

Ruoxi Yang

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EDUCATION

PHD, ROCHESTER INSTITUTE OF TECHNOLOGY (ROCHESTER, NY) 2012

Dissertation: Subwavelength Surface Plasmons Based on Novel Structures and Metamaterials

Advisor: Zhaolin Lu (Deceased)

Major: Microsystems Engineering

BS, ZHEJIANG UNIVERSITY (HANGZHOU, CHINA) 2006

Major: Optical Engineering

EMPLOYMENT

SR. ENGINEER, SEAGATE TECHNOLOGY (BLOOMINGTON, MN) 2012-NOW

- Far-field light delivery (input coupler, bus waveguide, mode converter) and near-field optical transducer design (integrated metallic device excitation and power propagation) and their optimization for Heat-Assisted Magnetic Recording (HAMR) with FDTD (Lumerical) and FEM (COMSOL).
- Multiphysics (COMSOL) modeling for optical and thermal mechanical evaluation (optical efficiency and head temperature) of integrated HAMR head.
- Theoretical and numerical study of optical head-media interactions (plane-wave expansion, dyadic Green's Function method, COMSOL multiphysics).
- Develop and maintain a JAVA API for COMSOL's geometry generation and optimization of bit-patterned media (BPM) on HAMR platform.

RESEARCH ASSISTANT, RIT (ROCHESTER, NY) 2006-2012

- FDTD Modeling and experimental demonstrations (cleanroom fabrication of SOI-based lightpath and optical bench characterization) of integrated optical devices for optical communication and sensing applications.
- Near-field optics and applications, subwavelength imaging and nano-focusing.
- Dispersion engineering of photonic bandgap structures for optical imaging and waveguiding.

SOFTWARE SKILLS

- Coding: Python, JAVA, Matlab
- Modeling: Lumerical, COMSOL Multiphysics

PATENTS

1. Jones, P., Klemmer, T., Yang, R., Blaber, M., Ma, X., Fan, Z., Stirniman, M., Yang, Y., Yan, X., Huang, F., et al. (2017). Apparatuses and methods for absorbing optical energy. US Patent App. 15/199,668

2. Yang, R. and Scholz, W. (2016). Waveguide of a write head with reduced crosstrack width proximate a near-field transducer. US Patent 9,524,740
3. Yang, R., Asselin, P., Zhao, Y., Wessel, J., Lee, T., Scholz, W., and Stageberg, F. (2016a). Waveguide of a write head with reduced cross sectional area proximate a near-field transducer. US Patent App. 14/886,240
4. Yang, R., Gubbins, M. A., Goggin, A., Hardy, M. J., Garcia, R. F., and Gan, C. H. (2016b). Slot waveguide that couples energy to a near-field transducer. US Patent App. 15/085,162
5. Duda, J. C., Yang, R., and Wessel, J. G. (2016). Bolometer for internal laser power monitoring in heat-assisted magnetic recording device. US Patent App. 15/051,053
6. YANG, R., Wessel, J., Frakie, R., Peng, C., Scholz, W., Rea, C., Jandric, Z., Benakli, M., and Lee, T. (2015). Optical reflectors for use with a near-field transducer. US Patent App. 14/709,705
7. Asselin, P., Yang, R., Wessel, J. G., and Wessel, J. G. (2016). Waveguide core layer with reduced downtrack thickness proximate a near-field transducer. US Patent 9,396,749
8. Lu, Z. and Yang, R. (2013). Methods for three-dimensional nanofocusing of light and systems thereof. US Patent 8,346,039

JOURNAL PUBLICATIONS

1. Yang, R., Jones, P., Klemmer, T., Olson, H., Zhang, D., Perry, T., Scholz, W., Yin, H., Hipwell, R., Thiele, J.-U., Tang, H., and Seigler, M. (2016c). Far-field head-media optical interaction in heat-assisted magnetic recording. *Applied Optics*, 55(6):1241–1248
2. Kiely, J. D., Jones, P. M., Wang, H., Yang, R., Scholz, W., Benakli, M., Brand, J. L., and Gangopadhyay, S. (2014). Media Roughness and Head-Media Spacing in Heat-Assisted Magnetic Recording. *IEEE Transactions on Magnetics*, 50(3):132–136
3. Yang, R. and Lu, Z. (2012). Subwavelength Plasmonic Waveguides and Plasmonic Materials. *International Journal of Optics*, 2012:1–12
4. Yang, R., Huang, X., and Lu, Z. (2012). Arbitrary Super Surface Modes Bounded by Multilayered Metametal. *Micromachines*, 3(4):45–54
5. Yang, R. and Lu, Z. (2011). Silicon-on-Insulator Platform for Integration of 3-D Nanoplasmonic Devices. *IEEE Photonics Technology Letters*, 23(22):1652–1654
6. Zhao, W., Eldaiki, O. M., Yang, R., and Lu, Z. (2010). Deep subwavelength waveguiding and focusing based on designer surface plasmons. *Opt. Express*, 18(20):21498–21503
7. Yang, R., Wahsheh, R. A., Lu, Z., and Abushagur, M. A. (2010). Efficient light coupling between dielectric slot waveguide and plasmonic slot waveguide. *Opt. Lett.*, 35(5):649–651
8. Yang, R., Abushagur, M. A., and Lu, Z. (2008). Efficiently squeezing near infrared light into a 21nm-by-24nm nanospot. *Optics Express*, 16(24):20142