Vitae of Subrata (Sooby) Bhattacharjee, Professor
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Education:

- Washington State University, Pullman, Washington, Sep. '83 - May '88.
  Ph.D. in Mechanical Engineering, GPA: 3.92.
  "Two-Way Radiation Coupling in Parabolic Combustion Chamber Flows".

  M.S. in Mechanical Engineering, GPA: 3.93.
  "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, Equivalent GPA: 3.9.
  G.R.E. scores in percentile: 91(verbal), 99(quant.), 98(subject).

Honors & Awards:

- **Best Paper Award**, *Effect of Ambient Conditions on Flame Spread over a Thin PMMA Sheet, Oct, 2000*, JSME, Kobe, Oct. 2000.
- **Sabbatical Leave Award**, Two-Color emission pyrometry, Gifu University, **Gifu**, Japan. Spring 1998.
- **Distinguished Faculty Award**, San Diego State University, 1997
- **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.
- **Outstanding Faculty Award**, Associated Students, San Diego State University, 1992-1993.
- **Faculty Friend Award**, SAE/ASME Student Chapter, Mechanical Engineering Department, San Diego State University, 1992-1993.
- **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:

- **Graduate Advisor**, Mechanical Engineering, San Diego State University, May '96 -Jan '98; April '01-Present.
- **Professor**, Mechanical Engineering, San Diego State University, May '00 - present.
- **Associate** Professor, Mechanical Engineering, San Diego State University, May '94 - '00.
- **Assistant Professor**, Mechanical Engineering, San Diego State University, Jan. '91 - April '94.
- **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.

Theses Chaired (Ph.D.):

2. *Infra-Red Imaging and Approximate Pyrometry for Flame Spread Experiments,* Mathew King, 1998 (under preparation).

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 (M.S):

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)

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.

Grants:

S. Bhattacharjee, K. Wakai, and S. Takahashi, *Dynamics of Flame Spread in Microgravity Environment*, Office of Space Science Applications, NASA , '00-'01: $115,000; '01-'02: $105,000; '02-'03: 120,000; '03-'04: $135,000.

S. Bhattacharjee, *Thermodynamics - A Problem Solving Approach*, Prentice Hall, '01-'02: $30,000; '02-'03: $30,000.

K. Wakai, S. Bhattacharjee, S. Takahashi, Ground Research for Space Environment Utilization 2000, Japan Space Forum (JSF) , 00-01:4798500 Yen, 01-02: 3496500 Yen, 02-03: 3391500 Yen. 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 , 800,000 yen in 1999, 700,000 yen in 2000, and 700,000 yen in 2001

S. Bhattacharjee, Travel Grant for International Programs, San Diego State University, $2,500, '00-'01

S. Bhattacharjee and R. Whitney, A Java Package for Thermodynamic Properties, Sun Microsystem Academic Equipment Grant, $55,085, '97-'98

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: '91-'92: $90,745; '92-'93: $77,327; '93-'94: $71,042, '94-'95: $55,542, '95-'96: $55,957, '96-'97: $50,434, '97-'98: $65,434

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: '94-'95: $8,981; '95-'96: $47,199; '96-'97: $48,937, '97-'98: $46,457, '98-'99 $48,000.

S. Bhattacharjee, Color Printers for The DARTFire Project, Sun Microsystem Academic Equipment Grant, $25,000, '94-'95

S. Bhattacharjee, *Theoretical Support for SSCE project,* Office of Space Science Applications, NASA,: '92-'93: 38,179; '93-'94: $16,039; '94-'95: $31,980; '95-'96: 39,381.

S. Bhattacharjee, "Thermodynamics Module of the EInet", DELTA Engineering project, California State University, '94-'95: $23,642; '95-'96: $32,934,

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

S. Bhattacharjee, *General Purpose Platform for Flame Spread Experiment,* Faculty Grant-in-Aid Award, San Diego State University, $8000, funded Apr., (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 $2000 (01-02), $2000 (96-97), $2000 (95-96), $2000 (94-95), $600 (93-94), $1500 (92-93), $1500 (91-92).

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).

Articles in Refereed Journals:

29. Bhattacharjee, S., Takahashi, Wakai, K., A., *Prediction of a Critical Fuel Thickness for Flame Extinction in a Quiescent Microgravity Environment,* Combustion and Flame, to appear, (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 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 and Altenkirch, R.A., *Further Application of Damkohler Number Concepts in Opposed-Flow Flame Spread Over Solid Fuels With Extesion 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., Wolverton, 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).

Teaching Innovation:

The Expert System for Thermodynamics: www.thermofluids.net
More than 1900 educators have registered to use this innovative web ware on thermodynamics. The site receives more than 10,000 hits a day has been translated into Spanish and Japanese and is mirrored in more than 10 countries.

Books and Chapters:

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

Learning Enhancement in Thermodynamic Classroom via Use of TEST Software in Design Projects and Laboratory by S. Kumpaty , *Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition*.

Altenkirch, R.A., and Bhattacharjee, S., *Opposed-Flow Flame Spread with Implications for Combustion at Microgravity*, AIAA Progress in Aeronautical and Astronautical Sciences: Progress in Low-Gravity Fluid Dynamics and Transport Phenomenon, Vol. 130, pp. 723-740, (1990).

Articles in Refereed Proceedings:

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 Extenstion To Super-Thin Fuels, West, J., Bhattacharjee, S., Seshadri, K., and 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 (No Review):

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 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, Standford 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 Sturcuture, 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 Committe 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 Committe 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).

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Invited Seminars

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).

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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).

Service:

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

Session Chair. 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**, 29th, 28th, 27th, 26th and 25th International Symposium on Combustion, •**Reviewer**: NSF, Journal of Heat Transfer, International Journal of Heat and MassTransfer, Combustion Theory and Modeling, Combustion and Flame, Chemical Engineering Communications, ASME National Heat Transfer Conference. •**Member**: Combustion Institute, ASME, ASEE, Tau Beta Pi

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