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Assistant Professor

POSTDOC POSITION AT THE *UNIVERSITY OF PENNSYLVANIA*
Department of Materials Science and Engineering

Available immediately a postdoc position in the area of
Nanowire Optics, Photonics and Plasmonics

The project would involve growth and characterization of nanowire structures and heterostructures, light-matter interaction studies in nanoscale optical cavities, one-dimensional polaritonics, development of new optical techniques to probe nanostructures, coupling nanowire waveguides to plasmonic nanocavities, photonic switches and utilizing nanowire photonic structures for cellular studies.

Candidates with PhD in any area of science and engineering can apply. However, people with a strong background in solid state, semiconductors, optics, or photonics related areas will be preferred.

Please contact via email (riteshag@seas.upenn.edu) with a copy of your resume.

A few key references:

- L. K. Van Vugt, B. Piccione, C.H. Cho, P. Nukala and R. Agarwal, "One-Dimensional Polaritons with Size-Tunable and Enhanced Coupling Strengths in Semiconductor Nanowires", *PNAS*, *in press*.
- "L. K. Van Vugt, B. Piccione, and R. Agarwal, "Incorporating polaritonic effects in semiconductor nanowire waveguide dispersion", *Applied Physics Letters*, 97, 061115 (2010)
- B. Piccione, L. K. Van Vugt and R. Agarwal, "Propagation Loss Spectroscopy on Single Nanowire Active Waveguides", *Nano Letters*, 10, 2251 (2010).
- L.K. van Vugt, B. Zhang, B. Piccione, A. Spector and R. Agarwal, "Size-Dependent Waveguide Dispersion in Nanowire Optical Cavities: Slowed Light and Dispersionless Guiding", *Nano Letters* (2009). DOI: 10.1021/nl900371r
- O. Hayden, R. Agarwal and C. M. Lieber, "Nanowire based Avalanche Photodiodes," *Nature Materials*, **5**, 352 (2006). (*cover article*)
- R. Agarwal, C. J. Barrelet and C. M. Lieber, "Lasing Mechanism in Single Cadmium Sulfide Nanowire Optical Cavities," *Nano Lett.* **5**, 917-920 (2005).
- X.Duan, Y. Huang, R. Agarwal, and C.M. Lieber, "Single-Nanowire Electrically Driven Lasers," *Nature* **421**, 241 (2003).