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### Damir B. Khismatullin

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[NIH-format CV here.](#)

### Education

Bashkir State University, Ufa, Russia. B.S./M.S. 1994 Physics

Bashkir State University, Ufa, Russia. Ph.D. 1998 Physics & Mathematics

### Research Interests

My research activities focus on modeling the mechanical behavior of biological systems at cellular and tissue levels. Specific topics of interest include the biomechanics of leukocytes and other living cells, rheology of blood clots, mucus transport in lung airways, and biomedical applications of gas microbubbles (contrast-enhanced ultrasound imaging, shock-wave lithotripsy, and drug delivery). The main objective of this research is to integrate computational modeling, in vitro and in vivo experiments to improve understanding of the behavior of biological systems under both physiological and pathophysiological conditions.

### Honors and Awards

NSF-NATO Postdoctoral Fellowship in Science and Engineering (2000-2001)

### Selected Publications

R. Georgescu, D.B. Khismatullin, R. G. Holt, J. L. Castagner, O. A'amar, and I. J. Bigio, Design of a system to measure light scattering from individual cells excited by an acoustic wave. *Optics Express*, 16: 3496-3503, 2008.

D.B. Khismatullin, Y. Renardy, and M. Renardy. Development and implementation of VOF-PROST for 3D viscoelastic liquid-liquid simulations. *J. Non-Newtonian Fluid Mech.*, 140: 120-131, 2006.

D.B. Khismatullin and G.A. Truskey. Three-dimensional numerical simulation of receptor-mediated leukocyte adhesion to surfaces: Effects of cell deformability and viscoelasticity. *Phys. Fluids*, 17: 031505, 2005 (21 pages).

D.B. Khismatullin and G.A. Truskey. A 3D numerical study of the effect of channel height on leukocyte deformation and adhesion in parallel-plate flow chambers. *Microvasc. Res.*, 68: 188-202, 2004.

D.B. Khismatullin. Resonance frequency of microbubbles: Effect of viscosity. *J. Acoust. Soc. Am.*, 116 (3): 1463-1473, 2004.

D.B. Khismatullin and A. Nadim. Shape oscillations of a viscoelastic drop. *Phys. Rev. E* 63:

061508, 2001 (10 pages).

D.B. Khismatullin and I.S. Akhatov. Sound-ultrasound interaction in bubbly fluids: Theory and possible applications. *Phys. Fluids*, 13: 3582-3598, 2001.

I.S. Akhatov, N.K. Vakhitova, G.Y. Galeeva, R.I. Nigmatulin, and D.B. Khismatullin, "Weak oscillations of a gas bubble in a spherical volume of compressible liquid," *J. Appl. Maths Mechs*, 61 (6): 921-930, 1997.

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