

Vitae of Subrata (Sooby) Bhattacharjee, Professor of Mechanical Engineering (Updated: May 3, 2015)

Affiliated Professor of Computer Science and Director of Computational Thermodynamic Laboratory
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Education

- Washington State University, Pullman, Washington, Sep. '83 - May '88.
Ph.D. in Mechanical Engineering
"Two-Way Radiation Coupling in Parabolic Combustion Chamber Flows".
M.S. in Mechanical Engineering
"Experimental Modification of Vortex Interactions in a Reattaching Separated Flow".
- Indian Institute of Technology, Kharagpur, India, Sep. '78 - May '83.
B.Tech. in Mechanical Engineering
G.R.E. scores in percentile: 91(verbal), 99(quant.), 98(subject).

Honors & Awards

- **ASME Fellow**, American Society of Mechanical Engineering, Feb, 2009
- **Outstanding Faculty Award**, College of Engineering, San Diego State University, San Diego, 2013
- **Member of International Advisory Board**, ICERTSD (Int.Conference), India, 7-9 Feb, 2013
- **JSPS Fellowship from Japan**, Fellowship for a 60 day lecture series in multiple universities in Japan. Oct, 2012-Jan, 2013.
- **Outstanding Engineering Educator**, San Diego County Engineering Council, San Diego, 2011
- **Outstanding Faculty Award**, College of Engineering, San Diego State University, San Diego, 2010
- **Best Paper Award**, *Effect of Ambient Conditions on Flame Spread over a Thin PMMA Sheet*, Oct, 2000, JSME, Kobe, Oct. 2000.
- **Dean's Award for Research and Scholarship** (for Matthew Laue, MS student), *A Comparison of Radiation Signature from Spreading Flames in Normal and Zero Gravity* Mar, 2015, SRS, SDSU, 2015.
- **Distinguished Faculty (Montys) Award**, San Diego State University, 1997
- **Outstanding Faculty Award**, Associated Students, San Diego State University, 1993.

- **NRI (Non Resident Indian) Scholar Award**, State of Tripura, India, 2006
- **Nomination for NSF Young Investigator Award**, SDSU (1993). Received highest rating (“Excellent”) from all reviewers. The final panel ranked me with two other nominations as a three-way tie. After internal review at NSF, I was eliminated.
- **Faculty Friend Award**, SAE/ASME Student Chapter, Mechanical Engineering Department, San Diego State University, 1992.
- **Best Outgoing Academician Award**, LLR Hall, IIT, Kharagpur, India, 1983.
- **First Rank** , Higher Secondary (12th Grade) Examinations in the state of Tripura, India, 1978.
- **First Rank** , Secondary Examinations (10th Grade) in the state of Tripura, India, 1976.

Experience

- **Professor**, Mechanical Engineering, San Diego State University, May '00 - present.
- **Adjunct Professor**, Computer Science, San Diego State University, Jan '08 - present.
- **Associate Professor**, Mechanical Engineering, San Diego State University, May '94 - '00.
- **Assistant Professor**, Mechanical Engineering, San Diego State University, Jan. '91 - April '94.
- **Graduate Advisor**, Mechanical Engineering, San Diego State University, May '96 -Jan '98; April '01-06.
- **Post Doctoral Fellow**, NASA, Lewis Research Center and Mississippi State University, May '88 - Dec. '90.
- **Teaching/Research Assistant**, WSU, Pullman, Washington, Sep. '83-May '88.

Dissertation Chaired (PhD)

3. *A Service Oriented Architecture for Thermochemical Computation*, Chris Paolini, July 2007.
2. *Gravitationally Affected Combustion*, Mathew King, 2000.
1. *Forced Opposed Flow Flame Spread Over Flat Solid Fuels in the Thermal, Near Quiescent and Chemical Kinetic Regimes*, Jeffery S. West, 1997.

Theses Chaired (MS in Comp. Sci)

15. *A Flexible Test Interface and Grading Service for an AJAX Based Course Management System*, Yunita, Fall 2012.

14. *An AJAX based Design and Implementation of a Self Motivating System for Student Learning*, Mahesh Kumar Gudiyadolu, Spring 2012.
13. *A Service Oriented Cross-Platform Approach to Perform Thermodynamic Calculations*, Deepa Gopal, Spring 2012.
12. *An Online Forum for Thermodynamic Community*, Siva Krishna Hari, Fall 2011.
11. *An Ajax based Event Calendar for a Course Management System*, Kazi Tulip, Fall 2011.
10. *Friend Finder - A Group Formation Application for a Course Management System*, Sree Vidya Peri, Fall 2011.
9. *A Dynamic Problem Repository for a Course Management System*, Harish Singireddy, Spring 2011.
8. *An Ajax-Based Editor for an Online Repository of Engineering Problems and Solutions*, Shubhangi Khadse, Fall 2010.
7. *An Ajax-Based Wiki-Type Help Delivery System*, Farhana Chowdhuri, Spring 2010 (jointly advised with Dr. Christopher Paolini).
8. *An Ajax-Based Mail User Agent (MUA) for Course Management Systems*, Qibing Chen, Fall 2008 (jointly advised with Dr. Christopher Paolini).
7. *Dynamic Loading of Web-Service Based Applications*, Parth Bhatt, Fall, 2008 (jointly advised with Dr. Christopher Paolini).
6. *A Web-Service Based Spread Sheet for a Course Management System*, Rajan Soni, Spring, 2008 (jointly advised with Dr. Christopher Paolini).
5. *Java Application for Finding Optimum Solution for Thermodynamic Equilibrium*, Prashant Surana, 2007, (jointly advised with Dr. Christopher Paolini).
4. *Ab-Initio Calculations of Thermodynamic Properties through Web Services*, Himen Jain, Spring, 2008 (jointly advised with Dr. Christopher Paolini).
3. *A Service-Oriented Architecture (SOA) Model for Performing Chemical Equilibrium Analysis in a Distributed Framework by Consuming Java-Based Equilibrium Services*, Wing Wah Chan, Fall, 2007 (jointly advised with Dr. Christopher Paolini).
2. *A Framework for Community Computing – Web2 Enabled Unit Converter*, Kalyan Bobba, 2007 (jointly advised with Dr. Christopher Paolini).
1. *A Preliminary Implementation of Thermodynamic Data WebServices*, Brijesh Devalia, 2006.

**Theses Chaired
(MS in Mech. Eng)**

33. *Experimental Study of the Effect of Fuel Thickness in Opposed –Flow Flame Spread Over PMMA*, Matthew Laue, San Diego State University, April, 2015
32. *Flame Spread over solid fuels facing an opposing flow: experimental investigation of the aerodynamic effects on spread rate and extinction*, Luca Carmignani, Univ. of Pisa, Italy, Spring 2015.
31. *Radiation Corrections in Thermocouple Measurements*, Ray Villaraza, Spring 2014.
30. *Measurement of Temperature and CO₂ Fields in a Stabilized Flame*, Wynn Tran, Spring 2014.
29. *Modeling of Flame Spread Over Thin Fuels in Downward Configuration in the Presence of Forced Convection*, Gaurav Patel, Fall 2012.
28. *A Rich Internet Application for Nozzle Flow Structure*, Matthew Smiley, Fall 2012.
27. *A Numerical Study of Interactions of Hydrodynamics, Kinetics, and Radiation*, Rohit Nagarkar, Spring 2012.
26. *Measurement of Flame Temperature in a Spreading Flame*, Abdul Aziz, Spring 2011.
25. *Experimental Approach in Measuring Flame Spread Rate*, Nehal Dalal, Spring 2011.
24. *A Web Service Based Tool for Gas Turbine Simulation with Equilibrium Chemistry*, Crosby Johnson, Spring 2010.
23. *A Web Service Based Tool for Combustion Equilibrium Calculations*, Mark Patterson, Fall 2009.
22. *Correlating Flame Length for Opposed-Flow Flame Spread Over Solid Fuels*, Ameya Udgaonkar, Fall 2008.
21. *An XML Based Testing Framework for Thermodynamic Applications*, Julio Alonso, MSME, Spring, 2008.
20. *An Experimental Approach to Control Buoyancy-Induced Flow in Vertical Flame Spread over Solid Fuels*, Kumar Chittory, 2007.
19. *Further Development of a Novel Fire Extinguishing Device Using Simultaneous Suction and Blowing*, Zaid Karim, 2006
18. *An Experimental Investigation of the Effect of Humidity on Downward Flame Spread*, Etanto H. Wijayanto, 2005

17. *The Coupling of Radiation and Chemical Kinetics in Microgravity Flame Spread*, Chi Kong Phan, 2005
16. *A Comparative Study of Flame Spread over Condensed Fuel Beds in the Thermal and Microgravity Regimes*, Richard Ayala, 2004
15. *Simulation of Flame Spread Over Thin PMMA*, Tuan Ngyuen, 2002
14. *Application of Java Beans to The Expert System of Thermodynamics*, Byron Tang, 2000 (jointly advised with Prof. Roger Whitney of Computer Science)
13. *Refinement of Flame Spread Formula*, Tan Cao, 1999.
12. *Hybrid Two-Color Emission Pyrometry*, William E. Cobb, 1998.
11. *Comparison of DARTFire Experimental Results with Steady State Computations*, Alex Zabacco, 1997.
10. *A Numerical Investigation of Flame Spread Over Cylindrical Solid Fuel*, Regis Worley, 1996.
9. *Downward Flame Spread - Extension of a Simplified Theory*, Matt King, 1996.
8. *A Comparison of Different Methods for Evaluating Radiation Source Term*, Ruian Chao, 1996.
7. *Experimental Investigation of Downward Spreading Flame over Thick and Thin Fuel*, Mathew Bundy, 1995.
6. *A Numerical Investigation of Burning Rates of Spreading and Non-Spreading Flames in Opposed Flow Configuration*, Pete Thomas, 1995.
5. *The Effect of Fuel Thickness on Opposed-Flow Flame Spread Over Solid Fuels*, Maria Hamilton, 1995.
4. *A Numerical Study to Establish the Importance of Hang Distance in Opposed-Flow Flame Spread Phenomenon*, Steve Dockter, 1995.
3. *The Effect of Fuel Pyrolysis on Opposed-Flow Flame Spread*, Bhaskaran Kanakha, 1994
2. *A Complete Parametric Study of Flame Spread Over a Thin Solid Fuel in Opposed-Flow Forced-Convective, Quiescent Environment*, Douglas Seaton, 1994.
1. *A Novel Experiment to Convert A Spreading Flame into a Stationary Flame*, Uwa Kemmler, 1992.

Research Grants

S. Bhattacharjee, Miller, F., C. Paolini, S. Takahashi , K. Wakai, Solid Fuel Ignition and Extinction- Office of Space Science Applications, NASA, \$200,000 (2013-2015).

S. Bhattacharjee, Miller, F., C. Paolini, S. Takahashi , K. Wakai, Residence-Time Driven Flame Spread- Office of Space Science Applications, NASA, \$417,000 (2010-2012).

S. Bhattacharjee, C. Paolini, , CI-TEAM Demonstration Project: CyberCHEQS A Service Oriented CyberInfrastructure (SOCI) for Thermochemical Data and Computation Services- National Science Foundation , Extension grant, \$40,000 (2011-2012).

S. Bhattacharjee, C. Paolini, K. Stewart, M. Thomas, and O. A.. Ezekoye, CI-TEAM Demonstration Project: CyberCHEQS A Service Oriented CyberInfrastructure (SOCI) for Thermochemical Data and Computation Services- National Science Foundation , \$282,000 (2008-2011).

J. Castillo, C. Paolini, K., S.Bhattacharjee MRI: Acquisition of High Speed Network INfrastruture for High Performance Distributed Computation in the Colleges of Sciences and Engineering - National Science Foundation , \$250,000 (2008-2010).

S. Takahashi , K. Wakai, S. Bhattacharjee, *Diluent Effect in Flame Spread over Solid Materials in Microgravity*, Monbusho (Ministry of Education) Grant-in-Aid for International Scientific Research 1,679,000 yen plus 34 drops and 4 flights (2006-2008).

S. Takahashi , K. Wakai, S. Bhattacharjee, *Diluent Effect in Flame Spread over Solid Materials in Microgravity*, Monbusho (Ministry of Education) Grant-in-Aid for International Scientific Research 1,679,000 yen plus 34 drops and 4 flights (2006-2008).

S. Bhattacharjee, K. Wakai, and S. Takahashi, *Dynamics of Flame Spread in Microgravity Environment*, Office of Space Science Applications, NASA, \$450,000. (2000-2004)

:

S. Bhattacharjee, *Thermodynamics - A Problem Solving Approach*, Prentice Hall, \$60,000 (2002-2008).

K. Wakai, S. Bhattacharjee, S. Takahashi, Ground Research for Space Environment Utilization 2000, Japan Space Forum (JSF) , 11,686,500 Yen (2000-2003). Drop Fee for about 80 drops.

K. Wakai, K. Hanamura, S. Bhattacharjee, S. Takahashi, Flame-spread over thin PMMA under micro-gravity condition, Monbusho (Ministry of Education) Grant-in-Aid for International Scientific Research , 2200,000 Yen (199-2001) .

S. Bhattacharjee, Travel Grant for International Programs, San Diego State University, \$2,500 (2001) .

S. Bhattacharjee and R. Whitney, A Java Package for Thermodynamic Properties, Sun Microsystem Academic Equipment Grant, \$55,085 (1997).

R.A. Altenkirch, S.L. Olson, and S. Bhattacharjee, *Low-Velocity, Opposed-Flow Flame Spread in a Transport-Controlled, Microgravity Environment*, Office of Space Science Applications, NASA, SDSU portion of the budget: \$465,000 (1991-1998)

R.A. Altenkirch, S. Bhattacharjee, K. Sacksteder, and M.A. Delichatsios, *Reflight of the Solid Surface Combustion Experiment with Emphasis on Flame Radiation near Extinction*, Office of Space Science Applications, NASA, SDSU portion of the budget: \$200,000 (1994-1999).

S. Bhattacharjee, Color Printers for the DARTFire Project, Sun Microsystem Academic Equipment Grant, \$25,000, (1994) .

S. Bhattacharjee, *Theoretical Support for SSCE project*, Office of Space Science Applications, NASA,: \$125,000 (1992-1996).

S. Bhattacharjee, "Thermodynamics Module of the EInet", DELTA Engineering project, California State University, '94-'96: \$56,000 (1994-1996).

S. Bhattacharjee, *General Purpose Platform for Flame Spread Experiment*, Faculty Grant-in-Aid Award, San Diego State University, \$8000, (1993).

S. Bhattacharjee, "Exchange Program Among SDSU and Gifu University, Japan", Office of International Programs, San Diego State University \$2500 (2001).

S. Bhattacharjee, RSCA grant, San Diego State University \$11,600 (1991-2001).

S. Bhattacharjee, *An Engineering Server*, A proposal to acquire a network-server computer for the college of Engineering, San Diego State University, \$15,000, Mar., (1991).

Patents

2. Bhattacharjee, S., and Paolini, C., *ClassTA - The Classroom Teaching Assistant: An Asynchronous JavaScript Course Management System*, Provisional Patent (2007).
1. Bhattacharjee, S., and Paolini, C., *Automated Gradable Generation and Evaluation (AGGE)* , Provisional Patent (2007).

**Articles in
Refereed Journals**

46. Bhattacharjee, S., Tran, W., Paolini, C., Nakamura, Y., *Experimental Validation of a Correlation Capturing the Boundary Layer Effect on Spread Rate in the Kinetic Regime of Opposed-Flow Flame Spread*. Proceedings of the Combustion Institute, Vol 35, DOI: 10.1016/j.proci.2014.06.125.
45. Bhattacharjee, S., Paolini, C., Tran, W., Villaraza, J. R., *Temperature and CO₂ Fields of a Downward Spreading Flame over Thin Cellulose: A Comparison of Experimental and Computational Results*. Proceedings of the Combustion Institute, Vol 35, DOI: 10.1016/j.proci.2014.05.093.
44. Takahashi, S., Ebisawa, T., Bhattacharjee, Ihara, T., *A Simplified model to predict the difference of flammability limits of a thin material between in normal gravity and in microgravity*. Proceedings of the Combustion Institute, Vol 35, (accepted for presentation and publication).
43. Bhattacharjee, S., Nagarkar, R., Nakamura, Y., *A Correlation for an Effective Flow Velocity for Capturing the Boundary Layer Effect in Opposed-Flow Flame Spread Over Thin Fuels*, Combustion Science and Technology, Vol.186, issue 8 (2014.6), pp.975-987.
42. Bhattacharjee, S., Paolini, C., Patterson, M., *A Web Service Infrastructure and its Application for Distributed Chemical Equilibrium Computation*, Journal of Computer Science and Engineering, 2012, 3(1), p. 19-27..
41. Bhattacharjee, S., Paolini, C., Miller, F., and Nagarkar, R., *Radiation Signature in Opposed-Flow Flame Spread*, Progress in Computational Fluid Dynamics, 12(4), 2012.
40. Bhattacharjee, S., Bundy, M., Patel, G., Paolini, C. and Tran, W., *A Novel Apparatus for Flame Spread Study* Proceedings of the Combustion Institute, Vol 34, 18 June 2012, ISSN 1540-7489, 10.1016/j.proci.2012.05.076.
39. Paolini, C. and Bhattacharjee, *IGE Model: An Extension of the Ideal Gas Model to Include Chemical Composition as Part of the Equilibrium State*, Journal of Thermodynamics, vol. 2012, Article ID 870631, 18 pages, 2012.
38. Bhattacharjee, S., Takahashi, S., Wakai, K., Paolini C., *Correlating Flame Geometry in Opposed Flow Flame Spread over Thin Fuels*, Proceedings of the Combustion Institute, Vol 33, (2010).
37. Paolini C., Bhattacharjee, S., *An Object-Oriented Online Tool for Solving Generalized Chemical Equilibrium Problems*, J. Chem. Edu., 87(4), p. 456, (2010).
36. Takahashi, S., Seki, Y., Ihara, T., Wakai, K., and Bhattacharjee, S., *Effect of Sample Width on Flame Spread Rate over a Thin Material in Microgravity*, Transactions of JSASS, Space Technology Japan Vol. 7, pp. 61-66 (2009).

35. Bhattacharjee, S., Paolini C., *Evaluation of Properties in The Expert System for Thermodynamics ("TEST") Web Application*, Journal of Computer Coupling of Phase Diagrams and Thermochemistry - CALPHAD, 33(2), p 343-352, June (2009).
34. Paolini C., Bhattacharjee, S., *A Web Service Infrastructure for Thermodynamic Data*, Journal of Chemical Inf. Modeling, Vol 48, 1511-1523, (2008).
33. Takahashi, S., Bhattacharjee, S., Ihara, T., and Wakai K., *Effect of Ambient Gas on Flame Spread over a Solid Material in Microgravity*, Japan Society of Microgravity Application, Vol. 24, No. 3, pp.225-230, (2007).
32. Bhattacharjee, S., Ayala, R., Wakai, K., Takahashi, S., *Opposed-Flow Flame Spread in Microgravity – Theoretical Prediction of Spread Rate and Flammability Maps*, Proceedings of the Combustion Institute, Vol 30, (2004).
31. Olson, S.L., Hegde, U., Bhattacharjee, S., Deering, J.L., Tang, L, and Altenrich, R.A., *Diffusive and Radiative Transport Effects on Flame Spread over Thermally Thick Solids in Microgravity*, Combustion Science and Technology, Vol. 176, pp. 557-584, (2004).
30. Bhattacharjee, S., King, M.D., and Paolini, C., *Structure of Downward Spreading Flames: A Comparison of Numerical Simulation, Experimental Results, and a Simplified Parabolic Theory*, Combustion Theory Modeling, Vol. 7, pp. 1-17, (2003).
29. Bhattacharjee, S., Wakai, K., Takahashi, S., *Predictions of a Critical Fuel Thickness for Flame Extinction in a Quiescent Microgravity Environment*, Combustion and Flame, Vol. 132, pp. 523-532, (2003).
28. Takahashi, S., Kondou, M., Wakai, K., A., Bhattacharjee, S., *Effect of Radiation Loss on Flame Spread over a Thin PMMA Sheet in Microgravity*, Proceedings of the Combustion Institute, Vol 29, (2002).
27. Takahashi, S., Nagumo, T., Wakai, K., and Bhattacharjee, S., *Effect of Ambient Conditions on Flame Spread Over a Thin PMMA Sheet*, JSME Int. Journal, Series B, Vol. 43, No. 4., pp. 556-562, (2001).
26. Bhattacharjee, S., King, M., Takahashi, S., Nagumo, T., and Wakai, K., A., *Downward Flame Spread Over PMMA*, Proceedings of the Combustion Institute, Vol. 28, pp. 2891-2897, (2000).
25. Delichatsios, M.,A., Altenkirch, R.A., Bundy, M.F., Bhattacharjee, S., Tang, L., and Sacksteder, K., *Creeping Flame Spread along Fuel Cylinders in Forced and Natural Flows and Microgravity*, Proceedings of the Combustion Institute, Vol. 28, (2000).
24. Bhattacharjee, S., King, M., Cobb, B., Altenkirch, R.A., and Wakai, K., *Approximate Two-Color Pyrometry*, Journal of Heat Transfer, Vol. 122, pp. 15-20, (2000).

23. Altenkirch, R.A, Tang, L., Sacksteder, K., Bhattacharjee, S., and Delichatsios, M.,A., *Inherently Unsteady Flame Spread to Extinction over Thick Fuels in Microgravity*, Twenty-Seventh (International) Symposium on Combustion, The Combustion Institute (1998)
22. West, J., King, M., Bhattacharjee, S., and Altenkirch, R.A., *Heat Transfer Pathways in Flame Spreading Over Thick Fuels as a Function of the Flame Spread Regime: Microgravity, Thermal and Kinetic*, Combustion Science and Technology, Vol. 127, pp 119-140, (1997).
21. West, J., Bhattacharjee, S., Seshadri, K., and Altenkirch, R.A., *Further Application of Damkohler Number Concepts in Opposed-Flow Flame Spread Over Solid Fuels With Extension To Super-Thin Fuels* Second International Symposium on Scale Modeling (ISSM-II), June 23-27, (1997)
20. Bhattacharjee, S., West, J., and Altenkirch, R.A., *Determination of the Spread Rate in Opposed-Flow Flame Spread Over Thick Solid Fuels in the Thermal Regime*, Twenty-Sixth (International) Symposium on Combustion, pp. 1477-1485, The Combustion Institute (1996)
19. West, J., Tang, L., Altenkirch, R.A., Bhattacharjee, S., Sacksteder, K., and Delichatsios, M.A., *Quiescent Flame Spread Over Thick Fuels in Microgravity*, Twenty-Sixth (International) Symposium on Combustion, pp. 1335-1343, The Combustion Institute (1996)
18. Bhattacharjee, S., West, J., and Dockter, S., *A Simplified Theory for de Ris Flame over Thin and Thick Fuels*, Combustion and Flame, 104:66-80 (1996).
17. Bhattacharjee, S., Altenkirch, R.A., and Sacksteder, K., *The Effect of Ambient Pressure on Flame Spread Over Thin Cellulosic Fuels in a Quiescent, Microgravity Environment*, Journal of Heat Transfer, Vol. 118, pp. 181-190 (1996).
16. Ramachandra, P.A., Altenkirch, R.A., Wolverson, M.K., Bhattacharjee S., and Sacksteder, K., *The Behavior of Flames Spreading over Thin Solids in Microgravity*, Combustion and Flame, vol. 100: 71-84 (1995).
15. Bhattacharjee, S., Bhaskaran, K.K., and Altenkirch, R.A., *Effects of Pyrolysis Kinetics on Opposed Flow Flame-spread Modeling*, Combustion Science and Technology, Vol. 100, pp. 163-183, (1994).
14. West, J., Bhattacharjee, S., and Altenkirch, R.A., *Surface Radiative Effects on Flame Spread Over Thermally Thick Fuel in an Opposing-Flow Environment*, J. of Heat Trans., Vol. 116, pp. 646-651, (1994).
13. Bhattacharjee, S., *Comment on a Comparison of Numerical and Analytical Solution of the Creeping Flame Spread Over Thermally Thin Material*, Combustion and Flame, Vol. 95, pp. 340-341, (1993).
12. Bhattacharjee, S., *A Comparison of Numerical and Analytical Solution of the Creeping Flame Spread Over Thermally Thin Material*, Combustion and Flame, Vol. 93, pp. 434-444, (1993).

11. Bullard, D.B., Tang, L., Altenkirch, R.A., and Bhattacharjee S., *Finite-Rate Chemistry in Unsteady Flame Spread Over Solid Fuels in Microgravity*, Adv. Space Research, Vol. 13, No. 7, pp.(7)171-(7)184, (1993).
10. Bhattacharjee, S., Altenkirch, R.A., and Sacksteder, K., *Implications of Spread Rate and Temperature Measurement in Quiescent, Microgravity, Space-Based Environment*, Combustion Science and Technology, Vol. 91, pp. 225-231, (1993).
9. Bhattacharjee, S., and Altenkirch, R.A., *A Comparison of Theory and Experiment in Flame Spread over Thin Condensed Fuel in Quiescent Microgravity Environment*, Twenty-Fourth (International) Symposium on Combustion, Combustion Institute, Pittsburgh, PA, pp. 1669-1676, (1992).
8. West, J., Bhattacharjee, S., and Altenkirch, R.A., *Buoyancy in Flame Spreading: A Comparison of the Role Played by Natural and Forced Convection*, Combustion Science and Technology, Vol. 83, pp. 233-244, (1992).
7. Bhattacharjee, S., and Altenkirch, R.A., Olson, S.L., and Sotos, R.G., *Heat Transfer to Thin Solid Combustibles at Zero-Gravity*, Journal of Heat Transfer, Vol. 113, pp. 670-676, (1991).
6. Bhattacharjee, S., and Altenkirch, R.A., *The Effect of Surface Radiation on Flame Spread in a Quiescent Microgravity Environment*, Combustion and Flame, Vol. 84, pp. 160-169 (1991).
5. Bhattacharjee, S., and Altenkirch, R.A., *Radiatively Controlled Flame Spread*, Twenty-Third (International) Symposium on Combustion, pp. 1627-1633, The Combustion Institute, Pittsburgh, (1990).
4. Bhattacharjee, S., Altenkirch, R.A., Srikantaiah, N., and Vedha-Nayagam, M., *A Theoretical Description of Flame Spreading Over Solid Combustibles at Zero-Gravity*, Combustion Science and Technology, Vol. 69, pp. 1-15, (1990).
3. Bhattacharjee, S., and Grosshandler, W.L., *A Simplified Model for Computing Radiative Source Term in Parabolic Flows*. International Journal of Heat and Mass Transfer, Vol. 33, pp. 507-516 (1990).
2. Bhattacharjee, S., and Grosshandler, W.L., *Effect of Radiative Heat Transfer on Combustion Chamber Flows*. Combustion and Flame, pp. 347-357, Vol. 24, Sept.(1989).
1. Bhattacharjee, S., Scheelke, B., and Troutt, T.R., *Modification of Vortex Interaction in a Reattaching Separated Flow*, AIAA Journal, pp. 623-629, Vol. 24, April (1986).

Software

ClassTA: A web-service based course management system that can do everything that the legacy applications such as Blackboard does, plus provides some unique features – a discussion blog, a hybrid quiz builder that fuses the ease of online quizzes with the security of proctored examination. ClassTA can also be used for online collaboration among researchers. It is accessible freely from www.classta.net.

TEST (version 10.0): A webware for thermo fluids related courses, www.thermofluids.net. As of October, 2008, the site has 17,000 registered users, more than 1200 of whom are educators at universities around the world. TEST is mirrored in many different countries and has been translated to Spanish and Japanese.

Books and Chapters

The Expert System for Thermodynamics - A Visual Tour by S. Bhattacharjee, Prentice Hall, 2002, ISBN 0-13-009235-5, (268 Pages).

Thermodynamics - An Interactive Approach–Pearson, Dec 2014 (700 pages).

Articles in Refereed Proceedings

Bhattacharjee, S., Aslihan, S., McGrath, K., Olson, S.L, Ferkul, P.V., *The Critical Flow Velocity for Radiative Extinction in Opposed-Flow Flame Spread in a Microgravity Environment: A Comparison of Experimental, Computational, and Theoretical Results*, 9th Mediterranean Combustion Symposium, Rhodes, Greece, 7-11 June, 2015.

Olson, S.L, Ferkul, P.V., Bhattacharjee, S., Miller, F.J., Fernandez-Pello, C.F., Link, S., and T'ien, J.S. *Results from on-board CSA-CP and CDM Sensor Readings during the Burning and Suppression of Solids – II (BASS-II) Experiment in the Microgravity Science Glovebox (MSG)* 45th International Conference on Environmental Systems, Bellevue, Washington, July 12-16, 2015.

Olson, S.L, Ferkul, P.V., Bhattacharjee, S., Miller, F.J., Fernandez-Pello, C.F., Link, S., and T'ien, J.S. *Results from on-board CSA-CP and CDM Sensor Readings during the Burning and Suppression of Solids – II (BASS-II) Experiment in the Microgravity Science Glovebox (MSG)* 45th International Conference on Environmental Systems, Bellevue, Washington, July 12-16, 2015.

Carmignani, L, Celniker, G., Busset, K, Paolini, C., and Bhattacharjee, S., *Two Different Approaches for Creating a Prescribed Opposed-Flow Field for Flame Spread Experiments* Experimental Fluid Mechanics Conference, http://epjwoc.epj.org/index.php?option=com_issues&lang=en, Czech Republic, Nov 18-21, 2014.

Bhattacharjee, S., Villaraza, J.R., Nakamura, Y., Use of an Effective Flow Velocity to Improve Damkohler Number Correlation in the Kinetic Regime of Opposed-Flow Flame Spread, Paper #070FR-0188, 7th International Symposium on Scale Modeling (ISSM-7), Aug 6-9, Hirosaki, Japan, 2013..

Bhattacharjee, S., Bundy, M., Patel, G., Paolini, C. and Tran, W., *A Novel Apparatus for Flame Spread Study* 34th International Symposium on Combustion, Warsaw, Poland, July 28-Aug 4, 2012.

Bhattacharjee, S., Bundy, M., Patel, G., Paolini, C. and Tran, W., *A Novel Apparatus for Flame Spread Study* 34th International Symposium on Combustion, Warsaw, Poland, July 28-Aug 4, 2012.

Bhattacharjee, S., Paolini, C., and Kumar, M, *A Learning Outcome Driven Cyber Infrastructure for Thermodynamics Education*, Paper #127, First XSEDE Conference, Chicago, July 16-20, 2012.

Bhattacharjee, S., Paolini, C., Miller, F., and Nagarkar, R., *Radiation Signature in Microgravity Flame Spread*, Paper #326, Seventh International Conference on Computational Heat and Mass Transfer (ICCHMT), Istanbul, Turkey, July 18-22, 2011.

Johnson, C., Paolini, C. and Bhattacharjee, S., *Design of a Rich Internet Application for Gas Turbine Engine Simulations*, ASME Turbo Expo, June 6-10, 2011, Vancouver, Canada.

Bhattacharjee, S., Agrawal, A., Paolini, C., Takahashi, S., and Wakai, K., *Opposed-Flow Flame Spread and Extinction in a Microgravity Environment*, Eighth Asia Pacific Conference on Combustion (ASPACC-10), Hyderabad, India, December 10-13, 2010.

Takahashi, S., Nagata, T., Bhattacharjee, S., Ihara, T., and Wakai, K., *Extinction limit of flame spread over a solid material under microgravity condition*, JSME Thermal Engineering conference, (Nagaoka), Oct. 30-31, 2010 (in Japanese).

Paolini, C. and Bhattacharjee, S., *The IGE Model: An Extension of the Ideal Gas Model to Include Chemical Composition as Part of the Equilibrium State*, Proceedings of the 2010 ASME International Mechanical Engineering Congress and Exposition IMECE 2010, Vancouver, Canada, November 12-18, 2010.

Patterson, M., Paolini, C., and Bhattacharjee, S., *Design and Implementation of a Rich Internet Application (RIA) for the Simulation of a Combustion Chamber*, ASEE Conference and Exposition, Louisville, June 20-23, (2010).

Paolini, C., Bhattacharjee, S., Takahashi, S. and Wakai, K., *Correlating Flame Geometry in Opposed Flow Flame Spread over Thin Fuels Using Scale Analysis and Numerical Solution*, Sixth International Symposium on Scale Modeling (ISSM-6), Kauai, Hawaii, September 13-16, 2009.

Paolini, C. P., Jain, H. B., and Bhattacharjee, S., *Integration of Thermodynamic Properties from Different Databases with Data Derived from DFT and Ab-Initio Methods, and their Delivery through Web Services*, Seventeenth Symposium on Thermophysical Properties, Boulder, CO, paper #513, June 21-26 (2009).

Bhattacharjee, S. and Paolini, C. P., *The Chemical Thermodynamic Module of The Expert System for Thermodynamics ("TEST") Web Application*, ASEE Annual Conference & Exposition, Austin, TX. June 14-17, 2009,).

A Web Service Infrastructure for Distributed Chemical Equilibrium Computation, Paolini, C. P. and Bhattacharjee, S., Proceedings of the 6th International Conference on Computational Heat and Mass Transfer (ICCHMT), Guangzhou, China, p. 413-418, May 18-21, 2009,.

An Object-Oriented Online Tool for Solving Generalized Chemical Equilibrium Problems, Paolini, C. P. and Bhattacharjee, S., Proceedings of the 2008 ASME International Mechanical Engineering Congress and Exposition IMECE08, October 31 - November 6, 2008, Boston, Massachusetts, USA.

Opposed-flow flame spread over thin films of PMMA in a microgravity environment - a comparison of experimental results with computational and theoretical prediction, Bhattacharjee, S., Paolini C., Wakai, K., Takahashi, Fourth Access for Outreach, SDSU, March 12, 2008.

A Java Based Web Application for Performing Chemical Equilibrium Analysis in Thermodynamics Courses, Paolini C., Bobba, K, Surana, P, and Bhattacharjee, S., 36th ASEE/IEEE Frontiers in Education Conference, October 28 - 31, 2006, San Diego, CA..

A Java Based Web Application for Performing Chemical Equilibrium Analysis, Paolini, C., Bhattacharjee, S., Third Access for Outreach, SDSU, March 2, 2006.

A Java Based Web Application for Performing Chemical Equilibrium Analysis, Paolini, C., Bhattacharjee, S., Third Access for Outreach, SDSU, March 2, 2006.

Effect of Ambient Gas on Flame Spread over a Solid Material in Microgravity, Takahashi, S., Wakai, K., and Bhattacharjee, S., 8th International Workshop on Short-Term Experiments under Reduced Gravity Conditions, Oct. 30-Nov. 1, 2006, Toki, Japan.

Effect of External Factor on Flame Spread over Solid Fuel at Microgravity, Kondo, D., Takahashi, S., Wakai, K., and Bhattacharjee, S., JSME Thermal Engineering Conference, No. 05 - 17, p. 209, Nov. 2005, Gifu, Japan.

Transition between Concurrent and Opposed-Flow Flame Spread over Thin Films of PMMA in a Microgravity Environment, Takahashi, S., Wakai, K., Paolini, C., and Bhattacharjee, S., JSME Thermal Engineering Conference, No. 05 - 17, p. 211, Nov. 2005, Gifu, Japan.

A Numerical Investigation of Flame Geometry in Opposed Flow Flame Spread Over Thin Fuels, Paolini, C., Udgaonkar, A., Bhattacharjee, S., Takahashi, S., and Wakai, K., 5th Asia-Pacific Conference on Combustion, The Univ. of Adeliaide, Australia, 17-20 July, 2005.

Opposed-Flow Flame Spread Over Thin Films of PMMA in a Microgravity Environment – Comparison of Computational, Theoretical, and Experimental Results, Bhattacharjee, S., Paolini, C., Phi, C., Wakai, K., and Takahashi, S., 4th Int. Conference on Heat Transfer, Fluid Mechanics, and Thermodynamics, Cairo, Egypt, Paper No. BS3, Oct. 2005.

An object oriented formulation for unsteady 3d heat transfer. Christopher Paolini, Kyoung H. Yeo, and Subrata Bhattacharjee. Proceedings of CHT-04 ICHMT International Symposium on Advances in Computational Heat Transfer, April 2004.

TEST-The Expert System for Thermodynamics, S. Bhattacharjee, Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition, Nashville, TN, June 22-25, 2003.

A Time-Scale Analysis of Opposed-Flow Flame Spread, S. Bhattacharjee, 4th Int. Symp. On Scale Modeling (ISSM-IV), Cleveland, Sept. 17-19, 2003.

A Formula for Flame Spread Rate Over Thin Fuels in a Low Velocity Opposed-Flow Microgravity Environment, Bhattacharjee, S., Wakai, K., and Takahashi, S., 6th ASME/JSME Thermal Engineering Proceedings, Kona, Hawaii, March 16-20, 2003.

Time Scale Analysis for Opposed-Flow Flame Spread - The Foundations, Bhattacharjee, S., The Third Asia-Pacific Conference on Combustion, June 24-27, 2001, Seoul, Korea

Effect of Ambient Conditions on Flame Spread over a Thin PMMA Sheet, Takahashi, S., Nagumo, T., Wakai, K., and Bhattacharjee, S., JSME/KSME Thermal Engineering Proceedings Kobe, Japan, October 2-5, 2000. (**Best Paper Award**)

Determination of Spread Rate in Downward Flame Spread over Thick Fuels, King, M, Bhattacharjee, S., ASME/JSME Thermal Engineering Proceedings San Diego, California, March 15-19, 1999.

Two-Dimensional Temperature Distribution of Flames by Absorption CT Employing CO₂ (Experimental Study on the Wave Number Employed and the Accuracy of Measurement), Wakai, K., Moroto, M., Takahashi, S., and Bhattacharjee, S., ASME/JSME Thermal Engineering Proceedings San Diego, California, March 15-19, 1999.

Further Application of Damkohler Number Concepts in Opposed-Flow Flame Spread Over Solid Fuels With Extension To Super-Thin Fuels, West, J., Bhattacharjee, S., Seshadri, K., and Altenkirch, R.A., Second International Symposium on Scale Modeling (ISSM-II), Lexington, Kentucky, USA, June 23-27, 1997.

A Simplified Theory for de Ris Flame over Thin and Thick Fuels, Bhattacharjee, S., West, J., and Dockter, S., CHEMCON-94, Kharagpur, India, Dec. 10-16, (1994).

Low Reynolds Number Flow Near the Leading Edge of a Burning and Non-Burning Plate in a Microgravity Environment, J. West, S. Bhattacharjee, B. Ramirez, P. Thomas, and R. Altenkirch, HTD-Vol. 271, pp. 29-36, 6th ASME/AIAA Thermophysics and Heat Transfer Conference, June 20-23, (1994).

Modeling Gas-Phase Radiation from Laminar Flame Spreading Over Solids, S. Bhattacharjee, T. L. Charles, and R.A. Altenkirch ASME Winter Annual Meeting, 93-WA/HT-19, Nov. 28-Dec 3, (1993).

The Effects of Ambient Pressure on Flame-spread Over a Thin Cellulosic Fuel in a Quiescent, Microgravity Environment: Theory and Experiment, S. Bhattacharjee, R.A. Altenkirch, and K. Sacksteder, ASME Winter Annual Meeting, 93-WA/HT-20, Nov. 28-Dec 3, (1993).

Effects of Pyrolysis Kinetics on Opposed Flow Flame-spread Modeling, S. Bhattacharjee, K.K. Bhaskaran, and R.A. Altenkirch, ASME/AIChE National Heat Transfer Conference and Exposition, HTD-Vol. 199, August 8-12, San Diego, (1992).

Surface Radiative Effects on Flame Spread Over Thermally Thick Fuel in an Opposing-Flow Environment, J.S. West., S. Bhattacharjee, and R.A. Altenkirch, ASME/AIChE National Heat Transfer Conference and Exposition, HTD-Vol. 199 August 8-12, San Diego, (1992).

Opposed-Flow Flame Spread in Normal, Enhanced and Reduced Gravity, R.A. Altenkirch, S. Bhattacharjee, S.L. Olson, and J.S. West, IKI/AIAA Microgravity Science Symposium, Moscow, USSR, May 12-21, (1991).

The Formation of a Wall Jet Near a High Temperature Wall Under Microgravity Environment, S. Bhattacharjee and W.L. Grosshandler, 25th National Heat Transfer Conference, HTD-Vol.96, Houston, Texas (1988).

A Simplified Model for Computing Radiative Source Term in Parabolic Flows. S. Bhattacharjee and W.L. Grosshandler, 24th National Heat Transfer Conference, HTD-Vol. 72, Pittsburgh, (1987).

Modification of Vortex Interaction in a Reattaching Separated Flow. S. Bhattacharjee, and T.R. Troutt, AIAA Shear Flow Conference, Paper 85-0555, Boulder, Colorado, (1985).

Presentation in Technical Meetings

A.Simsek, S.Bhattacharjee, "Effect of Boundary Layer on Blow-off Extinction in Opposed-Flow Flame Spread: A computational Study", 9th SoCal Fluids Symposium, San Diego State University, San Diego, April, 18, 2015.

Laue, M, Ivisich, I., and Bhattacharjee, S., *A Comparison of Radiation Signature from Spreading Flames in Normal and Zero Gravity Environment* 8th Annual Student Research Symposium , SDSU, San Diego, March 6-7, 2015.

Bhattacharjee, S., Carmignani, L., Bussett, K., and Celniker, G., The Effect of Boundary Layer on Blow-Off Extinction: Experiments and Simplified Analysis , 7th International Symposium for Physical Sciences in Space, ASGSR, Oct 22-26, Pasadena, 2014.

Bhattacharjee, S., Nadertaber, A., McGrath, K., and Ivisic, I, Steady Spread and Radiative Extinction in Opposed-Flow Flame Spread over Thin PMMA in a Microgravity Environment: Results from BASS-II Experiments, 7th International Symposium for Physical Sciences in Space, ASGSR, Oct 22-26, Pasadena, 2014.

Ferkul, P., Olson, S., Bhattacharjee, S., Fernandez-Pello, C., Miller, F, and Tien, J, Combustion of solids in Microgravity: Results from the BASS-II Experiments, 7th International Symposium for Physical Sciences in Space, ASGSR, Oct 22-26, Pasadena, 2014.

Villaraza, J.R., Carmignani, L, Bhattacharjee, S., Role of Gas Radiation in the Mechanism of Opposed-Flow Flame Spread in a Microgravity Environment, Paper #087EF-0047, WSS Technical Meeting of the Combustion Institute, Cal Tech., Pasadena, CA, Mar 24-25, 2014.

Tran, W., Bhattacharjee, S., Olson, S., Patel, G., Romero, N., Flame Spread over PMMA Films in Normal and Microgravity Environments, Paper #084EF-0046, WSS Technical Meeting of the Combustion Institute, CSU, Fort Collins, CO, Oct 7-8, 2013.

Paolini, C., Bhattacharjee, S., Tran, W., Naib, F., and Miller, F., Flame Tower: A Novel Apparatus to Study Flame Spread at Low Concurrent or Opposed Flow Velocity, Paper #070FR-0141, 8th National Combustion Meeting, May 19-22, Park City, Utah, 2013.

Bhattacharjee, S., Tran, W., Laue, M., Paolini, C., and Nakamura, Y., Boundary Layer Effect on the Correlation of Spread Rate Data in Opposed Flow Flame Spread, Paper #070FR-0188, 8th National Combustion Meeting, May 19-22, Park City, Utah, 2013.

Bhattacharjee, S., Scale Modeling of Microgravity Flames, 50th Symposium (Japanese) of Combustion, Dec 5-7, Nagoya, Japan, 2012.

Paolini, C. and Bhattacharjee, S., Wind Opposed and Wind Aided Flame Spread in a Vertical Flame Tower, 5th International Symposium for Physical Sciences in Space, ASGSR, Nov 28 – Dec 2, New Orleans, 2012.

Bhattacharjee, S., Paolini, C. (presenter), Tran, W., Widok, J., Brown, C., Wind Opposed and Wind Aided Flame Spread in a Vertical Flame Tower, American Society for Gravitational & Space Research, 28th Annual Meeting, New Orleans, Louisiana, November 28-December 2, 2012.

Tran, W., Bhattacharjee, S., Paolini, C., Measurement of Flame Temperature, Third Access for Outreach, SDSU, March 15, 2012.

Bhattacharjee, S., Tran, W., Miller, F., and Paolini, C. Measurement of Temperature Field in a Stabilized Downward Spreading Flame, Paper #12S-07, WSS Technical Meeting of the Combustion Institute, March 19-20, ASU, 2012.

Bhattacharjee, S., Tran, W., Miller, F., and Paolini, C. Measurement of Temperature Field in a Stabilized Downward Spreading Flame, Paper #12S-07, WSS Technical Meeting of the Combustion Institute, March 19-20, ASU, 2012.

Paolini, C., and Bhattacharjee, S., An Equilibrium Approach to Modeling O₂-H₂ Combustion Kinetics, Paper #12S-36, WSS Technical Meeting of the Combustion Institute, March 19-20, ASU, 2012.

Bhattacharjee, S., Nagata, T., Patel, G., Dalal, N., and Tran, W., A Novel Flame Spread Apparatus for Stabilizing a Spreading Flame by Controlling Fuel Motion, Paper #11F-57, WSS Technical Meeting of the Combustion Institute, October 16-18, UCR, 2011.

Paolini, C., Tran, W., Parker, M., Miller, F., and Bhattacharjee, S., A Remote Controlled Automated Experimental Apparatus for Real-Time Flame Spread Measurement, Paper #11F-68, WSS Technical Meeting of the Combustion Institute, October 16-18, UCR, 2011.

A Web Based Equilibrium Analysis Tool and its Application to Simulate a Combustion Chamber, Bhattacharjee, S., Paolini, C., and Patterson M., and Bhattacharjee, S.,. Poster presentation, 33rd International Symposium on Combustion, Beijing, Aug 1-9, 2010.

Correlating Flame Size in Opposed-Flow Flame Spread, Paolini, C., Udgaonkar, A., and Bhattacharjee, S.,. Second Access for Outreach, SDSU, March 15, 2005.

Flammability Map for Microgravity Flame Spread, Bhattacharjee, S., Paolini, C., Wakai, K., and and Takahashi, S.,. Strategic Research to Enable NASA's Exploration Missions Conference, NASA/TM-2004-213114, June, 2004.

Extending de Ris Formula to Microgravity Regime, Bhattacharjee, S.,. WSS Technical Meeting of the Combustion Institute, October 22-23, UCLA, 2003.

An Object Oriented Formulation for the Finite Volume SIMPLER Algorithm, Paolini, C., Yeo, K.H., and Bhattacharjee, S.,. WSS Technical Meeting of the Combustion Institute, October 22-23, UCLA, 2003.

Extinction criteria for Opposed-Flow Flame Spread in a microgravity Environment, Bhattacharjee, S., Paolini, C., Wakai, K., and and Takahashi, S.,. Seventh International Microgravity Combustion Workshop, NASA/CP-2003-208917, Cleveland, Ohio, May, 2003.

Opposed-Flow Flame Spread - The Quiescent Microgravity Limit, Bhattacharjee, S., 17th Japan Society of Microgravity Application Conference (JASMAC17), Oct. 29-31, Sendai, Japan, 2001

Time Scale Analysis for Opposed-Flow Flame Spread - The Microgravity Regime, Bhattacharjee, S., JSME Tokai Region Symposium, Sep 14, Gifu, Japan, 2001

Flame Spread in a Microgravity Environment- Role of Fuel Thickness, Bhattacharjee, S., Wakai, K., and Takahashi, S., . Sixth International Microgravity Combustion Workshop, NASA/CP-2001-208917, Cleveland, Ohio, May, 2001.

The Expert System for Thermodynamics - A Webware for Online Education, Bhattacharjee, S., "Preparing Engineers for an e-Merging World", ASEE Regional Meeting, Cal Poly Pomona, April 12, 2001.

Opposed Flow Flame Spread in Low Velocity Flows, Altenkirch, R.A., Olson, S.L., Deering, J. L., Tang, L., Bhattacharjee, S., and Hegde, U., . Fifth International Microgravity Combustion Workshop, NASA/CP-1999-208917, Cleveland, Ohio, May, 1999.

Flame Radiation Near Extinction, Altenkirch, R.A., Bundy, M.F., Tang, L., Bhattacharjee, S., Delichatsios, M., and Sacksteder, K., . Fifth International Microgravity Combustion Workshop, NASA/CP-1999-208917, Cleveland, Ohio, May, 1999.

Delineating the Sub-Regimes of Opposed-Flow Flame Spread, Bhattacharjee, S., W.S.S., Technical Meeting, Seattle, Oct. 26-27, 1998.

Diffusive and Radiative Transport in Fire Experiment: DARTFire, Olson, S.L., Altenkirch, R.A., Bhattacharjee, S., Tang, L., and Hegde, U., Fourth International Microgravity Combustion Workshop, Cleveland, Ohio, May 19-21, 1997.

Reflight of the Solid Surface Combustion Experiment: Opposed-Flow Flame Spread Over Cylindrical Fuels, Bhattacharjee, S., Altenkirch, R.A., Worley, R., Tang, L., Bundy, M., Sacksteder, K., and Delichatsios, M., ., Fourth International Microgravity Combustion Workshop, Cleveland, Ohio, May 19-21, 1997.

Opposed-Flow Flame Spread Over Cylindrical Fuels, Bhattacharjee, S, Worley, R., Altenkirch, R.A., Bundy, M., and Delichatsios, M., C.S.S., Technical Meeting, Point Clear, Alabama, April 27-29, 1997.

A Criterion for Transition between Thermally Thin and Thick Regimes for Opposed-Flow Flame Spread, Bhattacharjee, S., West, J., Hamilton, M., and Altenkirch, R.A., C.S.S., Technical Meeting, St. Louis, MO, May 5-7, (1996).

Forward Heat Transfer in Flame Spread Over Thermally Thick Solid Fuels in an Opposing Flow, West, J., King, M., Bhattacharjee, S., and Altenkirch, R.A., W.S.S., Technical Meeting, Stanford University, Mountain View, CA, Oct. 29-31, (1995).

Solid Surface Combustion Experiment: Flame Spread in a Quiescent, Microgravity Environment, Implications of Spread Rate and Flame Structure, Bundy, M., West, J., Thomas, P., Bhattacharjee, S., Tang, L., and Altenkirch, R.A., Third Microgravity Symposium, Apr. 11-13, Cleveland, 1995.

Low velocity Opposed-Flow Flame Spread in a Transport-Controlled Environment DARTFire, West, J., Thomas, P., Chao, R., Bhattacharjee, S., Tang, L., and Altenkirch, R.A., Third Microgravity Symposium, Apr. 11-13, Cleveland, 1995.

Hydrodynamic Effects in Laminar Opposed Flow Flame Spread over Thermally Thick Fuel in the Thermal Regime: Extension of a Simplified Theory, Bhattacharjee, S., West, J., and Altenkirch, R.A., C.S.S., W.S.S., Mexican National Section, and American Flame Research Committee Joint Technical Meeting, Apr. 23-26, San Antonio (1995).

Evaluation of the Quasi-Steady Hypothesis for Opposed-Flow Flame Spread over Thick Fuel: A Comparison of Unsteady and Steady-State Modeling by J. West, R. Chao, S. Bhattacharjee, L. Tang and R. A. Altenkirch,, C.S.S./W.S.S., Mexican National Section, and American Flame Research Committee Joint Technical Meeting, Apr. 23-26, San Antonio (1995).

A Correction to de Ris Formula for Creeping Flame Spread Over Thermally Thin Material, S. Bhattacharjee, and S. Dockter, Annual Conference on Fire Research, Oct. 17-19, (1993).

Unsteady Flame Spread Over Thin Solid Fuels in Quiescent Environments, L., Tang, R.A. Altenkirch, P. Ramachandra, M.K., Wolverton, S. Bhattacharjee, and K. Sacksteder, C.S.S. and E.S.S. Joint Technical Meeting of the Combustion Institute, Mar. 15-17, New Orleans, (1993).

Opposed-Flow Flame Spreading in Reduced Gravity, R.A. Altenkirch, S. Bhattacharjee, S.L. Olson, and K. Sacksteder, Second International Microgravity Combustion Workshop, Sep. 15-17, Cleveland (1992).

The Role of Kinetic, Transport, and Thermodynamic Properties on Flame Spread Over a Thin Solid Fuel in an Opposed-Flow Environment, S. Bhattacharjee, D. Seaton, and R.A. Altenkirch, W.S.S Technical Meeting of the Combustion Institute, Oct. 12-13, Berkeley (1992).

Finite-Rate Chemistry in Unsteady Flame Spread Over Solid Fuels in Microgravity, D. B. Bullard, L. Tang, R.A. Altenkirch, and S. Bhattacharjee, Symposium on Microgravity Research, World Space Congress, Aug. 28-September 5, Washington D.C. (1992).

Investigation of Controlling Parameters in Transition Between Thermally Thick Flame Spread Over Solid Fuels in an Opposing Flow, J. West, S. Bhattacharjee, and R.A. Altenkirch, W.S.S Technical Meeting of the Combustion Institute, Oct. 12-13, Berkeley (1992).

Three-Dimensional Radiative Effects in Opposed-Flow Flame Spread Modeling, S. Bhattacharjee, and R.A. Altenkirch, C.S.S Technical Meeting of the Combustion Institute, Apr. 22-23, Nashville, Tennessee, (1991).

Flame Temperature and Radiative Effects on Flame Spread Over Thermally Thick Fuels, J.S. West., S. Bhattacharjee, and R.A. Altenkirch, E.S.S. Technical Meeting of the Combustion Institute, Dec. 3-5, Orlando, Florida, (1990).

Buoyancy in Flame Spreading: A Comparison of the Role Played by Natural and Forced Convection, J.S. West., S. Bhattacharjee, and R.A. Altenkirch, C.S.S Technical Meeting of the Combustion Institute, May 20-22, Cincinnati, Ohio, (1990).

Radiative Effects in Opposed-Flow Flame Spreading Over Thin Fuels, S. Bhattacharjee, and R.A. Altenkirch, E.S.S. Technical Meeting of the Combustion Institute, Oct. 28-Nov. 1, Albany, New York, (1989).

The Effect of Surface Radiation on Flame Spread in a Quiescent Microgravity Environment, S. Bhattacharjee, and R.A. Altenkirch, C.S.S. Technical Meeting of the Combustion Institute, Apr. 28-30, Dearborn, Michigan, (1989).

A Theoretical Description of Flame Spreading Over Solid Combustibles at Zero-Gravity, S. Bhattacharjee, R.A. Altenkirch, N. Srikantiah, and M. Vedha-Nayagam, E.S.S. Technical Meeting of the Combustion Institute, Dec. 5-7, Clearwater Beach, Florida (1988).

Heat Transfer to Thin Solid Combustibles at Zero-Gravity, S. Bhattacharjee, R.A. Altenkirch, S.L. Olson, and R.G. Sotos, E.S.S. Technical Meeting of the Combustion Institute, Dec. 5-7, Clearwater Beach, Florida (1988).

Radiative Heat Transfer on Combustion Chamber Flows., S. Bhattacharjee and W.L. Grosshandler, W.S.S. Technical Meeting of the Combustion Institute, April 20-23, Salt Lake City, Utah, (1988).

Invited Talks and Presentations

Thermodynamics: An Interactive Approach, S. Bhattacharjee, School of Mechanical Engineering, Purdue University, May 1, 2015,.

An Overview of Flame Spread Research at SDSU, S. Bhattacharjee, Aerospace colloquium Series, SDSU, May 7, 2010.

An Object Oriented Approach to Computational Thermodynamics, S. Bhattacharjee, Washington State University, Pullman, USA, Oct, 2, 2008.

A Webware for Thermodynamic Research and Education, S. Bhattacharjee, National Institute of Technology, Silchar, India, July, 8, 2008.

A Cyber-Based Collaborative Framework for Thermodynamic Education and Research, S. Bhattacharjee, NSF Workshop on Cyber Infrastructure in Combustion Science, Arlington, April 19-20, 2006.

TEST-The Expert System for Thermodynamics, S. Bhattacharjee, Mechanical Engineering, IIT, Delhi, India, Oct 28, 2005.

TEST-The Expert System for Thermodynamics, S. Bhattacharjee, Mechanical Engineering, IIT, Bombay, India, Oct 25, 2005.

A Formula for Flame Spread Rate in the Microgravity Regime, S. Bhattacharjee, Mechanical and Aerospace Engineering Department, UCSD, October 6, 2003.

ABET Process in US Engineering Colleges, S. Bhattacharjee, Mechanical Engineering Department, Gifu University, Gifu, Japan, May, 2001.

Flame Spreading in Microgravity Environment, S. Bhattacharjee, Mechanical Engineering Department, San Diego State University, San Diego, April, 2001.

Delineating the Sub-Regimes of Flame Spread, S. Bhattacharjee, Mechanical Engineering Department, KAIST, S. Korea, May 19, 1998.

Flame Spread Research at San Diego State University, S. Bhattacharjee, Mechanical Engineering Department, Gifu University, Gifu, Japan, March 20, 1998.

Opposed Flow Flame Spread Over Thick and Thin Fuels in the Thermal Regime: A New Theory, S. Bhattacharjee, Mechanical and Aerospace Department, University of California, Irvine, May 12, 1995.

Numerical Solution of a Classical Flame Spread Problem, S. Bhattacharjee, Mathematical Sciences Department, San Diego State University, San Diego, April 15, 1993.

Flame Spread in Space, S. Bhattacharjee, ASME Student Section, San Diego State University, San Diego, March 9, 1993.

Flame Spread over Solid Fuels in Microgravity, S. Bhattacharjee, Mechanical Engineering Dept., University of Southern California, Los Angeles, Feb. 6, (1992).

Space Based Experiments on flame Spread Over Condensed Fuel, S. Bhattacharjee, Mechanical Engineering Dept., San Deigo State University, Apr. 24, (1991).

Flame Spread in Microgravity Environment, S. Bhattacharjee, Mechanical Engineering Dept., San Deigo State University, Jan. 22, (1990).

Radiative Effects on Flame Spread, S. Bhattacharjee, Mechanical Engineering Dept., Mississippi State University, Jan. 15, (1990).

An Overview of Flame Spread Over Solid Fuel, S. Bhattacharjee, Mechanical Engineering Dept., Mississippi State University, Apr. 21, (1989).

Services

• **Judge:** Student Research Symposium, SDSU, 2011; • **CAPE (Cal. State Level Computer Committee) Representative for San Diego State** (hosted meeting in San Diego in 1992 and 1999), '93-present; • **University Undergraduate Council**, '93-2002, University Graduate Council 96-97 • **College Personnel Committee**, '00-03, 2008 • **College Assessment Committee**, 2008 • **College Computer Committee**, '91-00, 2008 (chair) • **APP Committee**, '96-02 • **Department Computer Committee**, '91-present, • **RSCA Committee**, '91-95, • **Department Graduate Advisor**, '96-2006. • **Recruitment Committee Chair**, Faculty search (1998, 1999) • **Recruitment Committee Member:** College Dean Search (2002), Department Chair Search (1996), Unix Administrator (1996), PC Administrator (96, 97), faculty search (2003).

• **Session Chair.** 9th SoCal Fluids Symposium, San Diego, April, 18, 2015, 34th International Symposium on combustion, Aug, 2014; WSS Technical Meeting of the Combustion Institute, October 22-23, UCLA, 2003. • **Session Chair**, 3rd ASME/JSME Thermal Engineering Conference, Hawaii, March 16-19, 2003, • **Program Review Committee Member**, 34th, 33rd, 32nd, 31st, 30th, 29th, 28th, 27th, 26th and 25th International Symposium on Combustion, • **Reviewer:** NSF, Journal of Heat Transfer, International Journal of Heat and Mass Transfer, Combustion Theory and Modeling, Combustion and Flame, Chemical Engineering Communications, ASME National Heat Transfer Conference., J. CALPHAD • **Member:** Combustion Institute, ASME, ASEE, Tau Beta Pi

Lectures on Thermodynamics for the San Diego County Science Olympiad Team: 2011; **Science Olympiad Coach for Middle School:** 06, 07, 08, 11 (Won state championship in Simple Machine - 2007). • **Helping Talented Underprivileged Students**, www.tripuratalents.com