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Professional Profile

Dr. Pokutta specializes in soft tissue biomechanics, with a particular interest in reproductive and cardiovascular biomechanics. She has a background in both biomedical and mechanical engineering with expertise in laboratory characterization of soft tissue material properties in healthy and diseased human and animal models. Her experience also includes constitutive model development, non-invasive test method development, laboratory models of disease and therapeutic interventions, histological characterization, and advanced imaging techniques, such as multiphoton and confocal imaging.

Prior to joining Exponent, Dr. Pokutta was a Research Engineer in the Wallace H. Coulter Joint Department of Biomedical Engineering at Georgia Institute of Technology and Emory University, where she also taught courses in Biomechanics. She also previously held a research position at the Department of Surgery at Emory University. Dr. Pokutta's industry experience includes working as a project manager in the R&D center of Continental Tire GmbH in Hannover, Germany, where she was responsible for the development of the next generation steer and drive tire pattern for Commercial Vehicle and Truck (CVT) for 2018. Dr. Pokutta has also worked at the production plant of Continental Tire in Kuala Lumpur, Malaysia, where she performed product analysis to reduce production complexity at the Petaling Jaya tire plant.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, Massachusetts Institute of Technology (MIT), 2007

M.S., Mechanical Engineering, Tufts University, 2002

B.Eng., Industrial Engineering, Technical University of Sofia, 1998

MIT Presidential Fellow, MIT Office of the Provost

Lufthansa Award for Excellence in German Studies, 2nd prize, MIT

Research and Graduate Study Fair, 3rd prize, Tufts University

Outstanding Graduate in Industrial Engineering Award, Technical University of Sofia

TEMPUS Fellowship, Delft University of Technology

Prior Experience

Research Engineer II, Georgia Institute of Technology, 2016-2019

Postdoctoral Fellow, Georgia Institute of Technology, 2012-2015

Postdoctoral Fellow, Emory University, 2015-2016

Project Manager, Continental GmbH, Hannover, Germany, 2007 – 2012

Production Analyst, Continental Tire, Kuala Lumpur, Malaysia, 2012

Intern, BMW, Munich, Germany, 2005

Professional Affiliations

American Society of Biomechanics

Society of Automotive Engineers

Languages

German

Bulgarian

Russian

Patents

Pokutta-Paskaleva A, Ankiewicz A, Hoffmann J, Wuest A, Wiese K, Vermehr U, Yi Y, Moh W, Dopheide F-J, "Pneumatic vehicle tire", 9969224, May 15, 2018.

Kleffmann J, Bartke J, Pokutta-Paskaleva A, "Pneumatic vehicle tire", 9902207, February 27, 2018.

Hoffmann J, Wuest A, Ankiewicz A, Tkocz T, Pokutta-Paskaleva A, "Tread profile of a pneumatic vehicle tire with an indicator for regrooving the profile", 9862237, January 9, 2018.

Ankiewicz A, Pokutta-Paskaleva A, Wuest A, Buchinger-Barnstorf T, Rittweger S, Fernandez T, Dobczyk K, "Tread profile of a vehicle tire", 9604507, March 28, 2017.

Pokutta-Paskaleva A, Ankiewicz A, Hoffmann J, Wuest A, Wiese K, Vermehr U, Yi Y, Moh W, Dopheide F-J, "Pneumatic vehicle tire", 20150251500, September 10, 2015.

Ankiewicz A, Pokutta-Paskaleva A, Wuest A, Buchinger-Barnstorf T, Rittweger S, Fernandez T, Dobczyk K, "Tread profile of a vehicle tire", 20150053321, February 26, 2015.

Hoffmann J, Wuest A, Ankiewicz A, Tkocz T, Pokutta-Paskaleva A, "Tread profile of a pneumatic vehicle tire with an indicator for regrooving the profile", 20140290813, October 2, 2014.

Kleffmann J, Bartke J, Pokutta-Paskaleva A, "Pneumatic vehicle tire", 20140110027, April 24, 2014.

Publications

Kirschman J, Pokutta-Paskaleva A, Courtney A, Courtney M. Blast pressures and waveforms of consumer firecrackers. *Shock Waves* 2021, 31:301-306 doi 10.1007/s00193-021-01013-x.

Dong Y, Bazrafshan A, Pokutta-Paskaleva A, Sulejmani F, Sun W, Combs JD, Clarke KC, Salaita K. "Chameleon-inspired strain-accommodating smart skin", *ACS Nano*, 2019.

Clark GL, Pokutta-Paskaleva A, Lawrence DJ, Lindsey SH, Desrosiers L, Knoepp LR, Bayer CL, Gleason RL, Miller KS. "Smooth muscle regional contribution to vaginal wall function", *Journal of Royal Society Interface: Interface Focus*, 9(4), 2019.

Sulejmani F, Pokutta-Paskaleva A, Salazar O, Karimi M, Sun W. "Mechanical and structural analysis of the pulmonary valve in congenital heart defects: A presentation of two case studies", *J Mech Behav Biomed Mater*, 89: 9-12, 2019.

Pokutta-Paskaleva A, Sulejmani F, DelRocini M, Sun W. "Comparative mechanical, morphological, and microstructural characterization of porcine mitral and tricuspid leaflets and chordae tendineae", *Acta Biomater*, 85: 241-252, 2019.

Gleason RL, Yigeremu M, Debebe T, Teklu S, Zewdeneh D, Weiler M, Frank N, Tolentino L, Attia S, Dixon JB, Kwon C, Pokutta-Paskaleva A, Gleason KA. "A safe, low-cost, easy-to-use 3D camera platform to assess risk of obstructed labor due to cephalopelvic disproportion", *PLoS One*, 13(9), 2018.

Sulejmani F, Pokutta-Paskaleva A, Ziganshin B, Leshnowar B, Iannucci G, Elefteriades J, Sun W. "Biomechanical properties of the thoracic aorta in Marfan patients", *Ann Cardiothorac Surg*, 6(6): 610-624, 2017.

Kim CW, Pokutta-Paskaleva A, Kumar S, Timmins LH, Morris AD, Kang D, Dalal S, Chadid T, Kuo KM, Raykin J, Li H, Yanagisawa H, Gleason RL, Jo H, Brewster LP. "Disturbed flow promotes arterial stiffening through thrombospondin-1 (TSP-1)", *Circulation*, 136(13): 1217-1232, 2017.

Kleinhenz JM, Murphy TC, Pokutta-Paskaleva A, Gleason RL, Lyle AN, Taylor WR, Blount MA, Cheng J, Yang Q, Sutliff RL, Hart CM. "Smooth muscle-targeted overexpression of peroxisome proliferator-activated receptor-gamma disrupts vascular wall structure and function", *PLoS One*, 10(10), 2015.

Myers KM, Socrate S, Paskaleva A, House M. "A study of the anisotropy and tension/compression behavior of human cervical tissue", *J Biomech Eng*, 132(2): 021003, 2010.

Myers KM, Paskaleva A, House M, Socrate S. "Mechanical and biochemical properties of human cervical tissue", *Acta Biomaterialia*, 4(1): 104-116, 2008.

Demetriou MA, Paskaleva A, Vayena O, Doumanidis H. "Scanning actuator guidance scheme in a 1-D thermal manufacturing process", *IEEE Transactions on Control Systems Technology*, 11(5): 757-764, 2003.

Presentations

Pokutta-Paskaleva A, Brewster L, Gleason R. "Characterization of the mechanical behavior and microstructural properties of partially ligated common carotid arteries from wild type mice", *World Congress of Biomechanics*, Dublin, Ireland, July 8-12, 2018.

Pokutta-Paskaleva A, Gleason RL, Brewster LP. "Comparison of aging and disturbed flow effects on arterial wall biomechanics". *ATVB|PVD*, Nashville, TN, May 5-7, 2016.

Pokutta-Paskaleva A, Liu D, Chadid T, Gleason R, Brewster L. "Characterization of the mechanical behavior and microstructural properties of partially ligated common carotid arteries from wild type mice". BMES, Tampa, FL, October 7-10, 2015.

Pokutta-Paskaleva A, Li H, Kuo K, Chadid T, Gleason R, Brewster L. "Biomechanical and microstructural characterization of partially ligated common carotid arteries from S129 wild type and fibulin-5 knockout mice". TERMIS World Congress, Boston, MA, September 8-11, 2015.

Paskaleva A, Socrate S. "Biomechanics of cervical function in pregnancy: Case of cervical incompetence". Joint ASCE/ASME/SES Conference on Mechanics and Materials (McMat), Baton Rouge, LA, June 1-3, 2005.

Paskaleva AP, Socrate S, House MD. "Biomechanics of cervical funneling: Case of cervical incompetence". ASME Summer Bioengineering Conference, Vail, CO, June 22-26, 2005.

Paskaleva A, Myers K, House M, Socrate, S. "Biomechanics of cervical insufficiency". First International Conference on Mechanics of Biomaterials & Tissues, Waikoloa, HI, December 11-14, 2005.

Peer Reviewer

Journal of Biomechanics