Syed Sohail Hamid Zaidi

Department of Aerospace and Mechanical Engineering
Princeton University, NJ 08540
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Education

MBA., Nottingham University, United Kingdom, July 1998
Dissertation: "IMF adjustment programmes – success or failure."
PhD., Mechanical Engineering, Cranfield University, United Kingdom, Jan. 1990
Thesis: " Fibre linked miniature laser transit anemometer for complex flow fields."
MSc., Nuclear Engineering, Quaid-i-Azam University, Islamabad, Pakistan, Jun. 1985
BSc., Mechanical Engineering, University of Engineering and Technology, Lahore, Pakistan, 1982
BSc., Advanced Mathematics and Physics, Punjab University, Lahore, Pakistan, 1976

Professional Experience: Summary

a: Technical Aspects and areas of expertise

Plasma Diagnostics
Characterization of Plasma using filtered Thomson scattering Technique (Electron Temperature and electron number densities)
Characterization of Plasma using microwave diagnostics (Electron number density and Electron collision frequencies)

Plasma Aerodynamics
MHD Power extraction short pulsed sustained plasmas in a cold air MHD channel.
Energy addition to control shockwave (sonic boom suppression)
Plasma flow control – snow plough

Laser Diagnostics
Development of Atomic filters and their application in Rayleigh and Raman imaging (rubidium filter, potassium filter, mercury filter for various applications)
Laser Two Focus Anemometry – application in high speed turbomachines (investigation of flow at the nozzle guide vanes in radial inflow turbine)
Laser Doppler systems – application in high speed turbomachines (flow investigation within rotating blades)
Phase Doppler Anemometry – application in multiphase flows (gas-liquid and liquid/liquid)
LIF – application in microwave electrothermal thruster for space propulsion
Magnetically guided laser ablation

Combustion
Flame propagation speed enhancement using microwaves- applications in hypersonic Vehicles

Development of optical sensors
Design and development of a miniaturized optical fiber based laser transit system
Design and development of a miniaturized optical fiber based laser Doppler system
Optical fiber based current sensors

(The research in all the areas mentioned above has been presented in various international conferences and reputable journals – please see attached list of publications)

b: Management Aspects

The PhD research project was completed in 1990 and since then, I have worked for various industrial clients of the universities (Cranfield University UK, Nottingham University UK, Princeton University USA) including **US-Army** (European office), **OSCA** (Optical society UK) **Rolls Royce** (UK**), Shell Research** (Holland), **Radial Inflow Turbine Consortium** (UK), **Noel Penny Gas Turbines** (UK), **Turbomach** (USA), **DARPA**, **DOE** (USA)and **Energia** (USA). In each case, my role was to ensure the successful implementation and management of the technical programmes, the successful completion of the projects within the given time period, reporting on the programme's progress and submission of the final reports to the relevant clients or funding agencies. In most cases multiple projects were conducted simultaneously and the available resources and the technical assistance was fully utilized to achieve the final goals. Other tasks included the search for appropriate funding resources for future projects.

Teaching Experience

1996-1997 – Instructor, Department of Chemical Engineering, University of Nottingham, UK.
2003- to date : Adjunct Asst. Professor at Department of Engineering, College of Staten Island, City University of New York.

Professional Work History

Research Scientist : July 2005 – present
Department of Mechanical and Aerospace Engineering
Princeton University, Princeton, NJ 08544, USA

Research Staff Member (Research Faculty) : April 1999 – June 2005
Department of Mechanical and Aerospace Engineering
Princeton University, Princeton, NJ 08544, USA

Research Associate: 1997-March 1999
Rolls Royce University Technology Center
Department of Mechanical Engineering
University of Nottingham, Nottingham, NG72RD, UK

Research Associate: 1994-1997
Chemical Engineering Department
University of Nottingham, Nottingham, NG7 2RD, UK

Research Fellow: 1990-1994
School of Mechanical Engineering
Cranfield University, Cranfield, BEDS MK 43 OAL, UK

Industrial Sponsored Research Projects:

1: Applied Physic Group, Princeton University (April 1999 – present)

Project: Development of high specific impulse thrusters by magnetically guided laser ablation
Project Sponsors: PM & AM Research and AFRL [Phase I program – F04611-03-M-3104]

Project: Design and development of atomic filters to investigate low-wavenumber Raman scattering
Project Sponsors: Energia (USA), Air Plasma Ramparts MURI Program (USA)

Project: Filtered coherent Thomson scattering for plasma diagnostics
Project Sponsors: DOE, SBIR Phase I, USA

Project: Sonic Boom Suppression (Influence of Pulsed energy addition on shock wave structures)
Project Sponsors: DARPA Quite supersonic program and Boeing – project in progress

Project: Water based Thrusters for space propulsion
Project Sponsors: DARPA SB021-020 (SBIR-Phase I) and Research Support Instruments, Inc.

Project: Experimental investigation of power extraction by MHD in hypersonic vehicles (In progress)
Project Sponsors: SBIR- Phase I, Research Support Instruments, Inc. and DARPA

Project: Microwave enhanced combustion
Project Sponsors: SBIR Phase 1, RSI and Air Force Small Business Innovation Research Program, DOD, F041-188-2349

Project: Combustion enhancement with repetitively pulsed high-field plasmas and microwave power
Project Sponsors: RSI and AF (STTR - AF02T014) – Phase I and phase II Program

Project: Wide field of view, ultra narrow linewidth imaging filter for near infrared detection of missile plumes
Project Sponsors: Princeton Scientific Instruments and STTR [Phase I and Phase II program]

Project: An equilibrated micromachined pressure (EMP) sensor for hypersonic transients
Project Sponsors: US Department of Defense and RSI, [STTR Phase I, F033-0307].

Project: Flow control possibilities using arc plasmas
Project Sponsor: Department's internal research funding

Project: Design and development of a pulsed, narrow linewidth UV source for Rayleigh applications
Project Sponsor: Department's internal research funding

2: Rolls Royce Technology Center, University of Nottingham (1997-Mar.1999)

Project: Investigation of HP-IP bearing chamber of Trent 500 Engine
Project Sponsors: Rolls Royce PLC, UK

Project: Development of a prototype rig to investigate rotating flows –drop sizes and film thickness
Project Sponsors: Rolls Royce PLC, UK

3: University of Nottingham (1994-1997)

Project: Multiphase flow (**air/liquid**) characterization in vertical and horizontal pipes.
Project Sponsors: Shell Research (Amsterdam), AEA Harwell (UK).

Project: Multiphase flow (**liquid/liquid**) characterization in vertical and horizontal pipes.
Project Sponsors: Department of Chemical Engineering.

Project: Measurement of liquid drop sizes in a wind tunnel and in a Demsiter.
Project Sponsors: Department of Chemical Engineering.

Project: Theoretical investigation of stresses in a Silo
Project Sponsors: Department of Chemical Engineering.

4: Cranfield University (1986-1994)

Project: Design and development of optical fibre based miniaturized laser Transit system.
Project Sponsors: PhD research program funded by the Department and Rolls Royce (UK)

Project: Investigation of flow within a radial inflow turbine (60,000 rpm at 400 C°) using laser techniques.
Project Sponsors: European Research Office for US Army.

Project: Investigation of flow in GEM60 rotor using laser techniques.
Project Sponsors: Rolls Royce PLC, UK.

Project: Development of optical fibre based intrinsic and extrinsic sensors.
Project Sponsors: UK Optical Sensors Collaborative Association.

Project: Investigation of flow in a radial inflow turbine (60,000 rpm) using laser techniques.
Project Sponsors: The Radial Inflow Turbine Consortium, UK.

Technical Positions

1: Member of the Aerodynamic Measurement Technology Technical Committee **(AMTC)**, American Institute of Aeronautics and Astronautics (AIAA), USA, Since February 2003.
2: Journal Reviewer, Reviewing research papers for **"Journal of American Institute of Aeronautics and Astronautics"** (AIAA Journal) , USA.
3: Journal Reviewer, Reviewing research papers for Journal **"Plasma Sources Science and Technology"**, USA.
4: Member of the **Industrial Advisory Board** of the Engineering Science Program, College of Staten Island, The City University of New York.
5. Session Chair at AIAA conferences [AMT –Sessions].
6: **Senior Research Editor [2001-2002]**, Journal of Diplomacy and International Relations, USA.

Industrial Reports

Lavid, M., Zaidi, S.H., Baker, P., Miles, R.B.
Filtered coherent Thomson scattering for plasma diagnostics
Prepared for**: DOE** (Department of Energy, USA) SBIR Phase I
Final Report Contract No: DE-FG02-99ER82820, March 2000, Princeton University, USA

Sohail H. Zaidi, R.L.Elder
Measurements in NGV region of a high Expansion Ratio Turbine (PhaseIII :Consortium Programme)
Prepared for: **Consortium Project** (Noel Peny Gas Turbines, UK, Teledyne, USA)
Report No: TR/91/RIT04/756 (Cranfield University, UK.)

Sohail H. Zaidi, R.L.Elder
Flow studies in the GEM 60 Impeller.
Prepared for: **Rolls Royce Plc**, Leavesden, UK
Report No: 06/7777V (Cranfield University, UK.)

Sohail H. Zaidi, R.L.Elder
Radial Inflow Turbine Study.
Prepared for: **European Research Office of the USA Army**
Report No: 06/769E (Cranfield University, UK.)

Sohail H. Zaidi, R.P.Tatam
Remote Sensing in the Electric Supply Industry; Investigation of vibration compensation Techniques in Faraday Electric Current Sensors
Prepared for: **OSCA (Optical Collaborative Association, UK)**
Report No: 93/32F (Cranfield University, UK.)

Short Courses

1: Lecture Series on Laser Velocimetry. Von Karman Institute, Brussels, Belgium, Jun. 1991
2: Optical Sensors Technology, Optical Sensors Group, Cranfield University, UK, 1988
3: Compressor Design and Performance, School of Mechanical Engineering, Cranfield University, 1987

Scholarships and Awards

1: PAEC Fellowship, Quaid-i-Azam University, Islamabad, Pakistan.
2: Overseas Research Student Awards, University of Glasgow, Scotland, UK.
3: Faculty Award, Glasgow University, Scotland, UK.
4: ORS and Faculty Awards, Cranfield University, UK.
5: ICIC Foundation Scholarship, UK.

Professional Memberships

1: AIAA, American Institute of Aeronautics and Astronautics, member (1999 to date)
2: ASME, American Society of Mechanical Engineers, Associate Member (1990-1992)
3: SPIE, Associate Member (1990- 1992)

Personal Information

Marital Status: Married *Citizenship : British*

USA Work authorization: ***Green Card holder***

List of Publications: Number of Publications in Engineering ~ 80 (Journal and Conference papers)

(Complete list is attached)

Updated List of Publications

A: International Journals

1. R. Murray, Sohail H. Zaidi, M.N. Shneider, S.O. Machetret, R.B. Miles
Microwave diagnostics of short pulsed sustained plasmas, Special ATM Edition, American Institute of Aeronautics and Astronautics (*AIAA*) *Journal*, Paper accepted for publication

2. L. Qian, Sohail H. Zaidi, R.B. Miles
Narrow linewidth ultraviolet source for Rayleigh and Raman applications
AIAA Journal, March 2005, pp 451-457

3. Robert C. Murray, Sohail H. Zaidi, Mikhail N. Shneider, Richard B. Miles
Magnetohydrodynamic (MHD) power extraction in high speed flows using non-equilibrium Ionization techniques, *Paper accepted in AIAA Jorunal*, Paper accepted for publication

4. R.B. Miles, L. Qian, S.H. Zaidi
Imaging flow structure and species with atomic and molecular filters, Special issue of *Optics and*
Lasers in Engineering, devoted to "Optical Methods in Heat Transfer and Fluid Flow", Accepted
Publication, 2005.

5. Sohail H. Zaidi, M.N. Shneider, R.B. Miles
Investigation of Shock-Wave Mitigation through an off-body Pulsed Energy Deposition, Paper accepted for American Institute of Aeronautics and Astronautics, AIAA Journal, April 18, 2003.

6. Zaidi S.H., Tang Z., Yalin A., Barker P., Miles R.B.
Filtered Thomson scattering in an Argon plasma,
AMT Issue of American Institute of Aeronautics and Astronautics,
AIAA Journal, Vol. 40, No. 6, Jun, 2002, pp 1087-1093.

7. Sanaullah K., Zaidi S.H., Hills J.H.
A Study of Bubbly Flow using Resistivity Probes in a Novel Configuration,
Chemical Engineering Journal, 83(1), Apr. 15, 2001, pp 45-53.

8. Richard B. Miles, Azer P. Yalin, Zhen Tang, Sohail H. Zaidi, Joseph N. Forkey
Flow Field Imaging through Sharp-edged Atomic and Molecular 'Notch' Filters,
Meas. Sci. Technol. 12, 2001, pp 442-451.

9. Miles R.B., Tang Z., Zaidi S.H., Yalin A., Finkelstein N.
High Signal-to-noise detection of rotational Raman scattering through refluorescent and dispersive Atomic Filters,
Journal of Raman Spectroscopy, 31. 2000, pp843-849.

10. Azzopardi, B.J., Zaidi S.H.
Determination of entrained fraction in vertical annular gas/liquid Flow,
J. Fluid Engineering, v 122, March 2000, pp 146-150.

11. Simmons MJH, Zaidi S.H., Azzopardi B.J.,
Comparison of laser based drop size measurement techniques and their application to dispersed liquid-liquid flow,
Optical Engineering, V 39, No 2, Feb 2000, pp 505-509.

12. Sohail H. Zaidi, A. Altunbas, B.J. Azzopardi
A comparative study of phase Doppler and laser diffraction techniques to investigate drop sizes in annular two-phase flow,
Chemical Eng. Jour. 71, pp 135-143,1998.

13. Sohail H. Zaidi
Difficulties in measuring liquid drop size distributions using Laser Diffraction Technique,
International Journal of Atomisation and Sprays. Vol. 8, No. 4, 1998, pp 439-452.

14. Sohail H. Zaidi
Practical Problems associated with Laser Anemometry in high speed Turbomachines,
Jour. Optics and Lasers in Engineering, v26, No 6, April, 1997, pp 473-486.

15. Sohail H. Zaidi, R.L.Elder
Flow studies using Laser Anemometry Technique in a small power unit Radial Inflow Turbine,
International Jour. of Rotating Machinery, Vol. 3, No 2, 1997, pp 107-115.

16. **Sohail H. Zaidi, R.P.Tatam**
Faraday effect Magnetometry: Compensation for the temperature dependent Verdet Constant,
Journal of Meas. Sci. Technol. No 5, pp 1471-1479, 1994.

17. Ahmed N, Sohail Hamid, R.L.Elder
Fibre Optic Laser Anemometry for Turbomachinery Applications
Journal, Optics and Lasers in Engineering, 16, pp 193-205, 1992.

B. Archived International Conferences

1. Sohail H. Zaidi, D. J. Sullivan, S.O. Macheret, Y. Ju., P.C., Efthinium, R.B. Miles
Microwave-assisted Hydrocarbon flame speed enhancement,
43rd AIAA Aerospace Sciences Meeting and Exhibit, Paper # AIAA-2005-0992
Reno, Nevada, Jan. 10-13, 2005.

2. Sohail H. Zaidi, T. Smith, L. Qian, R. C. Murray, R.B. Miles
Magnetically guided laser ablation for high specific impulse thrusters,
43rd AIAA Aerospace Sciences Meeting and Exhibit, Paper # AIAA-2005-0365
Reno, Nevada, Jan. 10-13, 2005.

3. L. Qian, S.H., Zaidi, R.B. Miles
Narrow line-width potassium filter for near infrared detection of missile plumes,
43rd AIAA Aerospace Sciences Meeting and Exhibit, Paper # AIAA-2005-0825
Reno, Nevada, Jan. 10-13, 2005.

4. **R.B. Miles, S.O. Macheret, M.N. Shneider, C. Steeves, R.C. Murrray, T. Smith, S.H. Zaidi**
Plasma-enhanced hypersonic performance enabled by MHD power extraction
43rd AIAA Aerospace Sciences Meeting and Exhibit, Paper # AIAA-2005-0825
Reno, Nevada, Jan. 10-13, 2005.

5. D.J. Sullivan, S.H. Zaidi, S.O. Macheret, Y. Ju., R.B. Miles
Microwave Techniques for the combustion enhancement of laminar flames
40th AIAA/SME/SAE/ASEE Joint Propulsion Conference,
AIAA-2004-3713, Fort Lauderdale, FL., 11-14 July, 2004.

6. D.J. Sullivan, J.F. Kline, S.H. Zaidi, R.B. Miles
A 330 w Microwave Thruster Design and Performance Testing
40th AIAA/SME/SAE/ASEE Joint Propulsion Conference,
AIAA-2004-4122, Fort Lauderdale, FL., 11-14 July, 2004.

7. S.H. Zaidi, S.O. Macheret, Y. Ju, R.B. Miles, D.J. Sullivan
Increased Speed of premixed laminar flames in a microwave resonator
35th AIAA Plasmadynamics and Lasers Conference, Portland, Oregon, 28June – 1 July, 2004.

8. S.O. Macheret, M.N Shneider, R.C. Murray, S.H. Zaidi, L.M., Vasilyak, R.B. Mile
RDHWT/MARIAH II MHD Modeling and Experiments Review

24th AIAA Aerodynamic Measurement Technology and Group Testing Conference, Portland, Oregon, 28June – 1 July, 2004.

9. **L. Qian, Sohail H. Zaidi, R.B. Miles**
Utlra-narrow linewidth, 254 nm Mercury lamp, pumped by nanosecond electrical pulser, American Institute of Aeronautics and Astronautics (*AIAA*) 42nd Aerospace Sciences Meeting And Exhibition, AIAA-2004-0020, January 5-8, Reno 2004.

10. **Sohail H. Zaidi, Robert C. Murray, Mikhail N. Shneider, Richard B. Miles**
Diagnostics of short pulsed sustained plasmas in a cold air MHD channel, American Institute of Aeronautics and Astronautics (*AIAA*) 42nd Aerospace Sciences Meeting And Exhibition, AIAA-2004-0708, January 5-8, Reno 2004.

11. **R. Murray, S.H. Zaidi, M. Carraro, L. Vasilyak, M. Shneider, S.O. Machetret, R.B. Miles**
Observation of MHD effects with non-equilibrium ionization in cold supersonic airflows, American Institute of Aeronautics and Astronautics (*AIAA*) 42nd Aerospace Sciences Meeting And Exhibition, AIAA-2004-1025, January 5-8, Reno 2004.

12. **Sohail H. Zaidi, C. Wyckham, R.B. Miles, A.J. Smits**
Development of a Shack-Hartmann Sensor for Aero-Optic Applications, 21ST AIAA Applied Aerodynamics Conference, Paper No. 2003-4251, 23-26 Jun 2003, Orlando, Florida, USA.

13. Vincent P. Chiravalle, Sohail H. Zaidi, Richard B. Miles
Laser-Induced Fluorescence Measurements of a Two-Stage Microwave Electrothermal Thruster Plume,
34th AIAA Plasmadynamics and Laser Conference, Paper No 2003-4294
23-26 Jun 2003, Orlando, Florida, USA.

14. **R.C. Murray, Sohail H. Zaidi, M.N. Shneider, S.O. Macheret, R.B. Miles**
Investigation of a Mach 3 Cold Air MHD Channel
34th AIAA Plasmadynamics and Laser Conference, Paper No 2003-4282
23-26 Jun 2003, Orlando, Florida, USA.

15. **M.N. Shneider, Sohail H. Zaidi, S.O. Macheret, I. Grigis, R.B. Miles**
Steady and Unsteady Supersonic Flow Control with Energy Addition
Invited Paper, 34th AIAA Plasmadynamics and Laser Conference,
23-26 Jun 2003, Orlando, Florida, USA.

16. **J. Luff, D. Mansfield, Sohail H. Zaidi, R.B. Miles**
Development of a Tunable Megahertz Pulse-Burst Alexandrite Laser System
34th AIAA Plasmadynamics and Laser Conference, Paper No 2003-3746
23-26 Jun 2003, Orlando, Florida, USA.

17. R.C. Murray, Sohail H. Zaidi, M.N. Shneider, S.O. Macheret, R.B Miles
Non-Equilibrium Ionization Techniques for MHD Power Extraction in High-Speed Flows, Paper No AIAA 2003-1049, AIAA Meeting Reno, Jan 6-9, 2003.

18. **Zaidi S.H., Shneider M.N., Mansfield D.K., Ionikh Y.Z., Miles R.B.**
Influence of Upstream Pulsed Energy Deposition on a Shock Wave, 22nd AIAA Aerodynamics Measurement Technology and Ground Testing Conference, Paper No. 2002-2703, 24-27 June, St. Louise, Missouri, 2002.

19. **Richard B. Miles, Luigi Mertinelli, Sergey O. Macheret, Mikhail Shneider, Ihab G. Girgis, Sohail H. Zaidi, D.K. Mansfield, Michael Siclari, Philip Smereczniak, Ron Kashuba, Pat Vogal**,
Suppression of Sonic Boom by Dynamic Off-body Energy Addition and Shape Optimization, AIAA-2002-0150, 40th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Jan 14-17, 2002.

20. **Zaidi S.H., Z. Tang, Miles R.B.**
Rubidium Filtered Thomson Scattering Measurements in an Atmospheric Pressure Argon Arc,PPS/ICOPS Conference, Las Vegas, June 17-22, 2001.

21. Zaidi S.H., Tang Z., Yalin A., Barker P., Miles R.B.
Filtered Thomson scattering in an Argon plasma,
AIAA-2001-0415, 39th AIAA Aerospace Sciences Meeting and Exhibit,
8-11 January, Reno, 2001.

22. Tang Z., Zaidi S.H., Miles R.B.
Density gradient rubidium dispersive absorption filter for low wavenumber Raman and Thomson scattering, AIAA 2000-0644, Reno 2000, USA, 10-13 Jan. 2000.

23. Sohail H. Zaidi, B.J. Azzopardi
Study of aerodynamic break-up of liquid drops using laser diffraction technique.
14th annual conference on liquid atomization and spray systems,
6-8 July,Manchester, UK, 1998.

24. Sohail H. Zaidi – Invited Paper
Laser based size and velocity measurements in multiphase flow.
VI Int. Conf on Industrial lasers and laser applications, 27-29 June,
Shatura, Moscow, 1998.

25: B.J. Azzopardi, Sohail H. Zaidi
Drop sizes and velocities in annular two phase flow.
14th annual conference on liquid atomization and spray systems,
6-8 July,Manchester, UK, 1998.

26. Sohail H. Zaidi, G Ishaq, A Aroussi, B.J. Azzopardi
Study of drop break-up process on a rotating liquid film using laser diffraction technique.VI Int. Conf on Industrial lasers and laser applications,
27-29 June, Shatura, Moscow, 1998.

27. Sohail H. Zaidi, A. Altunbas
Study of aerodynamic break-up of liquid drops using laser techniques.
3rd Int Mechanical Engineering Conference, ISME, Tehran, 18-22 May, 1998.

28. Sohail H. Zaidi, J.K. Walters
Stresses on the wall of a cylindrical silo due to filling.
IChemE, 1998 Event, University of Newcastle upon Tyne, UK, 1998.

29. Sohail H. Zaidi, K. Sanaullah, A. Altunbas, J.H. Hills
An improved resistivity probe for bubbly flow measurements.
IChemE, 1998 Event, University of Newcastle upon Tyne, UK, 1998.

30. Sohail H. Zaidi, J.S. Layton, J.K. Walters, B.J. Azzopardi
Study of drop size and velocities within a demister using Laser techniques.
Int. Conf. On Optical Tech. And Image Process. In Fluid, Thermal and Combustion Flow, VSJ-SPIE., Yokohama, Japan, Dec 6-10, 1998.

31. S.H. Zaidi, G. Ishaq, A. Aroussi. B.J. Azzopardi
Two-phase Flow study around a rotating liquid film using laser techniques.
Int. Conf. On Optical Tech. And Image Process. In Fluid, Thermal and Combustion Flow, VSJ-SPIE., Yokohama, Japan, Dec 6-10, 1998.

32. M.J.H. Simmons, B.J. Azzopardi, Sohail H. Zaidi, C.A Sudlow
Drop size measurements and flow patterns in liquid-liquid pipe flow.
IChemE, 1998 Event, University of Newcastle upon Tyne, UK, 1998.

33. A. Altunbas, Sohail H. Zaidi, J.H. Hills, B.J. Azzopardi
Comparison of drop size measurements for annular two phase flow in vertical and horizontal tubes of various diameters,
IChemE, 1998 Event, University of Newcastle upon Tyne, UK, 1998.

34. J.S. Layton, J.K. Walters, B.J. Azzopardi, Sohail H. Zaidi
Laser experiments on wave plate Demisters,
IChemE, 1998 Event, University of Newcastle upon Tyne, UK, 1998.

35. J.K. Walters, Sohail H. Zaidi
Stresses in an eccentrically filled silos.
World Congress on Particle Technology 3, Brighton, 7-9 July 1998, UK, 1998.

36. K. Sanaullah, Sohail H. Zaidi, A. Altunbas, J.H. Hills
Bubbly flow measurements using a resistivity probe in novel configurations.
3rd International Conference on Multiphase Flow, June 1998, Lyon, France.

37. E. Mozaffari, S.T. Hall, J.H. Hills, Sohail H. Zaidi
Bubble swarm velocity measurement in the Jameson cell using fine hydrophobic and colour tracers,
3rd International Conference on Multiphase Flow, June 1998, Lyon, France.

38. Sohail H. Zaidi, A. Altunbas
A comparative study of annular two phase flow using phase Doppler and laser diffraction techniques,
7th Int. Conf. on Liquid Atomisation and Spray Systems,
ICLASS- Aug 18-22, 1997, Korea.

39. Azzopardi B.J., Sohail H. Zaidi
The effect of inclination on drop sizes in annular gas-liquid flow.
4th World Con. on Experimental Heat Transfer, Fluid Dynamics and Thermodynamics,
2 - 6 June, Brussels, 1997.

40. B.J. Azzopardi, Sohail H. Zaidi, D.M. Jepson
Entrained fraction in inclined annular gas-liquid flow.
Int. Mech. Eng. Congress and Exposition, ASME, Nov 16-21, Dallas, USA, 1997.

41. Sohail H. Zaidi, Simmons M.J.H., Azzopardi B.J.
Measurement of drop sizes in vertical liquid/liquid flows.
7th. Int.Conf. Laser Anemometry- Advances and Applications,
Sep. 8-12, Germany, 1997.

42. Sohail H. Zaidi, Altunbas, A.
Suitability of Optical Techniques to investigate complex flows in difficult Environments,
Int. Symp. on Optical Science, Engineering and Instrumentation.
SPIE Meeting, 27 Jul. - 1 Aug. San Diego, USA, 1997.

43. Layton J.S., Sohail H. Zaidi, Walters J.K., Azzopardi B.J., A. Altunbas
Study of droplet size distributions in wave plate Demisters using optical techniques,
Int. Symp. on Optical Science, Engineering and Instrumentation.
SPIE Meeting, 27 Jul. - 1 Aug. San Diego, USA, 1997.

44. Simmons M.J.H., Sohail H. Zaidi, Azzopardi B.J.
Investigation of Liquid-Liquid flows using laser based optical systems.
Int. Symp. on Optical Science, Engineering and Instrumentation.
SPIE Meeting, 27 Jul. - 1 Aug. San Diego, USA, 1997.

45. Altunbas, A., Sohail H. Zaidi, Hills J.H., Azzopardi B.J.
Study of two phase annular flow in vertical and horizontal pipes using laser techniques.
Int. Symp. on Optical Science, Engineering and Instrumentation.
SPIE Meeting, 27 Jul. - 1 Aug. San Diego, USA, 1997.

46. Sohail H. Zaidi, J.K. Walters
Study of stress distributions in Silos with various outlet configurations.
The Second Israel Conference for Conveying and Handling of Particulate Solids
Jerusalem, May 26-28, 1997.

47. Sohail H. Zaidi, J.K. Walters
Eccentric Filling of a Rectangular Bunker.
I ChemE, 1997 Event, University of Nottingham, UK.

48. Layton J.S., Walters J.K., Azzopardi B.J., Sohail H. Zaidi

Droplet Motion in Wave-Plate Demisters
I ChemE, 1997 Event, University of Nottingham, UK.

49. Sohail H. Zaidi
Practical problems associated with Laser diffraction technique in measuring liquid droplet size distributions,
12th. Annual Conf. of ILASS on liquid atomisation and spray systems,
June 19-21, Lund, Sweden, 1996.

50. Sohail H. Zaidi, B.J. Azzopardi
Study of liquid Droplets breaking using Laser Diffraction Technique.
8th Int. Sympos. on application of Laser Techniques to Fluid Dynamics,
Lisbon, 8-11 Jul, 1996.

51. Sohail H. Zaidi
Difficulties in applying laser technique to measure drop sizes in vertical and inclined Annular gas-liquid flows,
Int. Symposium on Optical Science, Engineering, and Instrumentation,
SPIE paper number:2863-61, 4-9 Aug. Denver, USA, 1996.

52. B.J. Azzopardi, Sohail H. Zaidi, C. Sudlow
The effect of inclination on drop sizes in annular gas/liquid flow,
European Two Phase Flow Meeting, Grenoble, France, 3-5 June, 1996.

53. Sohail H. Zaidi, R.P.Tatam
Combined Narrow band and broad band Interferometry for simultaneous measurement of temperature and Magnetic field,
SPIE, American Society of Optical Engineering, July. 1994, San Diego, USA.

54. Sohail H. Zaidi, R.P.Tatam
Compensation for the vibration induced Linear Birefringence Modulation in Faraday Effect Magnetometers,
The European Symposium on Optics for productivity in manufacturing,
Paper No 2248 - 44, 20-24 Jun. 1994, Frankfurt, Germany.

55. Sohail H. Zaidi, R.L.Elder
Study of Hot Flow through Turbines using Laser Anemometry
5th Int. Conf. Laser Anemometry - Advances and Applications,
23-27 Aug. 1993, Netherlands.

56. Sohail H. Zaidi, R.L.Elder
Nozzle Guide Vane Flow in a Radial Inflow Turbine using Laser Anemometry.
Technology Requirements for small Gas Turbines,Conf.
Proc. AGARD-CP-537, Canada, 1993.

57. Sohail H. Zaidi, R.L.Elder
Investigation of flow in a Radial Turbine using Laser Anemometry
ASME 93-GT-55, 24-27 May, 1993, Cincinnati, USA.

58. Antrobus A, Sohail H. Zaidi, R.P.Tatam
Development of a miniaturised Fibre Optic LDV for 3D measurements in Turbomachinery,
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