



Nadkarni Laboratory for Optical Micromechanics and Imaging

Wellman Center for Photomedicine, Harvard Medical School, Massachusetts General Hospital

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Seemantini Nadkarni



Seemantini K. Nadkarni, PhD

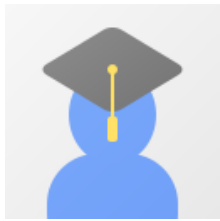
Seemantini is an Associate Professor at Harvard Medical School, and directs her laboratory at the Wellman Center for Photomedicine at Massachusetts General Hospital. She received her PhD in Medical Biophysics from the University of Western Ontario, Canada. Her doctoral research focused on three-dimensional ultrasound approaches with applications in echocardiography and intracoronary imaging. Following her doctoral work, she completed her post-doctoral fellowship as an NSERC scholar at the Wellman Center for Photomedicine, where she continued her research on intracoronary imaging, and focused on exploring optical strategies to evaluate tissue biomechanics and microstructure.

Research Interests

Seemantini Nadkarni's research encompasses both fundamental and translational areas of research, primarily focused on the invention and investigation of novel optical technologies for applications in Hematology, Cardiology, cancer research and in vitro diagnostics. The research initiatives in the Nadkarni lab span the investigation of novel optical methods using multimodal approaches to detect unstable plaque, the development of hand-held optical sensors for whole blood testing at the point-of-care and development of new imaging strategies to quantify the micromechanical properties of the tumor extracellular matrix. In addition, the group is developing optical approaches and endoscopic probes for intra-luminal imaging of soft tissue biomechanics for a variety of clinical applications.

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TITLE	CITED BY	YEAR
Consensus standards for acquisition, measurement, and reporting of intravascular optical coherence tomography studies: a report from the International Working Group for ... GJ Tearney, E Regar, T Akasaka, T Adriaenssens, P Barlis, HG Bezerra, ... Journal of the American College of Cardiology 59 (12), 1058-1072	808	2012
Imaging the subcellular structure of human coronary atherosclerosis using micro-optical coherence tomography L Liu, JA Gardecki, SK Nadkarni, JD Toussaint, Y Yagi, BE Bouma, ... Nature medicine 17 (8), 1010	309	2011
Diagnostic accuracy of optical coherence tomography and integrated backscatter intravascular ultrasound images for tissue characterization of human coronary plaques M Kawasaki, BE Bouma, J Bressner, SL Houser, SK Nadkarni, ... Journal of the American College of Cardiology 48 (1), 81-88	240	2006
Characterization of atherosclerotic plaques by laser speckle imaging SK Nadkarni, BE Bouma, T Helg, R Chan, E Halpern, A Chau, MS Minsky, ... Circulation 112 (6), 885-892	199	2005
Measurement of collagen and smooth muscle cell content in atherosclerotic plaques using polarization-sensitive optical coherence tomography SK Nadkarni, MC Pierce, BH Park, JF de Boer, P Whittaker, BE Bouma, ... Journal of the American College of Cardiology 49 (13), 1474-1481	190	2007
Measurement of fibrous cap thickness in atherosclerotic plaques by spatiotemporal analysis of laser speckle images SK Nadkarni, A Bilenca, BE Bouma, GJ Tearney Journal of Biomedical Optics 11 (2), 021006	149	2006
The influence of optical fiber bundle parameters on the transmission of laser speckle patterns J Wang, SK Nadkarni Optics express 22 (8), 8908-8918	140	2014
OCT-based arterial elastography: robust estimation exploiting tissue biomechanics RC Chan, AH Chau, WC Karl, S Nadkarni, AS Khalil, N Ifimia, M Shishkov, ... Optics Express 12 (19), 4558-4572	97	2004
Intravascular optical imaging technology for investigating the coronary artery MJ Suter, SK Nadkarni, G Weisz, A Tanaka, FA Jaffer, BE Bouma, ... JACC: Cardiovascular Imaging 4 (9), 1022-1039	93	2011

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International Working Group for Intravascular Optical Coherence Tomography (IWGIVOCT). Consensus standards for acquisition, measurement, and reporting of intravascular optical ... GJ Tearney, E Regar, T Akasaka, T Adriaenssens, P Barlis, HG Bezerra, ... J Am Coll Cardiol 59 (12), 1058-72	85	2012
Spectral binning for mitigation of polarization mode dispersion artifacts in catheter-based optical frequency domain imaging M Villiger, EZ Zhang, SK Nadkarni, WY Oh, BJ Vakoc, BE Bouma Optics express 21 (14), 16353-16369	56	2013
Evaluation of collagen in atherosclerotic plaques: the use of two coherent laser-based imaging methods SK Nadkarni, BE Bouma, J de Boer, GJ Tearney Lasers in medical science 24 (3), 439-445	45	2009
Assessing blood coagulation status with laser speckle rheology MM Tripathi, Z Hajjarian, EM Van Cott, SK Nadkarni Biomedical optics express 5 (3), 817-831	40	2014
Artifacts in polarization-sensitive optical coherence tomography caused by polarization mode dispersion M Villiger, EZ Zhang, S Nadkarni, WY Oh, BE Bouma, BJ Vakoc Optics letters 38 (6), 923-925	40	2013
System and method for providing cell specific laser therapy of atherosclerotic plaques by targeting light absorbers in macrophages SK Nadkarni, GJ Tearney, BE Bouma, BJ Vakoc, RR Anderson US Patent App. 11/680,962	40	2007
System and method for providing cell specific laser therapy of atherosclerotic plaques by targeting light absorbers in macrophages SK Nadkarni, GJ Tearney, BE Bouma, BJ Vakoc, RR Anderson US Patent App. 11/680,962	40	2007
System and method for providing cell specific laser therapy of atherosclerotic plaques by targeting light absorbers in macrophages SK Nadkarni, GJ Tearney, BE Bouma, BJ Vakoc, RR Anderson US Patent App. 11/680,962	40	2007
A pulsating coronary vessel phantom for two-and three-dimensional intravascular ultrasound studies SK Nadkarni, H Austin, G Mills, D Boughner, A Fenster Ultrasound in medicine & biology 29 (4), 621-628	37	2003
Evaluating the viscoelastic properties of tissue from laser speckle fluctuations Z Hajjarian, SK Nadkarni Scientific reports 2, 316	35	2012
Laser speckle imaging of atherosclerotic plaques through optical fiber bundles SK Nadkarni, BE Bouma, D Yelin, A Gulati, GJ Tearney Journal of biomedical optics 13 (5), 054016	34	2008