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Professional Background:

PhD in Chemistry from Lomonosov's Moscow State Academy of Fine Chemical Technology, Moscow, Russia, 1997
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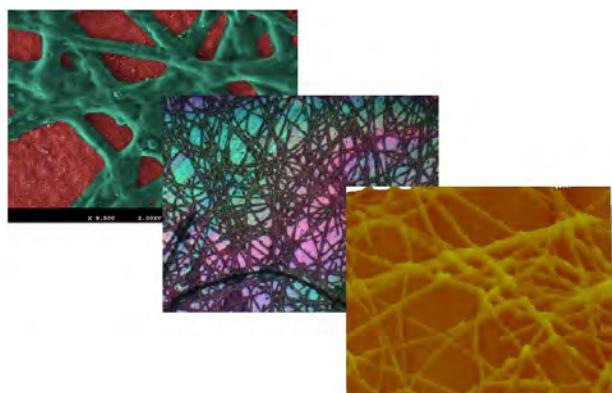
Research Summary:

- Functional nanobio hybrid materials with design of interfacial chemistry
- Stimuli-responsive materials within biological machinery
- Synchrotron X-ray imaging of cellular bioenergetic processes at Nanoscale
- Bio-inspired materials for clean energy production
- Biological Catalysis

Selected Recent Publications:

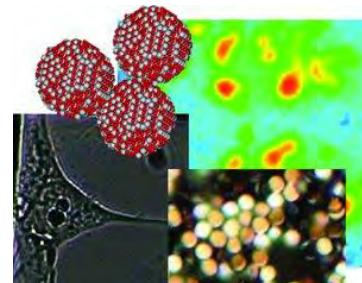
Clean Energy:

D. K. Bora, **E. A. Rozhkova**, K. Schrantz, P. Wyss, A. Braun, T. Graule, E. C. Constable, Functionalization of Nanostructured Hematite Thin Film Electrodes with the Light Harvesting Membrane Protein C-Phycocyanin yields Enhanced Photocurrent; *Advanced Functional Materials*, 22, 490–502, 2012



Stimuli-responsive materials within biological machinery:

E. A. Rozhkova, Nanoscale Materials for Tackling Brain Cancer: Recent Progress and Outlook, *Advanced Materials*, 23, H136–H150 2011



E. A. Rozhkova, I. Ulasov, D.-H. Kim, N. Dimitrijevic, V. Novosad, S. D. Bader, M. S. Lesniak, T. Rajh, Multifunctional nanobiomaterials within cellular machinery, *International Journal of Nanoscience*, 10, No 4-5, 899-908, 2011

D.-H. Kim, P. Karavayev, **E.A. Rozhkova**, J. Pearson, V. Yefremenko, S.D. Bader, V. Novosad, Mechanoresponsive system based on sub-micron chitosan-functionalized ferromagnetic disks, *Journal of Materials Chemistry* 21, 8422-8426 2011

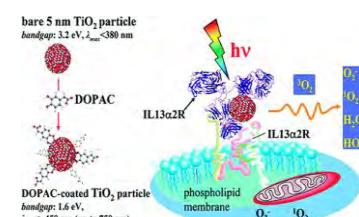
D.-H. Kim, **E. A. Rozhkova***, I. V. Ulasov, S. D. Bader, T. Rajh, M. S. Lesniak & V. Novosad*, Biofunctionalized magnetic-vortex microdisks for targeted cancer-cell destruction, *Nature Materials* 9, 165, 2010



E. A. Rozhkova, V. Novosad, D.-H. Kim, J. Pearson, R. Divan, T. Rajh, S. D. Bader, Ferromagnetic Microdisks as Carriers for Biomedical Applications, *J. Appl. Phys.*, 105, 07B306, 2009.

N. M. Dimitrijevic, **E. A. Rozhkova**, T. Rajh, Dynamics of Localized Charges in Dopamine-Modified TiO₂ and their Effect on the Formation of Reactive Oxygen Species, *J. Am. Chem. Soc.*, 131, 2893, 2009.

E. A. Rozhkova, I. Ulasov, B. Lai, N. M. Dimitrijevic, M. Lesniak, T. Rajh, A High Performance Nano-Bio Photocatalyst for Targeted Brain Cancer Therapy, *Nano Letters* 9, 3337, 2009.



Biological Catalysis:

E. A. Rozhkova; J.-C. Chae; G. J. Zylstra; E. M. Bertrand; M. Alexander-Ozinskas; D. Deng; L. A. Moe; J. B. van Beilen; M. Danahy; J. T. Groves; R. N. Austin. “Profiling Mechanisms of Alkane Hydroxylase Activity in Vivo Using the Diagnostic Substrate Norcarane,” *Chem. Biol.* 2007, 14, 165.

Book Chapters:

V. Novosad and **E. A. Rozhkova**, Ferromagnets-Based Multifunctional Nanoplatforms, Biomedical Engineering, Trends in Materials Science, ISBN 978-953-307-513-6, edited by Anthony N. Laskovski 2011

Rozhkova, E.A., Dimitrijevic, N. Rajh, T Titanium dioxide nanoparticles in advanced imaging and nanotherapeutics. Book Chapter *Biomedical Nanotechnology: Methods and Protocols*. Springer. Humana Press, 2011

Rajh, T. Dimitrijevic, N. M. Elhofy, A., **Rozhkova, E. A.** Biofunctionalized TiO₂ based nanocomposites. *Nanophysics*, Satter, K.D. ed., CRC, *Functional Nanomaterials*, 2010

