

# Nada Dimitrijevic

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## Professional Experience

- **Present.** Physical Chemist at Argonne National Laboratory, working jointly for the Chemical Sciences and Engineering Division and the Center for Nanoscale Materials.

## Education

- Ph.D., Physical Chemistry, Belgrade University, Yugoslavia

## Research Interests

- Synthesis and characterization of colloidal semiconductor nanoparticles
- Focus on
  1. semiconductor assisted photocatalysis and solar fuel production by reducing CO<sub>2</sub> to methane, and
  2. light-induced charge transfer across bio-inorganic interfaces.
- Specific areas include synthesis of nanoscale inorganic materials and bio-inorganic hybrids and their assembly in organized structures to improve efficiency of solar energy conversion and photocatalysis.
- Expertise in *in-situ* electron paramagnetic resonance (EPR) spectroscopic characterization of charge separation and transfer processes in inorganic and bio-inorganic materials.

## Selected Publications

Rozhkova, E. A.; Ulasov, I.; Lai, B.; Dimitrijevic, N. M.; Lesniak, M. S.; and Rajh, T. "A High-Performance Nanobio Photocatalyst for Targeted Brain Cancer Therapy", *Nano Letters* **9**, 3337-3342 (2009)

Tepavcevic, S.; Darling, S. B.; Dimitrijevic, N. M.; Rajh, T.; and Sibener, S. J. "Improved Hybrid Solar Cells via in situ UV Polymerization", *Small* **5**, 1776-1783 (2009)

Dimitrijevic, N. M.; Rozhkova, E.; and Rajh, T. "Dynamics of Localized Charges in Dopamine-Modified TiO<sub>2</sub> and their Effect on the Formation of Reactive Oxygen Species", *J. Am. Chem. Soc.* **131**, 2893-2899 (2009)

Chen, L.; Graham, M. E.; Li, G.; Gentner, D. R.; Dimitrijevic, N. M.; and Gray, K. A. "Photoreduction of CO<sub>2</sub> by TiO<sub>2</sub> Nanocomposites Synthesized through

Reactive Direct Current Magnetron Sputter Deposition”, *Thin Solid Films* **517**, 5641–5645 (2009)

Li, G.; Dimitrijevic, N. M.; Chen, L.; Nichols, J. M.; Rajh, T.; and Gray, K. A. “The Important Role of Tetrahedral  $Ti^{4+}$  Sites in the Phase Transformation and Photocatalytic Activity of  $TiO_2$  Nanocomposites”, *J. Am. Chem. Soc., Commun.* **130**, 5402-5403 (2008)

Li, G.; Ciston, S.; Saponjic, Z. V.; Chen, L.; Dimitrijevic, N. M.; Rajh, T.; and Gray, K. A. “Synthesizing Mixed-Phase  $TiO_2$  Nanocomposites Using a Hydrothermal Method for Photooxidation and Photoreduction Applications”, *J. Catal.* **253**, 105-110 (2008)

Dimitrijevic, N. M.; Saponjic, Z. V.; Rabatic, B. M.; Poluektov, O. G.; and Rajh, T. “Effect of Size and Shape of Nanocrystalline  $TiO_2$  on Photogenerated Charges. An EPR Study”, *J. Phys. Chem. C* **111**, 14597-14601 (2007)

Clarke, S. J., Hollmann, C. A., Zhang, Z., Suffern, D., Bradforth, S. E., Dimitrijevic, N. M., Minarik, W. G., and Nadeau, J. L. “Photophysics of Dopamine-Modified Quantum Dots and Effects on Biological Systems”, *Nature Mater.* **5**, 409-417 (2006)