BUMSOO HAN
Professor of Mechanical Engineering and Biomedical Engineering
Purdue University

Education

BS 1993 Mechanical Engineering, Seoul National University, Seoul, Korea
MS 1996 Mechanical Engineering, Seoul National University, Seoul, Korea
PhD 2001 Mechanical Engineering, University of Minnesota, Twin Cities, Minnesota

Professional Experience

Research Associate, 06/2001-07/2004, University of Minnesota, Twin Cities, MN
Assistant Professor, 08/2004-08/2009, University of Texas at Arlington, Arlington, TX
Assistant Professor, 08/2009-08/2011, Purdue University, West Lafayette, IN
Associate Professor, 08/2011-08/2016, Purdue University, West Lafayette, IN
Professor, 08/2016-Present, Purdue University, West Lafayette, IN
Program Leader, 08/2016-Present, Purdue University Center for Cancer Research, West Lafayette, IN

Honors and Awards (selected)

Postdoctoral Traineeship Award, 2003, US Department of Defense
Faculty Early Career Development (CAREER) Award, 2008, National Science Foundation
Richard Skalak Best Paper Award, 2010, ASME Journal of Biomechanical Engineering
B.S.F. Schaefer Outstanding Young Faculty Scholar Award, 2012, Purdue University
Air Force Summer Faculty Fellowship, 2013, US Air Force Office of Scientific Research
Faculty of Excellence Early Career Research Award, 2015, Purdue University
Brain Pool Korea Fellowship, 2015, Ministry of Science, ICT and Planning, Republic of Korea
Discovery in Mechanical Engineering (DME) Award, 2018, Purdue University

PUBLICATIONS (selected)

1. **B. Han**, J. D. Miller, and J. K. Jung, 2009, "Freezing-induced fluid-matrix interaction in poroelastic material," Journal of Biomechanical Engineering, vol. 131, 021002. ***(Selected for Richard Skalak Best Paper Award)***
2. **B. Han**, W. L. Hanson, K. Bensalah, A. Tuncel, J. M. Stern, and J. A. Cadeddu, 2009 "Development of quantum dot-mediated fluorescence thermometry for thermal therapies," Annals of Biomedical Engineering, vol. 37, pp.1230-1239. (***Highlighted on Nanotech News of National Cancer Institute (NCI) Alliance for Nanotechnology in Cancer***)
3. K. Y. Teo, T. O. DeHoyos, J. C. Dutton, F. Grinnell, and **B. Han**, 2011, "Effects of freezing-induced cell-fluid-matrix interactions on the cells and extracellular matrix of engineered tissues," Biomaterials, vol. 32, pp.5380-5390.
4. S. Ghosh, W. L. Hanson, N. Abdollahzadeh, and **B. Han**, 2012, "Effects of light-tissue interaction on quantum dot mediated fluorescence thermometry," Measurement Science and Technology, vol. 23, 045704:1-13. **(*Selected for a special collection, the Highlights of 2011-2012, and its cover image*)**
5. I. K. Kwon, S. C. Lee, **B. Han** and K. Park, 2012, "Analysis on the current status of targeted drug delivery to tumors," Journal of Controlled Release, vol. 164, pp.108-114.
6. B. Kwak, A. Ozcelikkale, C. S. Shin, K. Park, and **B. Han**, 2014, "Simulation of complex transport of nanoparticles around a tumor using tumor-microenvironment-on-chip," Journal of Controlled Release, vol. 194, pp.157-167.
7. J. Varennes, **B. Han**, and A. Mugler, 2016, "Collective chemotaxis through noisy multicellular gradient sensing," Biophysical Journal, vol. 111, pp.640-649.
8. **B. Han**, C. Qu, K. Park, S. F. Konieczny and M. Korc, 2016, "Recapitulation of complex transport and action of drugs at tumor microenvironment using tumor-microenvironment-on-chip," Cancer Letters, vol. 380, pp.319-329.
9. A. Ozcelikkale, K. Shin, V. Noe-Kim, B.E. Elzey, Z. Dong, J-T Zhang, K. Kim, I.C. Kwon, K. Park, and **B. Han**, 2017,"Differential response to doxorubicin in breast cancer subtypes simulated by a microfluidic tumor model," Journal of Controlled Release, vol. 9, pp. 129-139.
10. J. Varennes, S. Fancher, **B. Han**, and A. Mugler, 2017, "Emergent versus individual-based multicellular chemotaxis," Physical Review Letters, vol. 119, 188101.