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MAJOR RESEARCH INTERESTS

Neuroengineering
Neural microsystems and discovery
Neural devices and implantable system
Multifunction brain imaging
Brain machine interface and neural prosthesis
Brain and spinal cord injury
Clinical and translational neurosciences
Medical instrumentation

SELECTED PUBLICATIONS

- [1] Letzen BS, Liu C, Thakor NV, Gearhart JD, All AH and Kerr CL, "MicroRNA expression profiling of oligodendrocyte differentiation from human embryonic stem cells", *PLoS ONE*, 2010 May 5;5(5):e10480. <http://www.ncbi.nlm.nih.gov/pubmed/20463920>
- [2] Xiong W, Koenig M, Madhok J, Jia X, Puttgen HA, Thakor NV, and Geocadin RG, "Evolution of somatosensory evoked potentials after cardiac arrest induced hypoxic-ischemic injury," *Resuscitation*, Vol. 81(7):893-897, 2010. Epub 2010 Apr 24. <http://www.ncbi.nlm.nih.gov/pubmed/20418008>
- [3] Choi Y, Koenig MA, Jia X, and Thakor NV, "Quantifying time-varying multiunit neural activity using entropy based measures," *IEEE Tran. Biomed. Eng.*, Vol. 57, pp. 2771 – 2777, 2010. <http://www.ncbi.nlm.nih.gov/pubmed/20460201> doi: [10.1109/TBME.2010.2049266](https://doi.org/10.1109/TBME.2010.2049266)
- [4] Acharya S., Fifer MS, Benz HL, Crone NE, and Thakor NV, "Electrocorticographic amplitude predicts finger positions during slow grasping motions of the hand," *J Neural Eng.*, Vol. 7(4), 2010. doi: [10.1088/1741-2560/7/4/046002](https://doi.org/10.1088/1741-2560/7/4/046002), <http://www.ncbi.nlm.nih.gov/pubmed/20489239>
- [5] Hur E.-M., Yang I. H., Kim D.-H., Byun J., Xu W.-L., Saijilafu S., Nicovich P., Cheong R., Levchenko A., Thakor N. V., Zhou F.-Q., "Inhibition of nonmuscle myosin II promotes axon growth over inhibitory molecules by regulating growth cone dynamics and microtubule structures" *PNAS*, doi:10.1073/pnas.1011258108, pp. 1-6, 2011.
- [6] Li N., Downey J., Bar-Shir A., Gilad A. A., Walczak P., Kim H., Joel S. E., Pekar J. J., Thakor N. V. and Pelled G., "Optogenetically-guided cortical plasticity following nerve injury," *Proc. Natl. Acad. Sci.*, Vol. 108(21):8838-43, May 24, 2011.
- [7] Benz H. L., Zhang H., Bezerianos A., Acharya S., Crone N. E., Zheng X., and Thakor N. V., "Connectivity analysis as a novel approach to motor decoding for prosthesis control," *IEEE Trans. Neural Systems Rehab. Eng.*, 20(2), pp. 143-152, 2012.
- [8] Murari K., Etienne Cummings R., Thakor N. V., Cauwenberghs G, "A CMOS in-pixel CTIA high sensitivity fluorescence imager", *IEEE Trans. Biomed. Circ. and Sys.*, Vol. 5 (5), pp. 449 - 458, Oct 2011. [10.1109/TBCAS.2011.2114660](https://doi.org/10.1109/TBCAS.2011.2114660).

- [9] Hosmane S., Fournier A., Wright R., Rajbhandari L., Siddique R., Yang I. H., Ramesh K. T., Venkatesan A. and Thakor N. V., "Valve-based microfluidic compression platform: single axon injury and regrowth," Lab Chip, 2011, Vol. 11 (22) pp. 3888-3895, 2011.
DOI: 10.1039/C1LC20549H
- [10] Mollazadeh M., Aggarwal V., Davidson A. G., Law A. J., Thakor N. V. and Schieber M. H., "Spatiotemporal variation of multi-modal neural activity in the primary motor cortex during dexterous reach-to-grasp movements," J. Neurosci., Vol. 31(43), pp. 15531-15543, 2011.
- [11] Fifer M. S., Acharya S., Benz H. L., Mollazadeh M., Crone N. E., Thakor N. V. "Toward Electrographic Control of a Dexterous Upper Limb Prosthesis: Building Brain-Machine Interfaces," IEEE Pulse, Vol. 3(1), pp. 38-42, Jan 2012.
- [12] Rege A., Thakor N. V., Rhie K., and Pathak A. P., "*In vivo* laser speckle contrast imaging reveals microvascular remodeling and hemodynamic changes during wound healing angiogenesis," Angiogenesis, Vol. 15(1), pp. 87-98, 2012. PMID: 22198198.
- [13] Rege A*, Senarathna J*, Li N, Thakor N. V., "Anisotropic processing of laser speckle images improves spatiotemporal resolution", IEEE Trans Biomed Engr vol. 59, no. 5, pp. 1272-128, 2012.
- [14] Rege A., Thakor N. V., and Pathak A. P., "Optical imaging of microvascular morphology and perfusion," Current Angiogenesis, Vol. 1, pp. 243-260, 2012.