning electron microscopy (Thermo Fischer Nova 600), Etching (ICP-RIE, Oxford Instruments System 100), Electron-beam evaporation (Angstrom)
Simulation tools: SONNET EM Suites, COMSOL Multiphysics, Ansys HFSS
Programming Languages: Python, Julia
Hardware: Quantum Machines OPX+, Altera Cyclone FPGA, STEMLab Red Pitaya, Arduino
Software, Libraries, CAD & Development Tools: PyTorch (Machine Learning), QuTip (Quantum Toolbox), QuantumOptics.jl, PhiDl (GDS Layout), Mathematica, Quartus (Verilog HDL for FPGA), Eagle AutoCAD (circuit design), LTSpice (circuit simulation)

TEACHING EXPERIENCE

- *Teaching Assistant*, Introduction to Electricity and Magnetism, Cornell University *Spring 2014*
- *Teaching Assistant*, Statistical Thermodynamics, Cornell University *Fall 2013*
- *Teaching Assistant*, Numerical Analysis and Methods *Spring 2017*

ACADEMIC SERVICE

Reviewer for *Physical Review A*, *New Journal of Physics*, *Optics Letters*, *Optics Express*

References available upon request.