

**Hitesh Bindra**  
**Assistant Professor**

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**Professional Affiliations**

- Member                      American Nuclear Society  
                                    American Society of Mechanical Engineers

**Patents**

- Thermal storage for combined cycle power plants, International Patent Application number PCT/US2012/020743 (Inventors- **Hitesh Bindra**, Reuel Shinnar)
- Optimized series-parallel process system for thermal storage and mass transfer applications, International Patent Application number PCT/US2012/020770 (Inventors- **Hitesh Bindra**, Pablo Bueno)

**Publications**

- J. Edwards, H. Bindra, P. Sabharwall. "Exergy analysis of thermal energy storage options with nuclear power plants." *Annals of Nuclear Energy*, 96. (2016)
- D. Gould, E. Schlaikjier, H. Liu, H. Bindra. "Air ingress experiments within high temperature graphite flow channels." *Proceedings of International Conference in Nuclear Engineering, Charlotte, NC, USA.* (Pre-selected Student Competition Award Winner, June 2016)
- D. Gould, H. Liu, H. Bindra. "Thermal effects of material discontinuities and oxidation of graphite matrix in HTGRs." *NURETH-16, Chicago, IL, USA.* (Aug. 2015)
- A. Gairola, H. Bindra, G. Adarwal, S. Singh. "Lattice Boltzmann method for solving time-dependent radiation transport and reactor criticality problems" *ICONE-24, Charlotte, NC, USA.* (June 24 - June 30, 2016)
- D. Franken, J. Edwards, H. Bindra, P. Sabharwall. "Synthetic heat transfer fluids as thermal energy storage media for existing NPPs." *Transactions of American Nuclear Society, New Orleans, LA, USA.* (June 2016)
- S. Dahariya, H. Bindra. "Modeling the effect of evaporative flux and colloidal aggregation on crud deposition." *Transactions of American Nuclear Society, New Orleans, LA, USA.* (June 2016).
- M. Pfeifer, D. Laramore, J. Lindstorm, H. Bindra "A numerical criticality study of colloidal nuclear reactor." *ANS Student conference, Madison, WI, USA.* (Apr. 2016)
- J. Edwards, H. Bindra. "Axial dispersion of temperature front in the packed bed during steam injection." *Applied Thermal Engineering.* (Under Review)
- J. Edwards, D. Franken, H. Bindra, P. Sabharwall "Packed Bed thermal storage for compact Light water-cooled Small Modular Reactors." *Transactions of American Nuclear Society.* (Under Review)
- D. Gould, H. Bindra, S. Das. "Dynamic multicontact thermal response reconstruction using graph-theoretic support vector regression." *International Journal of Heat and Mass Transfer.* (Under Review)
- D. Gould, H. Bindra. "Mixed effects associated with air ingress in graphite channels." *Transactions of American Nuclear Society.* (Under Review)
- A. Gairola, D. Gould, J. Geuther, J. Roberts, H. Bindra "Thermal hydraulics safety analyses of TRIGA reactor upon fuel reconfiguration." *Transactions of American Nuclear Society.* (Under Review)
- H. Bindra, D. Harbottle. "Modeling crud attachment on fuel surfaces -- Role of interaction forces" *Transactions of American Nuclear Society.* (Under Review)
- J. Edwards, D. Gould, H. Bindra. "Steam condensation in packed beds - An experimental study." *NURETH-16, Chicago, IL, USA.* (Aug. 2015)

- R. McCulloch, H. Bindra. "Coupled radiative and conjugate heat transfer in participating media using lattice Boltzmann methods." *Computers & Fluids*. (2015)
- R. Anderson, S. Shiri, H. Bindra, J. F. Morris. "Experimental results and modeling of energy storage and recovery in a packed bed of alumina particles." *Applied Energy* (2014)
- **Hitesh Bindra**, Rizwan-uddin, 'Effect of modeling assumptions on stability domain of BWRs', *Annals of Nuclear Energy*, 67, 2014
- Ryan Anderson, Samira Shiri, **Hitesh Bindra**, Jeffrey F. Morris, 'Experimental results and Modeling of Energy Storage and Recovery in a Packed Bed of Alumina Particles', *Applied Energy*, 119, 2014
- **Hitesh Bindra**, Pablo Bueno, Jeffrey F. Morris, 'Sliding flow method for exergetically efficient packed bed thermal storage', *Applied Thermal Engineering*, 64, 2014
- **Hitesh Bindra**, Pablo Bueno, Jeffrey F. Morris, Reuel Shinnar, 'Thermal analysis and exergy evaluation of packed bed thermal storage systems', *Applied Thermal Engineering*, 52, 2013
- **Hitesh Bindra**, Dhiraj Patil, 'Radiative or neutron transport modeling using lattice Boltzmann equation framework', *Physical Review E*, 86, 2012
- **Hitesh Bindra**, Barclay G. Jones, 'Deposition of metallic colloids under sub-cooled nucleate boiling', *Colloids and Surfaces A: Physicochemical and Engineering aspects*, 397, 2012

#### CONFERENCE PRESENTATIONS

- Richard McCullouch, **Hitesh Bindra**, 'Simulation of radiative porous burner using lattice Boltzmann methods', *International Conference for Mesoscopic Methods in Engineering and Science*, July 2014
- **Hitesh Bindra**, 'Lattice Boltzmann method for Nuclear Reactor Physics', *Transactions of American Nuclear Society*, 109, 2013
- Francesco Valentin, **Hitesh Bindra**, Masahiro Kawaji, 'Natural Circulation in HTGR type system with coolant channels in simplified graphite-fuel matrix', *Transactions of American Nuclear Society*, 109, 2013
- **Hitesh Bindra**, Barclay G. Jones, 'Crud deposition under boiling- Several Hypothesis', *Transactions of American Nuclear Society*, 103, 2010
- **Hitesh Bindra**, Barclay G. Jones, 'Criticality Concept of Uranium based colloidal reactor', *Transactions of American Nuclear Society*, 103, 2010
- **Hitesh Bindra**, Barclay G. Jones, 'Experimental Investigation of Crud Deposition under sub-cooled nucleate boiling', *Proceedings of International Conference of Advances in Power Plants*, 2008, Anaheim, CA
- **Hitesh Bindra**, Barclay G. Jones, 'Bubble Oscillatory Dynamics from Large Cavities', *Transactions of American Nuclear Society*, 98, 2008
- **Hitesh Bindra**, Rizwan-uddin, 'Effect of Modeling on BWR stability using Bifurcation Techniques', *Transactions of American Nuclear Society*, 95, 2006