



Dr. Sanjay Kumar Prabhakar

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Bio

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Dr. Prabhakar is an Assistant Professor of Physics at Northwest Missouri State University and a Visiting Faculty member at the Stanford PULSE Institute. He has taught a variety of undergraduate physics courses at Northwest Missouri State University, including algebra-based physics, calculus-based physics, quantum mechanics, and classical physics.

Dr. Prabhakar is a theoretical physicist whose research focuses on applying ab initio methods, tight-binding models, and continuum modeling to investigate the properties of quantum materials for applications in solid-state quantum computing and materials science. His work combines density functional theory (Quantum ESPRESSO), finite element modeling (COMSOL Multiphysics), and computational tools such as MATLAB and Python to study the electronic structure and quantum properties of low-dimensional materials, quantum dots, and other condensed matter systems.

Recent Publications:

Heavy-hole spin relaxation in quantum dots: Isotropic versus anisotropic effects; D Forbes, S Prabhakar, R De, HS Chakraborty, R Melnik; Physical Review B 110 (4), 045422 (2024)

Influence of random telegraph noise on quantum bit gate operation; J Likens, S Prabhakar, R Lal, R Melnik; Journal of Applied Physics 133 (23) (2023)