

Naveen Punati

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PATENT(S)

- SLURRY DISTRIBUTOR, SYSTEM, AND METHOD FOR USING SAME, Inventor(s): James Wittbold, Chris C. Lee, Alfred Li, **Naveen Punati**, Bill Rago, Luis Carrazco, Pub. No. US 2013/0308411 A1

EDUCATION

- Ph.D. degree in Chemical Engineering, University of Utah, Salt Lake City, UT, USA 2011
- B.S. degree in Mechanical Engineering, National Institute of Technology, Warangal, India 2004
- Diploma in Mechanical Engineering, SBTE, Andhra Pradesh, India 2000

EMPLOYMENT HISTORY

- **Senior Researcher, USG Corporate Innovation center, Libertyville, IL** 2012 - Present
 - *Key member of the team designed, developed and implemented a new slurry distribution system for wall board making process. Played a major role in executing the simulation strategy, using ANSYS FLUENT, to accelerate the design process*
 - *Lead light weight Type X Gypsum board project and achieved 20% weight reduction*
- **Research Assistant, University of Utah** 2007-2011
 - *Dissertation: "An Eulerian One Dimensional Turbulence Model: Application to Turbulent and Multiphase Reacting Flows"*
 - *Developed low dimensional Computational Fluid Dynamics tool to simulate turbulent flows*
 - *Performed CFD simulations of Non-Reacting Jets, Non-Premixed Jet Flames, Premixed Jet Flames, Particle Laden Jets and Coal Gasification process*
- **Teaching Assistant, University of Utah, Salt Lake City, UT** Spring 2008 and 2009
- **Visiting Scholar, Sandia National Laboratories, Livermore, CA** Summer 2010
 - *Executed simulations of Syngas jet flame and validated against Direct Numerical Simulation*
 - *Performed sensitivity analysis of the low dimensional model parameters*
- **Programmer Analyst, Cognizant Technology Solutions, Hyderabad, India** 2004-2006
 - *Developed web based solutions for US based insurance firms*
 - *Demonstrated expertise in content management tool and Java based applications*
 - *Completed two SUN certifications*
- **Summer Intern, Maruthi Udyog Limited, India** Summer 2003

RESEARCH INTERESTS

- Building Materials; High Temperature Materials; Modeling and Simulation; Combustion; Multiphase Flows; Heat and Mass Transfer; Non-Newtonian Fluid Mechanics

SKILLS and CERTIFICATIONS

- Programming Languages: C++, JAVA, JSP
- Platforms: Windows, OS X, UNIX

- Certifications: Sun certified Java Professional (SCJP), Sun Certified Java Associate (SCJA), Process Burner Operations
- Mathematical Packages: MATLAB, ANSYS FLUENT

AWARDS

- John Zink Award for outstanding academic achievement in combustion engineering
- Pratibha Scholarship, Andhra Pradesh, India
- Best Student Presentation Award at Technical Symposium, KITS, Warangal, Andhra Pradesh, India
- Winners of State Level Technical Quiz, NIT, Warangal, Andhra Pradesh, India

PUBLICATIONS and PRESENTATIONS

N. Punati, E. R. Hawkes and J. C. Sutherland. *One Dimensional Modeling of Turbulent Premixed Jet Flames: Comparison to DNS*. Proc. Combust. Inst., 35(Submitted), 2014.

N. Punati, J. C. Sutherland, A. R. Kerstein, E. R. Hawkes, and J. H. Chen. *An Evaluation of the One Dimensional Turbulence Model: Comparison with Direct Numerical Simulations of CO/H₂ Jets with Extinction and Reignition*. Proc. Combust. Inst., 33(1):1515–1522, 2011.

J. C. Sutherland, N. Punati, and A. R. Kerstein. *A Unified Approach to the Various Formulations of the One Dimensional Turbulence Model*. Technical Report ICSE091201, Institute for Clean and Secure Energy, The University of Utah, Salt Lake City, UT, 2010.

Naveen Punati, Babak Goshayeshi, and James C. Sutherland. *An Eulerian One Dimensional Turbulence Model: Application to Coal Gasification*. In The 36th International Technical Conference on Clean Coal & Fuel Systems, Clearwater, FL, June 2011.

Naveen Punati, Babak Goshayeshi, and James C. Sutherland. *An Eulerian One Dimensional Turbulence model: Application to Coal Gasification*. In 13th International Conference on Numerical Combustion, Corfu, Greece, April 2011.

Naveen Punati, James C. Sutherland, and Evatt R. Hawkes. *A Study of the Reynolds Number Dependence of Model Parameters in the One Dimensional Turbulence Model*. In 7th US National Combustion Meeting, Atlanta, GA, March 2011.

Naveen Punati and James C. Sutherland. *A Low Dimensional Modeling Approach for Turbulent Particle Laden Flows Background on ODT*. In AIChE Annual Meeting, Salt Lake City, UT, November 2010.

Naveen Punati and James C. Sutherland. *A study of the Reynolds Number dependence of model parameters in the One-Dimensional-Turbulence model*. In Western States Section of the Combustion Institute, Boulder, CO, March 2010.

Naveen Punati, J. C. Sutherland, E. R. Hawkes, A. R. Kerstein, and J. H. Chen. *A Comparison of Direct Numerical Simulations with the One Dimensional Turbulence Model for a Syngas Jet Flame*. In Western States Section of the Combustion Institute, Irvine, CA, October 2009.

Naveen Punati and James C. Sutherland. *Application of an Eulerian One Dimensional Turbulence Model to Simulation of Turbulent Jets*. In 6th US National Combustion Meeting, Ann Arbor, MI, May 2009.

Naveen Punati and J. C. Sutherland. *Designing Simulation Software and Algorithms for Adaptive, Multiscale Simulations*. In AIChE Annual Meeting, Salt Lake City, UT, November 2007.

PROFESSIONAL MEMBERSHIP

- American Institute of Chemical Engineers (AIChE)
- American Society for Testing and Materials (ASTM)

REVIEWER

- Journal of Non-Newtonian Fluid Mechanics (JNNFM)
- International Journal of Hydrogen Energy (IJHE)
- Journal of Turbulence (JOT)
- International Journal of Environment (IJE) – Editorial Board

REFERENCES

Available upon request