

Contents

1	Mechanic Adaptability of Metastatic Cells in Colon Cancer	1
	V. Palmieri, D. Lucchetti, M. Papi, F. Calapà, G. Ciasca, A. Sgambato, and M. De Spirito	
2	Nano-Mechanical Response of Red Blood Cells	11
	Massimiliano Papi, Gabriele Ciasca, Valentina Palmieri, Giuseppe Maulucci, Cristina Rossi, Eleonora Minelli, and Marco De Spirito	
3	Scale Dependence of the Mechanical Properties of Interfaces in Crustaceans Thin Films	17
	Devendra Verma, Tao Qu, and Vikas Tomar	
4	Dynamic Analysis of Human Knee	25
	S. Yoshida, U. Tiwari, A. Saladino, M. Nguyen, D. Hollander, B. Boudreaux, and B. Hadley	
5	Viscohyperelastic Calibration in Mechanical Characterization of Soft Matter	33
	E. Ficarella, L. Lamberti, M. Papi, M. De Spirito, and C. Pappalettere	
6	Contact Zone Evaluation of Dental Implants Using Digital Photoelasticity	39
	M.P. Hariprasad and K. Ramesh	
7	Evolution of the Skin Microstructural Organization During a Mechanical Assay	45
	B. Lynch, S. Bancelin, C. Bonod-Bidaud, F. Ruggiero, M.-C. Schanne-Klein, and J.-M. Allain	
8	A Numerical Study of a Biaxial Sollicitation to Set-Up the Displacement Field Measurement of Ex Vivo Mouse Skin	53
	J.-S. Affagard, F. Wijanto, R. Rubio Amador, C. Bonod-Bidaud, F. Ruggiero, and J.-M. Allain	
9	Dynamic Polarization Microscopy for In Situ Measurements of Collagen Fiber Realignment During Impact	61
	Xianyu Wu, Hsiao-Ying Shadow Huang, Mark Pankow, and Kara Peters	
10	Self-Shifting Neutral Axis and Negative Poisson's Ratio in Hierarchical Structured Natural Composites: Bamboo	67
	Shaowen Xu, Aniruddha Mitra, Stephen Miguez, Jacob Mayfield, Michael Shinall, Bessenbacher Derek, Davis Linley, and Spratlin Russell	
11	High-Speed Holography for In-Vivo Measurement of Acoustically Induced Motions of Mammalian Tympanic Membrane	75
	Payam Razavi, Jeffrey Tao Cheng, Cosme Furlong, and John J. Rosowski	
12	Rheology of Soft and Rigid Micro Particles in Curved Microfluidic Channels	83
	Jia Liu, Yuhao Qiang, Michael Mian, Weihe Xu, and E. Du	
13	Microfluidic Approaches for Biomechanics of Red Blood Cells	89
	E. Du	
14	Custom Indentation System for Mechanical Characterization of Soft Matter	95
	Chelsey Simmons, Andres Rubiano, Daniel Stewart, and Brandey Andersen	

15	Experimental Evaluation of Blast Loadings on the Ear and Head with and Without Hearing Protection Devices	101
	Tim J. Walilko, Ryan D. Lowe, Ted F. Argo, G. Doug Meegan, Nathaniel T. Greene, and Daniel J. Tollin	
16	A Mechano-Hydraulic Model of Intracranial Pressure Dynamics	111
	D. Evans, C. Drapaca, and J.P. Cusumano	
17	Regional Variations in the Mechanical Strains of the Human Optic Nerve Head	119
	Dan E. Midgett, Mary E. Pease, Harry A. Quigley, Mohak Patel, Christian Franck, and Thao D. Nguyen	
18	Experimental Electromechanics of Red Blood Cells Using Dielectrophoresis-Based Microfluidics	129
	Yuhao Qiang, Jia Liu, Michael Mian, and E. Du	
19	Microbuckling of Fibrous Matrices Enables Long Range Cell Mechanosensing	135
	Brian Burkel, Ayelet Lesman, Phoebus Rosakis, David A. Tirrell, Guruswami Ravichandran, and Jacob Notbohm	
20	The Growth and Mechanical Properties of Abalone Nacre Mesolayer	143
	Anqi Zhang, Yan Chen, MariAnne Sullivan, and Barton C. Prorok	
21	Evaluation of Precise Optimal Cyclic Strain for Tenogenic Differentiation of MSCs	149
	Yasuyuki Morita, Toshihiro Sato, Sachi Watanabe, and Yang Ju	
22	Effect of Fiber Architecture on the Cell Functions of Electrospun Fiber Membranes	157
	F. Sultana, M. Vaughan, and M. Khandaker	
23	Controlling hESC-CM Cell Morphology on Patterned Substrates Over a Range of Stiffness	161
	Brett N. Napiwocki, Max R. Salick, Randolph S. Ashton, and Wendy C. Crone	
24	Cytoskeletal Perturbing Drugs and Their Effect on Cell Elasticity	169
	Martha E. Grady, Russell J. Composto, and David M. Eckmann	

Mechanics of Biological Systems and Materials, Volume
6

Proceedings of the 2016 Annual Conference on
Experimental and Applied Mechanics

Korach, C.S.; Tekalur, S.A.; Zavattieri, P. (Eds.)

2017, VIII, 177 p. 131 illus., 113 illus. in color.,

Hardcover

ISBN: 978-3-319-41350-1