

Saptarshi Basu

DRDO Chair Professor in Mechanical Engineering
Associate Faculty, Interdisciplinary Center for Energy Research
Indian Institute of Science, Bangalore
Fellow Indian National Academy of Engineering (INAE)
Fellow American Society of Mechanical Engineers (ASME)
Fellow Royal Society of Chemistry [RSC]
Fellow Royal Aeronautical Society, UK [RAeS]
Fellow West Bengal Academy of Science and Technology (WAST)
Associate Fellow American Institute of Aeronautics and Astronautics (AIAA)
Fellow Institute of Physics, UK (IOP)
Fellow Institution of Engineers (IE)
Ex-Swarnajayanti Fellow in Engineering Sciences, DST-Government of India
Ex-Founder Director, BNG Spray Solutions Private Limited [2018-2019]
Chartered Engineer (India)
Email: sbasu@iisc.ac.in or saptarshibasukol@gmail.com
Phone : 91-776-08-08825 (Cell)/91-80-2293-3367 (Office)

1. EDUCATION

- **Ph.D. [Doctor of Philosophy] in Mechanical Engineering, University of Connecticut, USA, 08/2004- 05/2007.**
 - **Dissertation Title:** Optical diagnostics and computational modeling of reacting and non-reacting single and multiphase flows (2007); Advisor: Prof. B.M Cetegen
 - **Publication Number:** AAI3269486; **ISBN:** 9780549085058; **Source:** Dissertation Abstracts International, **Volume:** 68-06, **Section:** B, **page:** 4083; 252 pages.
- **M.S [Master of Science] in Mechanical Engineering, University of Connecticut, USA, 02/2003- 11/2004.**
 - **Thesis Title:** In-situ optical diagnostics in a PEM fuel cell using near IR absorption spectroscopy (2004); Advisor: Prof. B.M Cetegen

CGPA for MS and Ph.D.: 4.021/4.000

- **B.E [Bachelor of Engineering] in Mechanical Engineering, Jadavpur University, India, 06/1996-06/2000. First Class Honors**

2. PROFESSIONAL POSITIONS

- **Professor, Department of Mechanical Engineering, Indian Institute of Science, Bangalore December 2019-Current**
 - **DRDO Chair Professor 2018-current**
- **Associate Professor [Tenured], Department of Mechanical Engineering, Indian Institute of Science, Bangalore September 2014-December, 2019**
- **Associate Faculty, Interdisciplinary Center for Energy Research, May 2016-current**
- **Founder Director, BNG Spray Solutions Pvt. Ltd. (2018-2019)**
- **Associate Professor by Courtesy, Department of Mechanical, Materials and Aerospace Engineering, University of Central Florida, November 2010 – October 2020**
- **Assistant Professor, Department of Mechanical Engineering, Indian Institute of Science, Bangalore May 2010 – September 2014**
- **Assistant Professor [Tenure Track], Department of Mechanical, Materials and Aerospace Engineering, University of Central Florida, August 2007 – May 2010**
- **Graduate Research Assistant, Department of Mechanical Engineering, University of Connecticut, February 2003 – July 2007**
- **Consultant (Management Consultancy Services), Cogentech Management Consultants Pvt. Ltd., India, December 2001 – January 2003**
- **Consultant (Management Consultancy Services), PriceWaterhouseCoopers Pvt. Ltd., India, June 2000-December 2001**

3. ACADEMIC HONORS

- **Swarnajayanti Fellowship in Engineering Science [Similar to PECASE in the USA], Department of Science and Technology, Government of India, 2013-2014 [Awarded to 1-2 researchers across all Engineering disciplines annually nationwide]**
- **Fellow, Indian National Academy of Engineering [FNAE]; Election Year 2016**
- **Fellow, Royal Society of Chemistry [FRSC]; Election Year 2020**

- **Fellow, West Bengal Academy of Science and Technology [FAScT]; Election Year 2017**
- **Fellow, ASME (American Society of Mechanical Engineers); Election Year 2017**
- **Fellow: Royal Aeronautical Society [FRAeS], UK; Election Year 2021**
- **Associate Fellow, AIAA (American Institute of Aeronautics and Astronautics); Election Year 2018**
- **Fellow [FInstP], Institute of Physics (IOP), UK**
- **DRDO Chair Professor in Mechanical Sciences [2018-current]**
- **Fellow, Institution of Engineers [FIE]; Election Year 2018**
- **Prof. K.N Seetharamu Medal and Prize conferred by Indian Society of Heat and Mass Transfer [Regional center of ICHMT] in recognition to the contributions made in the area of thermal transport processes [Awarded to 1 researcher every two years across India]**
- **Graduate Research Fellowship [First Position] from the Department of Mechanical Engineering, University of Connecticut for Outstanding Academic Research, Spring 2007**
- **Recipient Graduate Summer Fellowship from the Department of Mechanical Engineering, University of Connecticut for Outstanding Academic Performance, Spring 2004**
- **Nominated for Pre-Doctoral Fellowship from Department of Mechanical Engineering, University of Connecticut for Outstanding Academic Performance, Spring 2006**

- **Honoria & Travel Award from Eastern States Section of the Combustion Institute, Fall 2003 & Fall 2005**
- **Travel Award from Western States Section of the Combustion Institute, Spring 2007**
- **DST SERC Fast Track Award for Young Scientist, August 2011**
- **V.M.K Shastri Award for Best Paper and Oral Presentation, 22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013**
- **Finalist, NASI-SCOPUS Young Scientist Award in Engineering Sciences-2016**
- **Certificate of Editorial Excellence (2017) from Advanced Powder Technology**
- **Best Poster Award in Colloids and Interfaces, COMPFLU-2018, IIT-Roorkee**

4. RESEARCH INTERESTS [THERMAL AND FLUID SCIENCES]

Combustion Instability, Optical Diagnostics in Fuel cells, Plasma Processing of Nano-ceramics, Flame-Vortex Interactions, Heat Transfer in Multiphase Systems, Thin Film Energetic Materials, Biofuels, Droplet Dynamics in Plasma and Combustion Flame, Radiative Heating of Droplets, Acoustic Levitation of Functional Droplets, Atomization and Sprays, Boiling, Droplet Drying

5. TEACHING

I. Courses Taught [University of Central Florida]

- **EML 4703: Fluids II [Fall 2007], 3 credits, Undergraduate [Senior]**

- **EML 6712: Viscous Fluid flow** [Spring 2008], 3 credits, Graduate
- **EML 4304: Thermo-Fluids Measurements** [Spring 2008, Fall 2008, Spring 2009, Spring 2010], 2 credits, Undergraduate [Senior and Junior]
- **EML 3303/EAS 3800: Measurements I** [Summer 2008, Fall 2008, Fall 2009], 3 credits, Undergraduate [Junior]
- **EML 5105: Statistical Thermodynamics** [Spring 2010], 3 credits, Graduate

II. Courses Taught [Indian Institute of Science]

- **Convection Heat Transfer** [Spring 2011, Spring 2012, Spring 2016, Spring 2017, Spring 2020], 3 credits, Graduate
- **Thermodynamics** [Fall 2011, Fall 2013, Fall 2014], 3 credits, Graduate
- **Special Topics in Combustion** [Fall 2012], 3 credits, Graduate [New Course]
- **Experimental Engineering** [Spring 2013-2015], 3 credits, Graduate
- NPTEL course: Heat transfer and combustion in multiphase systems
https://onlinecourses.nptel.ac.in/noc17_me07/preview
- NPTEL course: Convective Heat Transfer
https://onlinecourses.nptel.ac.in/noc18_me25/preview
- GIAN course on ATOMIZATION AND SPRAYS IN GAS TURBINE APPLICATIONS, co-taught with Prof. Cameron Tropea, TU-Darmstadt

6. PROFESSIONAL AFFILIATION AND ACTIVITIES

STARTUP & INNOVATION

- **EX FOUNDER DIRECTOR OF BNG SPRAY SOLUTIONS PRIVATE LIMITED (2018-2019):** Registration number 115962; CIN U29309KA2018PTC115962
 - WON DST NIDHI PRAYAS STARTUP GRANT
- **IMPRINT PROJECT ON *HYBRID THERMAL STORAGE*** CHOSEN AS ONE OF THE TOP 50 PROJECTS UNDER MAKE IN INDIA INITIATIVE FOR TECHEXPO BY MHRD. ONE OF THE TOP 20 PROJECTS FOR PROTOTYPE DISPLAY

EDITORIAL ACTIVITIES

- **Editor, Advanced Powder Technology [IF: 4.2], Elsevier**
[<https://www.journals.elsevier.com/advanced-powder-technology/editorial-board>]
- **Editorial Board Member, Scientific Reports [Springer Nature; IF 4.2]**
- **Lead Editor, Monograph: *Applications Paradigms of Droplet and Spray Transport: Paradigms and Applications; ISBN 978-981-10-7233-8, DOI: 10.1007/978-981-10-7233-8*, published by Springer Nature [Among Top 25 % of books in the category published by Springer Nature]**
- **Lead Editor, Monograph: *Droplets and Sprays Applications for Combustion and Propulsion, ISBN 978-981-10-7449-3, DOI:10.1007/978-981-10-7449-3*, published by Springer Nature [Among Top 25 % of books in the category published by Springer Nature]**
- **Guest Editor, Special Issue on Transport Processes in Droplets: Fundamentals to Applications, *Journal of the Indian Institute of Science* [IF: 1.2] published and distributed by Springer**
- **Associate Editor, ASME 15th International Heat Transfer Conference [August 10-15, 2014] in Kyoto, Japan**

PROFESSIONAL MEMBERSHIPS/ACTIVITIES

- **Member, AIAA Gas Turbine Engines Technical Committee**
- **Member, Combustion Physics Group Committee, Institute of Physics, UK**
- **Fellow, Indian National Academy of Engineering (2016)**
- **Fellow, West Bengal Academy of Science and Technology (2017)**
- **Fellow, ASME (American Society of Mechanical Engineers) [ID: 000100013776] (2017)**
- **Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA) [ID: 298224] (2018)**
- **Fellow, Institute of Physics (IOP), UK**
- **Fellow, RSC [FRSC: 661981]**
- **Fellow, Royal Aeronautical Society, UK**
- **Fellow, Institution of Engineers [F-1238309]**
- **DST-Swarnajayanti Fellow in Engineering Sciences, 2015-2020**
- **Fellow, Optical Society of India [ID: 1587]**
- **Chartered Engineer (Institution of Engineers, India)**

- **Member**, Faculty seminar evaluation committee, ICTS
- **Member**, Combustion Institute
- **Member, American Physical Society** [id: 61056211]
- **Member, AAAS** [id: 60009688]
- **Affiliate**, IEEE Lasers and Electro-Optics Society
- **Member**, Sigma Xi (The Scientific *Research Society*)
- **Life Member**, ISHMT [Indian Society of Heat and Mass Transfer]
- **Project Leader, Concentrated Solar Power [Thermal storage thrust], Indo-US Clean Energy Center** [funded by DOE and DST]
- **Project Leader & Core Member, National Combustion Center** [Funded by DST-India]
- **Reviewer [Technical]:**

ASME Journal of Heat Transfer, Journal of Power Sources, Combustion and Flame

International Journal of Heat and Fluid Flow, Energy, Applied Energy, Proceedings of the Combustion Institute, International Journal of Heat and Mass Transfer, Journal of the American Ceramic Society, Journal of Propulsion and Power, Experimental Thermal and Fluid Sciences, International Journal of Spray and Combustion Dynamics, Physics of Fluids, Journal of Fluid Mechanics, Microfluidics and Nanofluidics, IEEE Transactions on Components, Packaging and Manufacturing Technology, Chemical Engineering Science, Physical Chemistry Chemical Physics, Applied Physics Letters, Nature Scientific Reports, Analytical Chemistry, Langmuir, Applied Thermal Engineering, Physical Review E, Physical Review Letters, Physical Review Fluids

- **Invited Reviewer [Technical and Panel]:**
 1. **National Science Foundation [USA] panels for “Combustion, Fire and Plasma,” “Multiphase Transport” and “SBIR: Heat Exchangers and Fluid Flow”**
 2. **Indo-US Science and Technology Forum**
 3. **Member**, Standing Consultative Committee of Young Scientists- Government of India for looking into the future research directions of India, 2018-current
 4. **Member, Review Committee Microgravity Research Proposals for Gaganayan**

5. Reviewer: USIEF Fullbright-Nehru Doctoral Fellowships

- **Advisory Committee Member, ILASS-Asia-2016**
- **Session and Track Chair**
 - Proceedings of the Eastern States Section of the Combustion Institute 2009, University of Maryland College Park, Oct 18-21 2009,
 - 21st National and 10th ISHMT-ASME Heat and Mass Transfer conference INDIAN INSTITUTE OF TECHNOLOGY MADRAS, Chennai in December 2011
 - 12th International Conference on Liquid Atomization and Spray Systems, Heidelberg, Germany, September 2-6, 2012
 - 9th European Fluid Mechanics Conference, Rome, Italy, 9-13 September 2012
 - 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2017), Dates: December 27-30, 2017, BITS PILANI HYDERABAD
 - 1st International Conference on Mechanical Engineering (INCOM 2018) Jadavpur University, Kolkata, India, 4 January, 2018 – 6th January, 2018
 - Session Chair, Spray, Droplet and Supercritical Combustion, ASPACC 2019
 - Session Chair, ASME Gas Turbine India, 2019
 - Program Committee Member, 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference, 2019, IIT-Roorkee
 - Rapporteur: V8H2S1: Air Breathing Engines: VAIBHAV Aerospace Session
 - Session co-chair, Gas Turbine Diagnostics, Prognostics and Controls, 2021 AIAA Propulsion & Energy Forum
 - Session co-chair, GTE-04, 2021 AIAA Propulsion & Energy Forum
 - Session Chair, Droplets at Extreme Conditions II, Droplets 2021, Germany
- **Chief Organizer and Conference Chair**
 1. **Workshop Chair:** Indo-US Workshop on Biofuel Spray and Combustion, Bangalore, June 2011

2. **Conference Chair:** Second International Conference on Sustainable Energy and Environmental Challenges, December 31-January 3rd, 2018, IISc-Bangalore
 3. **Course Coordinator:** GIAN course on ATOMIZATION AND SPRAYS IN GAS TURBINE APPLICATIONS, co-taught with Prof. Cameron Tropea
- **External Expert in the Selection Committee**
 1. Member: Promotion of Technical/Scientific Officers in Central Power Research Institute
 2. Member: ISRO Evaluation Committee for promotion of Scientist F to Scientist G
 3. Member: Selection Committee, LNMIIT: Assistant Professor recruitment

7. RESEARCH LABORATORY DEVELOPMENT

I. UNIVERSITY OF CENTRAL FLORIDA

I had set up a state of the art Optical Diagnostics Facility in UCF for combustion and thermo-fluids research. The laboratory is named, “Gas Dynamics and Laser Diagnostics”. The laboratory is now equipped with a.) Seven High speed cameras, b.) Three PIV Lasers, c.) High speed lasers, d.) Sirah Dye laser, e.) Acoustic levitator, f.) Two Imager intense cross correlation cameras, g.) Multiple PMTs, h.) Multiple Computers, i.) Three Diode laser systems, j.) Long distance microscope, k.) Endoscope for PIV, l.) Fiber optics for laser beam delivery, m.) IR-Camera, n.) External image intensifier, o.) Spectrophotometer, p.) Multiple photodiodes and q.) Lock-in amplifier

II. INDIAN INSTITUTE OF SCIENCE

I have setup a state of the art Experimental Facility in IISc for combustion and thermo-fluids research.

The laboratory is named, “Multiphase Flow, Combustion and Laser Diagnostics”. The laboratory is now equipped with 1.) PMTs, 2.) AVT RGB Camera, 3.) Acoustic Levitator, 4.) Imager Intense Cross Correlation Cameras, 5.) Three Diode Laser Systems, 6.) Lock-in Amplifier, 7.) Fiber Optics, 8.) Navitar Zoom Lens Assembly, 9.) PCB

Microphones, 10.) Multiple Computers, 11.) CNI Green Laser, 12.) FLIR IR Camera, 13.) PTU, 14.) DAQ Systems, 15.) RGB Camera, 16.) FLIR IR-Camera, 17.) 130 mJ Nd:YAG Laser with fourth harmonic generator, 18.) Soot Detection Unit, 19.) CO₂ Laser, 20.) Cobalt CW Laser, 21.) Photron High Speed Camera, 22.) Syringe pumps, 23.) Pzieo controllers, 24.) Diffusers and 25.) Micro-PIV System

8. THESIS/DISSERTATION SUPERVISION CHAIR

I. UNIVERSITY OF CENTRAL FLORIDA

SUPERVISION: 2 PHD STUDENTS [2 COMPLETED] AND 4 MS STUDENTS [4 COMPLETED]

1. **Christopher Zinner [Master of Science]**
Thesis Title, “METHANE AND DIMETHYL ETHER OXIDATION AT ELEVATED TEMPERATURES AND PRESSURE”
Status: Completed and Approved, May 2008
 - **Currently with Siemens Energy**

2. **Derek Lambe [Master of Science]**
Thesis Title: “WAVELENGTH MODULATION SPECTROSCOPY FOR WATER VAPOR AND CARBON DIOXIDE SPECIES MEASUREMENT NARROW CHANNEL APPLICATIONS”
Status: Completed and Approved, July 2009
 - **2nd Lieutenant and A-10 Structures Engineer at United States Air Force**
 - **Manager, Gooch & Housego, Orlando, FL**

3. **Navid Khatami [Master of Science]**
Thesis Title: “Analysis of Swirling Flows, Perturbed and Non-perturbed”
Completed May 2010
 - **Currently PhD student, UCF with Prof. O. Ilegbusi**

4. **Abhishek Saha [Master of Science]**
Dissertation Title: “VAPORIZATION CHARACTERISTICS OF PURE AND BLENDED BIOFUEL DROPLET INJECTED INTO HOT STREAM OF AIR”
Status: Completed and Approved June 2010

5. **Uyi Idahosa [Doctor of Philosophy]**
Dissertation Title: “COMBUSTION DYNAMICS AND FLUID MECHANICS IN NON-PREMIXED SWIRLING FLAMES”
Status: Completed and Approved May 2010
 - **Manager and Corporate Leadership Staff (CLS), GE Oil & Gas, USA**
 - **Combustion Research Engineer, GE Global Research Center New York**

6. **Abhishek Saha [Doctor of Philosophy]**
Dissertation Title: “Experimental Studies in Acoustically Levitated Droplet”
Status: Completed and Approved May 2012
 - **Current Position: Assistant Professor, MAE Department, University of California-San Diego, USA**
 - **Best Dissertation Award (University Level)**
 - **Past Position: Associate Research Scholar (under Prof. C.K Law), Princeton University**
 - **Post Doctoral Research Associate (under Prof. C.K Law), Princeton University**

II. INDIAN INSTITUTE OF SCIENCE

SUPERVISION: 16 PHD STUDENTS [12 COMPLETED], 3 MSC STUDENTS [3 COMPLETED], 9 ME STUDENTS [8 COMPLETED] AND 12 PROJECT ASSISTANTS, 5 POST DOCS [3 COMPLETED]

Graduated PhD Students

- **Deepu P [Doctor of Philosophy]**
PhD Thesis Title: DYNAMICS OF DROPLETS UNDER SUPPORT, ACOUSTIC AND/OR AMBIENT FLOW EXCITATION
Status: Completed and Approved, June, 2014
 - **Assistant Professor, IIT-Patna**
 - **Post Doctoral Research Associate, International Center for Theoretical Sciences with Prof. Rama Govindarajan, July-2016-December-2016**

- Post Doctoral Research Associate, TIFR-Hyderabad with Prof. Rama Govindarajan, July-2015-July-2016
 - Post Doctoral Research Associate, University of Florida, Gainesville, USA, June-2014 to June-2015
 - Prof. K.V Subba Rao Medal for Best PhD Thesis/Dissertation in ME
- Ankur Miglani [Doctor of Philosophy]
 PhD Thesis Title: Insights into vaporization and precipitation dynamics of burning and acoustically levitated nanofluid droplets
 Status: Completed and Approved, November, 2015
 - Assistant Professor, IIT-Indore
 - INDO-US Post Doctoral Fellow, Purdue University, USA
 - BK 21 Post Doctoral Research Associate, KAIST, South Korea
 - Awarded Indo-US Post Doctoral Fellowship
 - Prof. K.V Subba Rao Medal for Best PhD Thesis/Dissertation in ME
- R. Santhosh [Doctor of Philosophy]
 PhD Thesis Title: TRANSITION AND ACOUSTIC RESPONSE OF VORTEX BREAKDOWN MODES IN UNCONFINED COAXIAL SWIRLING FLOW AND FLAME
 Status: Completed and Approved, January, 2016
 - Assistant Professor, IIT-BHU [2021-current]
 - Assistant Professor, IIT-Dharwad
 - Post Doctoral Research Associate, Cardiff University, UK [Gas Turbine Research Center]
 - Post Doctoral Research Associate, University of Nottingham, UK [Rolls Royce University Technology Center]
- Binita Pathak [Doctor of Philosophy]
 PhD Thesis Title: EXTERNALLY INDUCED INSTABILITIES IN CONTACTLESS FUNCTIONAL DROPLETS
 Status: Completed and Approved, January, 2018
 - Assistant Professor, IIT-BHU
 - Post Doctoral Research Associate, University of Edinburgh
 - Prof. K.V Subba Rao Medal for Best PhD Thesis/Dissertation in ME
- Lalit Bansal [Doctor of Philosophy]

PhD Thesis Title: Evaporation and Buckling Dynamics of Sessile Droplets Resting on Hydrophobic Substrates

Status: Completed and Approved, January, 2018

- Assistant Professor, VIT-Vellore, India

- **Apratim Sanyal [Doctor of Philosophy]**

PhD Thesis Title: Evaporation driven oscillations and particle agglomeration in pure and complex fluids sessile droplets

Status: Completed and Approved, February, 2018

- Staff Engineer, Western Digital Corporation, Bangalore
- Prof. K.V Subba Rao Medal for Best PhD Thesis/Dissertation in ME

- **R. Kuppuraj [Doctor of Philosophy]**

PhD Thesis Title: STUDIES ON FLOW DYNAMICS AND SPRAY SWIRL INTERACTIONS IN GAS TURBINE COMBUSTOR

Status: Completed and Approved, June 2019

- Post Doc, CNRS-CORIA
- Post-Doc, University of Cambridge, UK
- Winner Indian National Academy of Engineering (INAE) Innovative Thesis Award at Doctoral level

- **P. Kabi [Doctor of Philosophy]****

PhD Thesis Title: A study of internal transport mechanisms in evaporating sessile droplets leading to dynamic self-assembly

Status: Completed and Approved, January 2020

- Post Doc, University College London, UK

- **Khushboo Pandey [Doctor of Philosophy]****

PhD Thesis Title: INTERNAL BOILING TO FLAME FLICKERING: INSIGHTS INTO VARIOUS SPATIO-TEMPORAL DYNAMICS OF NANOFUEL DROPLET COMBUSTION

Status: Completed and Approved, June 2020

- Post Doc, ETH Zurich, Switzerland
- Institute medal for Best PhD thesis in ICER

- **S. Advait [Doctor of Philosophy]****

PhD Thesis Title: Density stratified thermal energy storage system and the associated fluid dynamic perturbations

Status: Completed and Approved, June 2020

- Post Doctoral Research Associate, University of Nottingham

- S. Basha [Doctor of Philosophy]

PhD Thesis Title: Performance Analysis of a Loop Heat Pipe

Status: Completed and Approved, July 2020

- Scientist F at ISRO

Current PhD Students

- Bhavin Rathod [Doctor of Philosophy] [finished comprehensive]
- Omkar Hegde [Doctor of Philosophy] [finished comprehensive]
- Rampada Rana [Doctor of Philosophy]
- Sonu Kumar [Doctor of Philosophy]** [finished comprehensive]
- Dipti Parida [Doctor of Philosophy] [finished comprehensive]
- Durbar Roy [Doctor of Philosophy] [finished comprehensive]
- V. Gautham [Doctor of Philosophy] [finished comprehensive]
- S. Sharma [Doctor of Philosophy] [finished comprehensive]
- Abdur Rasheed [Doctor of Philosophy]
- Bal Krishnan [Doctor of Philosophy]
- D. Rathod [Doctor of Philosophy]** [finished comprehensive]
- Joita Chakraborty [Doctor of Philosophy]
- Sidhdhant Jain [Doctor of Philosophy]
- Akhil Arvind [Doctor of Philosophy]

MSc Students

- Keshav Pandey [Master of Science]
- Dilip Sanadi [Master of Science]
 - MSc Thesis Title: Dynamics of Hollow Cone Spray in an Unconfined, Isothermal, Co- Annular Swirling Jet Environment
 - Currently PhD student in CNRS-CORIA
- Binita Pathak [Master of Science]
 - MSc Thesis Title: Study of droplet dynamics in heated environment

ME Students

- P. Gaikwad [Master of Engineering]: Completed
 - Currently Assistant Professor, Sharda University, Delhi
- Santanu Mishra [Master of Engineering]: Completed

- Currently Edison Research Engineer, GE India Research Laboratory
- Abhishek Awachat [Master of Engineering]*: Completed
 - Currently CFD Engineer, Time Tooth Technologies
- D.Vikas [Master of Engineering]*: Completed
- V. Razdan [Master of Engineering]
- Akash Kumar Munjani [Master of Engineering]: Completed
- Durgesh Sarma [Master of Engineering]*: Completed
 - Currently Research Engineer, Mercedes Benz Research, Bangalore
- Lijun Raju [Master of Engineering]*: Completed
 - Currently PhD student, POF Group, University of Twente [under Prof. D. Lohse]

Project Assistants/Associates

- Shubham Chowdhury
- Aditya Potnis
 - PhD student, University of California San Diego
- Angkur Shaikeea
 - PhD Student Cambridge University [with Prof. V. Deshpande]
- Sameer Dharwade
 - PhD student, University of Washington at Seattle
- Arun Chandran
 - Engineer, Anton Par
- Anirban Sinha
 - Assistant Professor, Jadavpur University
 - PhD student, University of Connecticut
- P. K Unnikrishnan
- Naresh
- M. Kannan
- Utpal Chetia
- N. Prabhu
- Prateek Anand
 - Phd Student, JNCASR
- U. Agarwal**
- P. Sharma
- Sandeep Hatte
 - PhD Student, Virginia Tech (with Prof. R. Pitchumani)

- Saroj Kumar Panda [Project Assistant]*
 - Currently PhD student, IIT-Delhi

Post Doctoral Research Associates

- Manu KV [PhD, 2014 from Aerospace Engineering Department, IISC]; February, 2014-August 2015
 - Currently Assistant Professor, IIST-Trivandrum
 - Previously Assistant Professor at BMS College of Engineering
- *R. Anandalakshmi [PhD 2013, Chemical Engineering, IIT-Madras]; May 2013-December, 2013
 - Currently Assistant Professor at IIT-Guwahati
- H. Maity [PhD 2015, ISI-Kolkata]: October 2016-May 2017 [DS Kothari Fellow]
 - Assistant Professor, Vivekananda College, Naihati
- P. Deepu [PhD 2014, Mechanical Engineering, IISc-Bangalore]; December 2013-July, 2014
- Subhankar Chakraborty [Phd IIT-Kgp], October 2017-May, 2018
 - Currently Assistant Professor, IIIT-Kancheepuram
- Atmadeep Bhattacharya [PhD-JU], January,2018-June, 2019
- Chaitanya Rao [PhD, IITKgp], August 2018-March, 2021
- M.C Keerthi [Phd, IITK], January, 2019-September, 2019
 - Assistant Professor, IIT-Dharwad
- Mayank Modak [PhD, IIT-Indore], February, 2019-August, 2019
- Sreeparna Majee [PhD, JU], February 2020-current
- Ankur Chattopadhyay [PhD, IIT-Ropar], February 2020-current
- Khushboo Pandey [PhD, IISc-Bangalore], February 2020-September 2020
- Prasenjit Kabi [PhD, IISc-Bangalore], October 2019- August-2020
- Awanish Singh [PhD IIT-KGP], August 2019-current
- Vivek Jaiswal, CV Raman Post Doc, October, 2020-current [CV Raman Fellow]

* Jointly with Prof. P. Dutta

** Jointly with Dr. S. Chaudhuri

MEMBER OF DISSERTATION OR THESIS COMMITTEE/CO-ADVISOR

UNIVERSITY OF CENTRAL FLORIDA

CO-ADVISOR

1. Navid Aminimanash [Doctor of Philosophy]: **Completed 2010**
 - **[Currently Research Engineer, Siemens AG, Orlando, FL]**
2. Xin Gu [Doctor of Philosophy]: **Completed 2011**
 - **[Currently Senior Physics Validation Engineer, Exa Corporation, Boston]**
3. Erick Tijerno [Master of Science]: **Completed 2012**
 - **[Currently Research Engineer, Cummins INC USA]**

MEMBER OF DISSERTATION OR THESIS COMMITTEE

4. Denitsa Milanova [Bachelor of Science, Honors Thesis]: **Completed**
 - **[Currently PhD student, Stanford University]**
5. Jan Marsh [Bachelor of Science, Honors Thesis]: **Completed**
6. Humberto Zuniga [Doctor of Philosophy]: **Completed**
 - **[Currently Research Engineer, Siemens AG, Orlando, FL]**
7. Mark Ricklick [Doctor of Philosophy]: **Completed**
 - **[Application Engineer at CD-adapco, Orlando, FL]**
8. Slim Menzli [Master of Science]: **Completed**
9. Sylvette Rodriguez [Doctor of Philosophy]: **Completed**
10. Monica Bonadies [Master of Science]: **Continuing**
11. An Lee [Master of Science]: **Completed**
12. Carson Slaubaugh [Master of Science]: **Completed**
13. Ehsaan Tafti [Doctor of Philosophy]: **Completed**
14. Jared Pent [Master of Science]: **Completed**
15. Parveen Sachdeva [Doctor of Philosophy]: **Completed**
16. Virendra Singh [Doctor of Philosophy]: **Expected Completion 2010**
17. Jeff Nguyen [Doctor of Philosophy]: **Expected Completion 2010**
18. Xiliang Li [Doctor of Philosophy]: **Completed**
19. Nghia Tran [Doctor of Philosophy]: **Expected Completion 2013**
20. Dianne Vazquez [Master of Science]: **Completed**
21. Jason Dunn [Master of Science]: **Completed**
22. Josh Lee [Master of Science]: **Completed**
23. Josh Lee [Doctor of Philosophy]: **Completed**

**EXTERNAL EXAMINER FOR PH.D/MS
DISSERTATION**

- Jadavpur University, India
- Bengal Engineering and Science University, India
- IIT-Kharagpur
- IIT-Madras
- IIT-Roorkee
- IIT-Delhi
- IIT-Guwahati

9. JOURNAL ARTICLES

TOTAL = 173 ACCEPTED (10 MORE UNDER REVIEW)

TOTAL CITATIONS=2750

H-INDEX=29

NO. OF PAPERS IN JOURNALS WITH IF \geq 10: 2

NO. OF PAPERS IN JOURNALS WITH IF \geq 8: 9

NO. OF PAPERS IN JOURNALS WITH IF \geq 5: 27

NO. OF PAPERS IN JOURNALS WITH IF \geq 4: 46

JOURNAL	NUMBER OF PAPERS
APPLIED PHYSICS LETTERS [IF: 3.8]	11
SCIENCE ADVANCES [IF 14.11]	1
JOURNAL OF FLUID MECHANICS [IF: 3.7]	10
NATURE [IF:42]	1 [LETTER TO EDITOR]
PHYSICS OF FLUIDS [IF: 3.5]	23
PHYSICAL REVIEW E [IF 2.5]	6
EXPERIMENTS IN FLUIDS [IF: 2.44]	3
PROCEEDINGS OF THE ROYAL SOCIETY A [IF 2.8]	1
INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER [IF: 5.6]	13
COMBUSTION AND FLAME [IF: 4.2]	7
LANGMUIR [IF: 3.9]	11
PHYSICAL REVIEW FLUIDS [IF: 2.3]	1
EUROPEAN JOURNAL OF MECHANICS /B FLUIDS [IF: 2.2]	1
PROCEEDINGS OF THE COMBUSTION INSTITUTE [IF 5.6]	1

SOFT MATTER [IF: 3.7]	5
CURRENT OPINION IN COLLOID AND INTERFACE SCIENCE [IF: 7]	1
ASME JOURNAL OF HEAT TRANSFER [IF: 2]	6
JOURNAL OF APPLIED PHYSICS [IF: 2.2]	2
PHYSICS LETTERS A [IF: 2.6]	2
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RSC ADVANCES [IF: 3.1]	1
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JOURNAL OF THERMAL SPRAY TECHNOLOGY [IF: 2.8]	2
INTERNATIONAL JOURNAL OF MULTIPHASE FLOW [IF 3.2]	1
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INTERNATIONAL JOURNAL OF THERMAL SCIENCES [IF: 3.7]	1
PLOS ONE [IF: 2.8]	1
JOURNAL OF COLLOID AND INTERFACE SCIENCE [IF: 8.1]	5

COLLOIDS AND SURFACES A [IF 4.5]	3
JCRS [IF 3.3]	2
BIOMATERIALS [IF 12.2]	1
EXPERIMENTAL THERMAL AND FLUID SCIENCE [IF 3.3]	2
RENEWABLE ENERGY [IF 8.2]	1
OTHERS	8

*: denotes corresponding author; # depicts own students

Sl. NO.	Name of the author	Title of the paper	Name of the Journal, Volume year and page number.
173	Shubham Sharma#, Roven Pinto#, Abhishek Saha, Swetaprovo Chaudhuri, Saptarshi Basu*	Secondary Atomization and Possible Aerosolization of Cough Droplets through Single and Multi-layer Face Masks	Science Advances 7 (10), eabf0452 (2021) DOI: 10.1126/sciadv.abf0452 PRESS RELEASE <ul style="list-style-type: none"> https://www.iisc.ac.in/events/multilayer-masks-most-effective-at-preventing-aerosol-generation/ https://www.thehindu.com/news/cities/bangalore/multilayer-masks-offer-best-protection-iisc-study/article34006995.ece https://www.eurekalert.org/pub_releases/2021-03/uoc--tmm030521.php
172	Sombudhha Bagchi, Saptarshi Basu, Swetaprovo Chaudhuri, Abhishek Saha	Penetration and secondary atomization of droplets impacted on wet facemasks	Physical Review Fluids
171	S.Advaith, K.T Aswathi and Saptarshi Basu*	On the generation and evolution of heated vortex rings in viscous fluids	European Journal of Mechanics / B Fluids https://doi.org/10.1016/j.euromechflu.2021.09.014
170	Sharma, Shubham; Singh, Awanish; Srinivas, Rao; Kumar, Alope; Basu, Saptarshi*	Shock induced aerobreakup of a droplet	Journal of Fluid Mechanics Doi:10.1017/jfm.2021.860

169	Dipshikha Chakravortty, Saptarshi Basu, K S Nandakumar	Spacefarers -- protect our planet from falling debris	Letter to Editor, NATURE 597, 178 (2021), https://doi.org/10.1038/d41586-021-02396-8
168	Omkar Hegde; Ritika Chatterjee; Abdur Rasheed; Dipshikha Chakravortty and Saptarshi Basu*	Multiscale vapor-mediated dendritic pattern formation and bacterial aggregation in complex respiratory biofluid droplets	Journal of Colloid and Interface Science https://doi.org/10.1016/j.jcis.2021.09.158
167	Sreeparna Majee, Abhishek Saha, Swetaprovo Chaudhuri, Dipshikha Chakravortty, and Saptarshi Basu*	Two-dimensional mathematical framework for evaporation dynamics of respiratory bio-aerosol around the globe	Physics of Fluids DOI: 10.1063/5.0064635 INVITED ARTICLE
166	D. Parida, Saptarshi Basu*	DATA-DRIVEN ANALYSIS OF MOLTEN-SALT NANOFUIDS FOR SPECIFIC HEAT ENHANCEMENT USING UNSUPERVISED MACHINE LEARNING METHODOLOGIES	Solar Energy https://doi.org/10.1016/j.solener.2021.09.022
165	Bal Krishan, Dipendra Gupta, Gautham Vadlamudi, Shubham Sharma, Dipshikha Chakravortty, and Saptarshi Basu*	Efficacy of homemade face masks against human coughs: Insights on penetration, atomization and aerosolization of cough droplets	Physics of Fluids DOI: 10.1063/5.0061007 INVITED FEATURED ARTICLE CHOSEN AS NEWSWORTHY ARTICLE & PRESS RELEASE Press Release: https://phys.org/news/2021-09-homemade-masks-effectiveness-varies.html
164	Sreeparna Majee, Atish Roy Chowdhury, Roven Pinto, Ankur Chattopadhyay, Amey Nitin	Spatiotemporal evaporating droplet dynamics on fomites enhances long term bacterial pathogenesis	Communications Biology 4, Article number: 1173 (2021) [Springer Nature] DOI: 10.1038/s42003-021-02711-z

	Agharkar, Dipshikha Chakravortty, Saptarshi Basu*		bioRxiv, doi: https://doi.org/10.1101/2021.05.20.445070
163	Omkar Hegde, Ritika Chatterjee, Abdur Rasheed, Dipshikha Chakravortty, Saptarshi Basu*	Vapor mediation as a tool to control micro-nano scale dendritic crystallization and preferential bacterial distribution in drying respiratory droplets	bioRxiv, doi: https://doi.org/10.1101/2021.06.18.448992
162	Chaitra Jayadev,Thirum alesh MB, Khushboo Pandey, Roven Pinto,Shashi Prabha Pandey, Saptarshi Basu, Abhijit Sinha Roy,Rohit Shetty	Risk assessment of aerosol generation during vitreoretinal surgery using high speed imaging amidst the COVID-19 pandemic	Translational Vision Science and Technology
161	S. Chaudhuri, A.Saha and Saptarshi Basu*	An opinion on the multi-scale nature of Covid-19 type disease spread	Current Opinion in Colloid and Interface Science https://doi.org/10.1016/j.cocis.2021.101462 INVITED PAPER FOR COVID19: HOT TOPICS SPECIAL ISSUE
160	Abdur Rasheed; Shubham Sharma; Prasenjit Kabi; Abhishek Saha; Swetaprovo Chaudhuri and Saptarshi Basu*	Precipitation dynamics of surrogate respiratory droplets leading to possible fomites	Journal of Colloid and Interface Science (2021) https://doi.org/10.1016/j.jcis.2021.04.128
159	Omkar Hegde# and Saptarshi Basu*	Spatio-temporal modulation of self-assembled central aggregates of buoyant colloids in sessile droplets using vapor mediated interactions	Journal of Colloid and Interface Science (2021) https://doi.org/10.1016/j.jcis.2021.04.006
158	Piyush Tripathi# and Saptarshi Basu*	Insights into the dynamics of supercritical water flow using a two-phase approach	Physics of Fluids (2021) 33, 043304 (2021); https://doi.org/10.1063/5.0042935

			INVITED
157	Shubham Sharma [#] , Awanish Singh [#] and Saptarshi Basu [*]	On the dynamics of vortex-droplet co-axial interaction: an experimental and theoretical exploration	Journal of Fluid Mechanics (2021) doi:10.1017/jfm.2021.363 Chosen As FRONT COVER ARTICLE in JULY, 2021 ISSUE of JFM: <u>Journal of Fluid Mechanics</u> , Volume 918 , 10 July 2021 , pp. f1 - f2
156	Manish, Srinibas Karmakar, Sonu Kumar [#] and Saptarshi Basu	EXPERIMENTAL INVESTIGATION ON SPRAY CHARACTERISTICS OF JET A-1 AND ALTERNATIVE AVIATION FUELS	International Journal of Spray and Combustion Dynamics (2021) http://dx.doi.org/10.1177/17568277211010140
155	Prasenjit Kabi [#] , V. Razdan [#] , D. Roy [#] , L. Bansal [#] , S. Sahoo, R. Mukherjee, S. Chaudhuri and Saptarshi Basu [*]	Evaporation-induced alterations in oscillation and flow characteristics of a sessile droplet on a rose-mimetic surface	Soft Matter https://doi.org/10.1039/D0SM02106G CHOSEN FOR BACK COVER https://doi.org/10.1039/D1SM90029C
154	Omkar Hegde [#] , Ankur Chattopadhyay [#] , and Saptarshi Basu [*]	Universal spatio-topological control of crystallization in sessile droplets using non-intrusive vapor mediation	Physics of Fluids DOI: 10.1063/5.0037120
153	Durbar Roy, Sophia M, Abdur Rasheed, Prasenjit Kabi, Abhijit Sinha Roy, Rohit Shetty, and Saptarshi Basu	Dynamics of Aerosol Generation during Eye Procedure in Context of COVID-19	Physics of Fluids DOI: 10.1063/5.0061956 INVITED FEATURED ARTICLE CHOSEN AS NEWSWORTHY ARTICLE & PRESS RELEASE Press Release: https://phys.org/news/2021-09-noninvasive-eye-procedure-potential-pathway.html
152	G.Raghuram [#] , L.Bansal [#] ,	Suppression of coffee ring effect in high molecular weight polyacrylamide	Colloids and Surfaces A: Physicochemical and Engineering Aspects

	S.Basu and A.Kumar	droplets evaporating on hydrophobic surfaces	Volume 612, 5 March 2021, 126002 https://doi.org/10.1016/j.colsurfa.2020.126002
151	S.Chaudhuri, S. Basu and A.Saha	Analyzing the dominant SARS-CoV-2 transmission routes towards ab initio Susceptible-Exposed-Infectious-Recovered (SEIR) model	Physics of Fluids Vol 32, 123306 (2020) doi: 10.1063/5.0034032 INVITED FEATURED ARTICLE APS PRESS RELEASE https://aps.org/newsroom/vpr/dfd/2020/11-22-2020-08.cfm Added as a milestone in aerosol timeline in COVID-19 https://timelinez.github.io/aerosolized-covid-19/index.html#event-analyzing-the-dominant-sars-cov-2-transmission-routes
150	Roshmi Gupta, K. Pandey#, R. Thomas, Saptarshi Basu and Abhijit Sinha Roy	Propensity of aerosol and droplet creation during Oculoplastic procedures: A risk assessment with high-speed imaging amidst COVID-19 pandemic	Indian Journal of Ophthalmology DOI: 10.4103/ijo.IJO_2859_20
149	K.Pandey#, Saptarshi Basu*, Bal Krishnan# and Gautham Vadlamudi#	Dynamic self-tuning, flickering and shedding in buoyant droplet diffusion flames under acoustic excitation	Proceedings of the Combustion Institute (2020) https://doi.org/10.1016/j.proci.2020.06.203
148	S.Advaith#, D. Parida#, U. Chetia#, K.T Aswathi, K. Chattopadhyay and Saptarshi Basu*	Experimental Investigation on Single-Medium Stratified Thermal Energy Storage System	Renewable Energy https://doi.org/10.1016/j.renene.2020.09.092 Volume 164, February 2021, Pages 146-155
147	Rohit Shetty, Nikhil Balakrishnan, Naren Shetty, Prasenjit Kabi#, Durbar Roy#, Sophia Marie Joseph#, Pooja Khamar, Saptarshi Basu, Abhijit Sinha Roy	Quantitative high-speed assessment of droplet and aerosol from an eye after impact with an air-puff amid COVID-19 scenario	Journal of Glaucoma (2020) doi: 10.1097/IJG.0000000000001672 November 2020 - Volume 29 - Issue 11 - p 1006-1016 Highlighted in the November-2020 issue of Journal of Glaucoma

146	S.Kumar [#] , M. Sarath [#] , S.Chaudhuri and Saptarshi Basu [*]	Spray Characteristics and Flow Topologies of High Shear Injector at High Primary Swirl	International Journal of Multiphase Flow (2020) https://doi.org/10.1016/j.ijmultiphaseflow.2020.103393
145	Saptarshi Basu [*] , Prasenjit Kabi, Swetaprovo Chaudhuri, and Abhishek Saha	Insights on drying and precipitation dynamics of respiratory droplets in the perspective of Covid-19	Physics of Fluids https://doi.org/10.1063/5.0037360 INVITED FEATURED ARTICLE Chosen for AIP SCILIGHT AIP Scilight: Airborne drying of respiratory droplets exposes fewer viral particles than on surfaces: DOI: 10.1063/10.0003187
144	Saptarshi Basu, D Rao, Ankur Chattopadhyay, Joita Chakraborty	Dissolution dynamics of a sessile droplet under vertical confinement	Physical Review E (2021) DOI: 10.1103/PhysRevE.103.013101
143	K.Pandey [#] , Saptarshi Basu [*] , Gautham Vadlamudi [#] , Aditya Potnis and Kamanio Chattopadhyay	Self-tuning and topological transitions in a free-falling nanofuel droplet flame	Combustion and Flame (2020) Volume 220, October 2020, Pages 144-156
142	Pooja Khamar, Rohit Shetty, Nikhil Balakrishnan, Prasenjit Kabi, Durbar Roy, Saptarshi Basu, Abhijit Sinha Roy	Aerosol and droplet creation during oscillatory motion of the microkeratome: a high-speed shadowgraphy assessment amidst COVID-19 pandemic	Journal of Cataract and Refractive Surgery (2020) DOI: 10.1097/j.jcrs.0000000000000326 FEATURED ARTICLE PRESS RELEASE https://www.thehindu.com/news/national/karnataka/iisc-researches-track-aerosol-generation-during-surgeries/article32118491.ece
141	Omkar Hegde [#] , Prasenjit Kabi [#] and Saptarshi Basu [*]	Enhancement of mixing in a viscous, non-volatile droplet using contact-free vapor mediated interaction	Physical Chemistry Chemical Physics (2020) 2020,22, 14570-14578 DOI: 10.1039/D0CP01004A

140	Naren Shetty, Luci Kaweri, Pooja Khamar, Nikhil Balakrishnan, A bdur Rasheed#, Prasenjit Kabi#, Saptarshi Basu, Rohit Shetty, Rudy M.M.A. Nuijts a nd Abhijit Sinha Roy	Propensity of aerosol creation during phacoemulsification A risk assessment with high speed shadowgraphy a midst COVID-19 pandemic	Journal of Cataract and Refractive Surgery (2020) DOI: 10.1097/j.jcrs.0000000000000289 PRESS RELEASE https://www.thehindu.com/new s/national/karnataka/iisc- researches-track-aerosol- generation-during- surgeries/article32118491.ece
139	S.Chaudhuri*, S.Basu*, P.Kabi, V.Unni and A. Saha*	Modeling the role of respiratory droplets in Covid-19 type pandemics	Physics of Fluids 32, 063309 (2020) INVITED FEATURED ARTICLE DOI: 10.1063/5.0015984 CHOSEN AS NEWS WORTHY ITEM PRESS RELEASE https://phys.org/news/2020-06- respiratory-droplet-motion- evaporation-covid-type.html Most Read article in Month of July
138	K.Pandey#, Sandeep Hatte#, Keshav Pandey#, Suman Chakraborty and Saptarshi Basu*	Cooperative evaporation in two-dimensional droplet arrays	Physical Review E 101, 043101 (2020) DOI: 10.1103/PhysRevE.101.043101
137	R. Kuppuraj#, Aditya Potnis#, Sonu Kumar# and Saptarshi Basu*	On the Dynamics of sprays in complex gas turbine swirl injectors	Experiments in Fluids 61, 39 (2020) doi:10.1007/s00348-019- 2871-6
136	C.Rao#, Saptarshi Basu*	Phenomenology of disruptive breakup mechanism of a levitated evaporating emulsion droplet	Experimental Thermal and Fluid Science Volume 115, 1 July 2020, 110086
135	Prasenjit Kabi#, Ritam Pal# and Saptarshi Basu*	Moses Effect: Splitting a sessile droplet using vapour mediated Marangoni effect leading to designer surface patterns	Langmuir (2020) https://doi.org/10.1021/acs.langm uir.9b03690
134	C.Rao#, Saptarshi Basu*	Atomization modes for levitating emulsified	Experiments in Fluids 61, 41 (2020) doi:10.1007/s00348-019- 2873-4

		droplets undergoing phase change	
133	D. Roy [#] , K.Pandey [#] , Meneka Banik, Rabibrata Mukherjee and Saptarshi Basu [*]	Dynamics of Droplet Impingement on bioinspired Surface: Insights into Spreading, Anomalous Stickiness and Breakup	Proceedings of the Royal Society A DOI: 10.1098/rspa.2019.0260
132	Khushboo Pandey [#] , Deepu Prabhakaran, and Saptarshi Basu [*]	Review of transport processes and particle self-assembly in acoustically levitated nanofluid droplets	Physics of Fluids Doi: 10.1063/1.5125059 Invited Featured Article
131	L.Raju [#] , P. Kabi [#] and Saptarshi Basu [*]	Evaporation Driven Self-Assembly in a Levitated Nanocolloidal Droplet Can Create a Spatially Varying Photonic Band-Gap	Colloids and Surfaces A (2019) Volume 578, 5 October 2019, 123612
130	Khushboo Pandey [#] , Saptarshi Basu [*]	High Vapor Pressure Nanofuel droplet combustion and heat transfer: insights into droplet burning time scale, secondary atomisation and coupling of droplet deformations and heat release	Combustion and Flame (2019) Volume 209, November 2019, Pages 167-179 https://doi.org/10.1016/j.combustflame.2019.07.043
129	Atmadeep Bhattacharya [#] and Saptarshi Basu [*]	An investigation into the heat release and emissions from counterflow diffusion flames of methane/dimethyl ether/hydrogen blends in air	International Journal of Hydrogen Energy (2019) Volume 44, Issue 39, 13 August 2019, Pages 22328-22346
128	R. Kuppuraj [#] , Aditya Potnis [#] , Sakhti Kumar, D. Sivakumar and Saptarshi Basu [*]	On the influence of geometrical parameters on the spray characteristics of high shear injectors	Experimental Thermal and Fluid Science (2019) DOI: 10.1016/j.expthermflusci.2019.109872
127	R. Kuppuraj [#] , and Saptarshi Basu [*]	Insights into the dynamics of conical breakdown modes in coaxial swirling flow field	Journal of Fluid Mechanics (2018) 853, pp 72-110
126	Srimanta Barui, Asish K.Panda, S.Naskar, R.Kuppuraj, Saptarshi Basu, Bikramjit Basu	3D inkjet printing of biomaterials with strength reliability and cytocompatibility: Quantitative process strategy for Ti-6Al-4V	Biomaterials (2019) https://doi.org/10.1016/j.biomaterials.2019.05.023
125	Pooja Sharma [#] , Atmadeep	Formation of hollow and solid carbon spheres in thermally stressed jet fuel in	Chemical Engineering Science (2019)

	Bhattacharya#, Saptarshi Basu*	the low temperature autoxidation regime	https://doi.org/10.1016/j.ces.2019.05.045
124	Hatte, Sandeep#; Pandey, Keshav#; Pandey, Khushboo#; Chakraborty, Suman, Basu, Saptarshi*	Universal Evaporation Dynamics of Ordered Arrays of Sessile Droplets	Journal of Fluid Mechanics (2019) doi:10.1017/jfm.2019.105
123	O. Hegde#, P. Kabi#, S. Agarwal, Saptarshi Basu*	Controlling Self-Assembly and Buckling in Nano fluid Droplets through Vapour Mediated Interaction of Adjacent Droplets	Journal of Colloid and Interface Science (2019), Volume 541, 1 April 2019, Pages 348-355, https://doi.org/10.1016/j.jcis.2019.01.106
122	Omkar Hegde#, Shubhankar Chakraborty#, Prasenjit Kabi#, and Saptarshi Basu*	Vapor Mediated Control of Microscale Flow in Sessile Droplets	Physics of Fluids (2018) 30, 122103
121	L.Bansal#, P. Seth#, S.Sahoo, R. Mukherjee and Saptarshi Basu*	Beyond Coffee Ring: Anomalous Self Assembly in Evaporating Nanofluid Droplet on a Sticky Biomimetic Substrate	Applied Physics Letters (2018) 113, 213701 (2018)
120	Kabi, Prasenjit#; Chattopadhyay, Bidyendu# ; Bhattacharya, Soumyadip#; Chaudhuri, Swetaprovo; Basu, Saptarshi*	Evaporation-Oscillation Driven Assembly: Micro-tailoring the Spatial Ordering of Particles in Sessile Droplets	Langmuir 34 (42), pp 12642–12652 DOI: 10.1021/acs.langmuir.8b02840
119	Sandeep Hatte#, Lalit Bansal#, Riju Dhar#, Suman Chakraborty, Saptarshi Basu	On the lifetime of evaporating confined sessile droplet	Colloids and Surfaces A (2019) DOI: 10.1016/j.colsurfa.2018.10.008
118	K. Pandey# and Saptarshi Basu*	How Boiling Happens in Nanofuel Droplets	Physics of Fluids DOI: 10.1063/1.5048564 Featured Article
117	Lalit Bansal, Prasenjit Kabi, Apratim Sanyal, Binita Pathak, Saptarshi Basu*	Tailoring the interface of a drying colloidal droplet by substrate heating	Langmuir, Issue 29, 2018 Cover Art

116	A. Tinaikar#, S. Advait, and Saptarshi Basu*	Understanding evolution of vortex rings in viscous fluids	Journal of Fluid Mechanics (2018), vol. 836, pp. 873-909
115	D. Chaitanya Kumar Rao, Srinibas Karmakar, and Saptarshi Basu	Bubble dynamics and atomization mechanisms in burning multi-component droplets	Physics of Fluids https://doi.org/10.1063/1.5035384 Editor's Pick
114	Lalit Bansal#, Pranjali Seth#, Bhubesh Murugappan#, and Saptarshi Basu*	Suppression of coffee ring: (Particle) size matters	Applied Physics Letters 112, 211605 (2018); https://doi.org/10.1063/1.5034119
113	Raju, Lijun#; Chakraborty, Shubhankar#; Pathak, Binita#; Basu, Saptarshi*	Controlling Self Assembly and Topology at Micro-Nano Length-scales using Contact Free Mixed Nanocolloid Droplet Architecture	Langmuir (2018); DOI: 10.1021/acs.langmuir.8b00790
112	Bansal, Lalit#; Sanyal, Apratim#; Kabi, Prasenjit#; Pathak, Binita#; Basu, Saptarshi*	Engineering Interfacial Processes at Mini-Micro-Nano Scales Using Sessile Droplet Architecture	Langmuir (2018); DOI: 10.1021/acs.langmuir.7b04295 Invited Feature Article
111	P. Kabi#, S. Chaudhuri, S.Basu*	Micro to Nanoscale Engineering of Surface Precipitates Using Reconfigurable Contact Lines	Langmuir (2018); DOI: 10.1021/acs.langmuir.7b04368
110	Binita Pathak, Sandeep Hatte, and Saptarshi Basu*	Evaporation dynamics of mixed-nanocolloidal sessile droplets	Langmuir (2017), DOI: 10.1021/acs.langmuir.7b03578
109	Binita Pathak#, Gautam Kar, Suryasarathi Bose and Saptarshi Basu*	Phase Separation and Physico-chemical Processes at Microscopic and Macroscopic Levels in MWCNT Laden Polymer Blends Using a Unique Droplet Based Architecture	Physical Chemistry Chemical Physics (2017); DOI: 10.1039/C7CP03621C Editor's choice: 2017 PCCP HOT Articles
108	Apratim Sanyal#, Saptarshi Basu	Evaporation excites temporal sequence of resonant modes in a sessile droplet perturbed at constant frequency - insights into the universal dynamics of mode transitions	Chemical Engineering Science, Volume 176, 2 February 2018, Pages 294–305
107	Angkur Shaikeea#, Saptarshi Basu	Sessile Nanofluid Droplet Can Act like a Crane	Journal of Colloid and Interface Science

	and Lalit Bansal [#]		https://doi.org/10.1016/j.jcis.2017.10.084 ; Volume 512, 15 February 2018, Pages 497-510
106	SM Basha, LK Bansal, S Basu, A Ambirajan	PERFORMANCE ANALYSIS AND BUBBLE VISUALISATION WITHIN THE EVAPORATOR OF A LOOP HEAT PIPE	Heat Pipe Science and Technology, An International Journal 5 (1-4)
105	Angkur Jyoti Dipanka Shaikeea [#] , Saptarshi Basu [*] , Abhishek Tyagi [#] , Saksham Sharma [#] , Rishabh Hans [#] , Lalit Bansal [#]	Universal representations of evaporation modes in sessile droplets	PLOS ONE https://doi.org/10.1371/journal.pone.0184997
104	S Advaith [#] , K.V Manu [#] , AASHAY TINAIKAR [#] , Utpal CHETIA [#] , and Saptarshi Basu [*]	Interaction of Vortex Ring with a Stratified Finite Thickness Interface	Physics of Fluids 29, Issue 9, 093602 (2017)
103	Lalit Bansal [#] , Sandeep Hatte [#] , Saptarshi Basu [*] , and Suman Chakraborty	Universal evaporation dynamics of a confined sessile droplet	Applied Physics Letters (2017); DOI: 10.1063/1.4996986
102	D. Chaitanya, Srinibas Karmakar and Saptarshi Basu	Atomization characteristics and instabilities in the combustion of multi-component fuel droplets with high volatility differential	Nature Scientific Reports (2017); doi:10.1038/s41598-017-09663-7
101	Kuppuraj, R [#] ; Basu, Saptarshi [*]	Droplets, Sprays and Flows in Combustors: Insights into Various Spatio-temporal Scales	Annals of Indian National Academy of Engineering, Vol XIV, April 2017; ISSN 0973-0540
100	Lalit Bansal [#] , Saptarshi Basu [*] and Suman Chakraborty	Confinement suppresses instabilities in particle-laden droplets	Nature Scientific Reports (2017); DOI: 10.1038/s41598-017-08126-3
99	Kuppuraj, R [#] ; Basu, Saptarshi [*]	On the dynamics of vortex – droplet interactions, dispersion and breakup in a coaxial swirling flow	Journal of Fluid Mechanics (2017); doi:10.1017/jfm.2017.495
98	K.Pandey [#] , K. Chattopadhyay and S. Basu [*]	Combustion dynamics of low vapour pressure nanofuel droplets	Physics of Fluids (2017), 29, 074102 (2017); doi: http://dx.doi.org/10.1063/1.4991752

97	Binita Pathak [#] and Saptarshi Basu*	Phenomenology of break-up modes in contact free externally heated nanoparticle laden fuel droplets	Physics of Fluids (2016), Vol 28, Issue 12, pp 123302; DOI: 10.1063/1.4971162
96	S.Basu*, L. Bansal [#] , A. Miglani [#]	Inner Cover Artwork	Soft Matter, 2016, 12, 4878-4878, DOI: 10.1039/C6SM90093C Inner Cover Artwork
95	Deepu, P. [#] , Kallurkar, S. [#] , Anand, P. [#] , and Saptarshi Basu	Stability of a liquid film flowing down an inclined anisotropic and inhomogeneous porous layer: an analytical description	Journal of Fluid Mechanics (2016) Vol 807, pp 135-154 DOI: https://doi.org/10.1017/jfm.2016.613
94	Kuppuraj, R [#] ; Basu, Saptarshi*	Insights into the dynamics of spray-swirl interactions	Journal of Fluid Mechanics (2017), Vol 810, 82-126
93	Angkur Jyoti Dipanka Shaikha [#] , Saptarshi Basu*, Sandeep Hatte [#] and Lalit Bansal [#]	Insights into Vapor-Mediated Interactions in a Nanocolloidal Droplet System: Evaporation Dynamics and Affects on Self-Assembly Topologies on Macro-to Microscales	Langmuir (2016) 32(40), 10334-10343 DOI: 10.1021/acs.langmuir.6b03024
92	A Sanyal [#] , S Basu*	Evolution of internal flows in mechanically oscillating sessile droplets undergoing evaporation	Chemical Engineering Science (2017); DOI: 10.1016/j.ces.2017.01.057
91	Prasenjit Kabi [#] , Swetaprovo Chaudhuri, and Saptarshi Basu*	Insights into Drying of Noncircular Sessile Nanofluid Droplets toward Multiscale Surface Patterning Using a Wall-Less Confinement Architecture	Langmuir (2016) 32(42), 10977-10986 DOI: 10.1021/acs.langmuir.6b02962
90	Lalit Bansal [#] , Suman Chakraborty, and Saptarshi Basu*	Confinement-induced alterations in the evaporation dynamics of sessile droplets	Soft Matter (2017) DOI: 10.1039/C6SM02429G
89	A Shaikha [#] , S Basu*	Evaporating Sessile Droplet Pair: Insights into Contact Line Motion, Flow Transitions and Emergence of Universal Vaporisation Pattern	Applied Physics Letters (2016) 108 (24), 244102 10.1063/1.4953836

88	A Sanyal [#] , S Basu [*] , S Chaudhuri	Controlling particle deposit morphologies in drying nano-particle laden sessile droplets using substrate oscillations	Physical Chemistry Chemical Physics (2016) 18, 14549 – 14560 10.1039/C6CP01272H
87	A Sanyal [#] , S Basu [*]	How natural evaporation temporally self tunes an oscillating sessile droplet to resonate at different modes	Langmuir (2016) 32 (19), 4784–4791 10.1021/acs.langmuir.6b00902
86	Sandeep Hatte [#] , Mir-Hernández, C., Advait [#] , S [#] , Tinaikar, A. [#] , Chetia, U.K. [#] , Manu, K.V. [#] , Chattopadhyay, K., Weibel, J.A., Garimella, S.V., Srinivasan, V. and Saptarshi Basu [*]	Short and long-term sensitivity of lab-scale thermocline based thermal storage to flow disturbances	Applied Thermal Engineering (2016), 109, 936-948 http://dx.doi.org/10.1016/j.applthermaleng.2016.04.138
85	A Tinaikar [#] , S Advait [#] , U Chetia [#] , KV Manu [#] , S Basu [*]	Spatio-temporal Disruption of Thermocline by Successive Laminar Vortex Pairs in a Single Tank Thermal Energy Storage	Applied Thermal Engineering (2016) 109, 924-935 http://dx.doi.org/10.1016/j.applthermaleng.2016.04.105
84	S Basu [*] , L Bansal [#] , A Miglani [#]	Towards Universal Buckling Dynamics in Nanocolloidal Sessile Droplets: Effect of Hydrophilic to Superhydrophobic Substrates and Evaporation Modes	Soft Matter (2016) 12 (22), 4896 – 4902 DOI: 10.1039/C6SM00837B
83	B Pathak [#] , P Xavier, S Bose, S Basu [*]	Thermally induced phase separation in levitated polymer droplets	Physical Chemistry Chemical Physics (2016) 18 (47), 32477-32485 10.1039/C6CP06283K
82	B. Pathak [#] , Saptarshi Basu [*]	Modulation of buckling dynamics in nanoparticle laden droplets using external heating	Langmuir (2016) 32 (11), 2591–2600; DOI: 10.1021/acs.langmuir.6b00544
81	L Bansal [#] , A Miglani [#] , S Basu [*]	Morphological transitions and buckling characteristics in a nanoparticle laden sessile droplet resting on a	Physical Review E 93, 042605 (2016)

		heated hydrophobic substrate	
80	D. Sanadi [#] , K. Rajamanickam [#] , S. Basu [*]	Analysis of Hollow Cone Spray Injected in an Unconfined, Isothermal, Co-Annular Swirling Jet Environment	Atomization and Sprays [2017] DOI: 10.1615/AtomizSpr.2016016249
79	A. Davanlou, J. Lee, S. Basu and R. Kumar	Effect of viscosity and surface tension on breakup and coalescence of bicomponent sprays	Chemical Engineering Science; Volume 131, 2015, Pages 243–255; DOI: 10.1016/j.ces.2015.03.057
78	B. Pathak [#] , Saptarshi Basu [*]	Deformation pathways and breakup modes in acoustically levitated bicomponent droplets under external heating	Physical Review E (2016) 93 (3), 3103; DOI: 10.1103/PhysRevE.93.033103
77	S. Basu [*] , A. Miglani [#]	Combustion and Heat Transfer Characteristics of Nanofluid Fuel Droplets: A Short Review	International Journal of Heat and Mass Transfer; Vol 96, pp 482–503; DOI: 10.1016/j.ijheatmasstransfer.2016.01.053 Review Article
76	Shaikkea, Angkur [#] ; Basu, Saptarshi [*]	Insight into the Evaporation Dynamics of a Pair of Sessile Droplets on Hydrophobic Substrate	Langmuir (2016) 32 (5), 1309–1318; DOI: 10.1021/acs.langmuir.5b04570
75	R. Santhosh [#] , S. Basu [*]	Transitions and blowoff of unconfined non-premixed swirling flame	Combustion and Flame (2016) 164, 35-52; DOI: 10.1016/j.combustflame.2015.10.034
74	Prasenjit Kabi [#] , Swetaprovo Chaudhuri, Saptarshi Basu [*]	Deployment architecture for controlled morphologies in sessile, mixed colloidal droplets	RSC Advances (2015; Royal Society of Chemistry); DOI: 10.1039/C5RA13635K
73	Manu KV [#] , Pranit Deshmukh [#] , Saptarshi Basu [*]	Rayleigh-Taylor instability in a thermocline based Thermal Storage tank	International Journal of Thermal Sciences (2016) 100 pp 333-345 ; DOI: 10.1016/j.ijthermalsci.2015.10.016
72	L Bansal [#] , A Miglani [#] , S Basu [*]	Universal buckling kinetics in drying nanoparticle laden droplets on a hydrophobic substrate	Physical Review E (2016) 92, 042304 DOI: 10.1103/PhysRevE.92.042304
71	A. Miglani [#] , S. Basu [*]	Coupled Mechanisms of Precipitation and Atomization in Burning Nanofluid Fuel Droplets	Nature Scientific Reports (2015); DOI: 10.1038/srep15008

70	P. Deepu [#] , P. Anand [#] , S. Basu [*]	Stability of Poiseuille flow in a fluid overlying an anisotropic and inhomogeneous porous layer	Physical Review E 92, 023009 (2015); DOI: 10.1103/PhysRevE.92.023009
69	Manu KV [#] , P. Anand [#] , U. Chetia [#] , Saptarshi Basu [*]	Effects of Instabilities and Coherent Structures on the Performance of a Thermocline Based Thermal Energy Storage	Applied Thermal Engineering Volume 87, August 2015, Pages 768–778
68	B. Pathak [#] , S. Basu [*]	Phenomenology and control of buckling dynamics in multicomponent colloidal droplets	Journal of Applied Physics Vol 117, Issue 24, pp 244901 (2015)
67	R. Santhosh [#] , S. Basu [*]	Acoustic response of vortex breakdown modes in a coaxial isothermal unconfined swirling jet	Physics of Fluids 27, 033601 (2015); http://dx.doi.org/10.1063/1.4913703
66	Prasenjit Kabi [#] , Saptarshi Basu, Apratim Sanyal [#] , and Swetaprovo Chaudhuri	Precision Stacking of Nanoparticle Laden Sessile Droplets to Control Solute Deposit Morphology	Applied Physics Letters; 106, 063101 (2015); DOI: 10.1063/1.4907945
65	A. Miglani [#] and S. Basu [*]	Sphere to ring morphology transformation in drying nanofluid droplets in a contact-free environment	Soft Matter (Royal Society of Chemistry); 11.11 (2015), pp 2268-2278. DOI: 10.1039/C4SM02553A
64	U. Idahosa [#] , R. Santhosh [#] , A. Miglani [#] and S. Basu [*]	Response Dynamics of Recirculation Structures in Coaxial Nonpremixed Swirl-Stabilized Flames Subjected to Acoustic Forcing	ASME Journal of Thermal Science and Engineering Applications (2016), 8(1), 011008 Invited paper
63	Binita Pathak [#] , Saptarshi Basu [*]	Comparison of Convective and Radiative Heating Modes on the Thermophysical Changes of a Cerium Nitrate Droplet	ASME Journal of Thermal Science and Engineering Applications, 8(1), 011009 (2016) Invited paper
62	L. Bansal [#] , P. Deepu [#] , S. Basu [*]	Experimental Analysis of Water Vapor Diffusion Through Porous Membranes in a Proton Exchange Membrane Fuel Cell	ASME Journal of Heat Transfer, 137.12, 121005 (2015); DOI: 10.1115/1.4030921 Invited paper
61	A. Sanyal [#] , S. Basu [*] and S. Chaudhuri	Agglomeration front dynamics: Drying in sessile nano-particle laden droplets	Chemical Engineering Science, Vol 123 (2015) pp 164-169; DOI: 10.1016/j.ces.2014.11.020

60	B. Pathak [#] , A. Sanyal [#] and S. Basu [*]	Experimental study of shape transition in an acoustically levitated and externally heated droplet	ASME Journal of Heat Transfer, 137.12, 121006 (2015); DOI: 10.1115/1.4030922 Invited paper
59	P. Deepu [#] , Sameer Dawande [#] , S. Basu [*]	Instabilities in a fluid overlying an inclined anisotropic and inhomogeneous porous layer	Journal of Fluid Mechanics, Vol 762 R2; DOI: 10.1017/jfm.2014.644
58	P. Deepu [#] and S. Basu [*]	Effect of evaporation and agglomeration on droplet shape oscillations	Chemical Engineering Science; Volume 119, 8 November 2014, Pages 212-217; DOI: 10.1016/j.ces.2014.08.033
57	A. Miglani [#] and S. Basu [*]	Effect of particle concentration on shape deformation and secondary atomization characteristics of a burning nanotitania dispersion droplet	ASME Journal of Heat Transfer, Volume 137, 102001 (2015); DOI:10.1115/1.4030394 Invited paper
56	P. Deepu [#] , Shubham Chowdhury [#] and S. Basu [*]	Oscillation dynamics of sessile droplets subjected to substrate vibration	Chemical Engineering Science Volume 118, (2014), Pages 9–19; DOI: 10.1016/j.ces.2014.07.028
55	A. Miglani [#] , S. Basu [*] and R. Kumar	Suppression of instabilities in burning droplets using preferential acoustic perturbations	Combustion and Flame 161 (2014) 3181–3190; DOI: 10.1016/j.combustflame.2014.06.010
54	A. Sanyal [#] , S. Basu [*] , S. Chowdhuri [#] , P. Kabi [#] and S. Chaudhuri	Precision Control of Drying Using Rhythmic Dancing of Sessile Nanoparticle Laden Droplets	Applied Physics Letters 104, 163108 (2014)
53	P. Deepu [#] , S. Basu [*] and R. Kumar	Multimodal Shape Oscillations of Droplets excited by an Air Stream	Chemical Engineering Science; Volume 114, (2014), Pages 85–93; DOI: 10.1016/j.ces.2014.04.019
52	R. Santhosh [#] , A. Miglani [#] and S. Basu [*]	Transition in vortex breakdown modes in a coaxial isothermal unconfined swirling jet	Physics of Fluids 26, 043601 (2014); DOI: 10.1063/1.4870016
51	Uyi Idahosa [#] , S. Basu [*] and Ankur Miglani	System Level Analysis of Acoustically Forced Nonpremixed Swirling Flames	ASME Journal of Thermal Science and Engineering Applications; 6(3), 031015 (2014); doi:10.1115/1.4027297
50	P. Deepu [#] , S. Basu [*]	Spectral response of a droplet in pulsating external flow field.	Physics of Fluids 26, 022103 (2014)
49	Ankur Miglani [#] , S. Basu [*] , R. Kumar	Insight into Instabilities in Burning Droplets.	Physics of Fluids 26, 032101 (2014); http://dx.doi.org/10.1063/1.4866866

			Top downloaded article in the month of March 2014
48	A. Sanyal [#] , S. Basu* and R. Kumar	Experimental analysis of shape deformation of evaporating droplet using Legendre polynomials	Physics Letters A 378 (2014) 539–548; DOI: 10.1016/j.physleta.2013.12.015 [Impact Factor of Journal: 2]
47	A. Sanyal [#] , P. Kumar, S. Basu*	Adsorption Study of Silica Gel Particle for Improvement in Design of Adsorption Beds used in Solar Driven Cooling Units.	Energy Procedia Volume 49, 2014, Pages 656–665; DOI: 10.1016/j.egypro.2014.03.071
46	M. Saleem [#] , L. Bansal [#] , D. Sarma [#] , A. Ambiranjana, P. Kumar, S. Basu*	Solar Thermal Power System Augmented with LHP.	Energy Procedia; Volume 49, 2014, Pages 295–304; DOI: 10.1016/j.egypro.2014.03.032
45	J. Lee, S. Basu and R. Kumar	Comparison and Cross-Validation of Optical Techniques in Different Swirl Spray Regimes.	Atomization and Sprays, 23 (8): (2013); DOI: 10.1615/AtomizSpr.2013008110
44	P. Deepu [#] , S. Basu* and R. Kumar	Dynamics and fracture of ligaments from a droplet on a vibrating surface.	Physics of Fluids 25, 082106 (2013); DOI: 10.1063/1.4817542
43	S. Mishra [#] , R. Santhosh [#] and S. Basu*	Scalar transport in diffusion flame wrapped up by an air and fuel side vortex	International Communications in Heat and Mass Transfer, Volume 47 (2013), Pages 32–40; DOI: 10.1016/j.icheatmasstransfer.2013.07.008
42	R. Santhosh [#] , Ankur Miglani [#] and Saptarshi Basu*	Transition and acoustic response of recirculation structures in an unconfined co-axial isothermal swirling flow.	Physics of Fluids 25, 083603 (2013); DOI:10.1063/1.4817665
41	Saptarshi Basu, Erick Tijerino, and Ranganathan Kumar	Insight into morphology changes of nanoparticle laden droplets in acoustic field.	Applied Physics Letters Vol 102, Issue 14, 141602 (2013)
40	Binita Pathak [#] , Saptarshi Basu* and Ranganathan Kumar	Heat and Mass Transfer and Chemical Transformation in a cerium nitrate droplet	International Journal of Heat and Mass Transfer 63 (2013) pp 301–312

39	Binita Pathak [#] , P. Deepu [#] , Saptarshi Basu [*] and Ranganathan Kumar	Modeling of agglomeration inside a droplet with nanosuspensions in an acoustic field.	International Journal of Heat and Mass Transfer 59 (2013) pp 161– 166
38	A. Miglani [#] , D. Joo, S. Basu and R. Kumar	Nucleation dynamics and pool boiling characteristics of high pressure refrigerant using thermochromic liquid crystals	International Journal of Heat and Mass Transfer 60(2013) pp 188– 200;
37	Abhishek Saha [#] \$, J. Lee\$, S. Basu\$ and R. Kumar\$ \$ Equal contribution by all authors	Breakup and coalescence characteristics of a hollow cone swirling spray.	Physics of Fluids Vol. 24 , 124103 (2012);
36	S. Basu [*] , A. Saha [#] and R. Kumar	Criteria for Thermally Induced Atomization and Catastrophic Breakup of Acoustically Levitated Droplet.	International Journal of Heat and Mass Transfer Volume 59, April 2013, Pages 316–327
35	E. Tijerino\$, S. Basu\$ and R. Kumar\$ \$ Equal contribution by all authors	Nanoparticle agglomeration in an evaporating levitated droplet at different acoustic amplitudes.	Journal of Applied Physics, 113 034307 (2013);
34	Xin Gu, Saptarshi Basu, Ranganathan Kumar	Correlations of Vaporization Performance of Conventional and Biofuel Sprays in a Crossflow Heated Chamber.	International Communications in Heat and Mass Transfer; Volume 39, Issue 10 (2012), Pages 1478– 1486
33	P. Deepu [#] , S. Basu [*] , A. Saha [#] and R. Kumar	Spreading and Atomization of Droplets on a Vibrating Surface in a Standing Pressure Field.	Applied Physics Letters; Vol. 101, Issue: 14 (2012), pp 143108 - 143108-5
32	P. Deepu [#] , S. Basu [*] and R. Kumar	Vaporization dynamics of functional droplets in a hot laminar air jet.	International Journal of Heat and Mass Transfer; 56 (2013) pp 69–79
31	X. Gu, S. Basu and R. Kumar	Vaporization and Collision Modeling of Liquid Fuel Sprays in a Co-axial Fuel and Air Pre-mixer.	International Journal of Heat and Mass Transfer Volume 55, Issue 19 (2012), Pages 5322–5335;
30	Abhishek Saha [#] \$, S. Basu\$ and R. Kumar\$	Scaling analysis: Equivalence of convective	Applied Physics Letters; Vol.100, Issue 20 (2012), 204104

	\$ Equal contribution by all authors	and radiative heating of levitated droplet.	
29	A. Saha#, S. Basu, R. Kumar	Velocity and Rotation Measurements in Acoustically Levitated Droplets	Physics Letters A; Volume 376, Issue 45 (2012), Pages 3185–3191
28	S. Basu*, A. Saha# and R. Kumar	Thermally induced secondary atomization of droplet in an acoustic field	Applied Physics Letters; Vol. 100, Issue: 5, 054101 (2012)
27	D. Vikas#, S. Basu* and P. Dutta	In-situ Measurements of Concentration and Temperature during Transient Solidification of Aqueous Solution of Ammonium Chloride using Laser Interferometry	International Journal of Heat and Mass Transfer; Volume 55, Issue 7, March 2012, Pages 2022–2034
26	X. Gu, S. Basu and R.Kumar	Dispersion and Vaporization of Biofuels and Conventional Fuels in a Crossflow Pre-mixer	International Journal of Heat and Mass Transfer, Volume 55, Issue 1 (2012), Pages 336-346
25	A.Saha#, S.Basu, and R.Kumar	Effects of acoustic-streaming-induced flow in evaporating nanofluid droplets	Journal of Fluid Mechanics; Vol. 692 (2012), pp. 207-219
24	A.Saha#, S.Basu*, and R.Kumar	Particle image velocimetry and infrared thermography in a levitated droplet with nanosilica suspensions.	Experiments in Fluids; Volume 52, Issue 3 (2012), Page 795-807 Invited Article
23	Navid Amini-Manesh, Saptarshi Basu and Ranganathan Kumar	Modeling of a reacting nanofilm on a composite substrate	Energy, Volume 36, Issue 3, March 2011, Pages 1688-1697;
22	A. Saha#, S.Basu, C. Suryanarayana and R.Kumar	Experimental analysis of thermo-physical processes in acoustically levitated heated droplets.	International Journal of Heat and Mass Transfer, 53 (25). pp. 5663-5674 (2010)
21	Virendra Singh, Ajay Singh Karakoti, Amit Kumar, Abhishek Saha#, Saptarshi Basu and Sudipta Seal	Precursor Dependent Microstructure Evolution and Nonstoichiometry in Nanostructured Cerium Oxide Coatings Using the Solution Precursor Plasma Spray Technique.	Journal of the American Ceramic Society, 93 (11). pp. 3700-3708 (2010)

20	Ranganathan Kumar, Erik Tijerno, A.Saha# and Saptarshi Basu	Structural morphology of acoustically levitated and heated nanosilica droplet	Applied Physics Letters, 97 , 123106 (2010)
19	U. Idahosa#, A. Saha#, C.Xu and S.Basu*	Non-Premixed Acoustically Perturbed Swirling Flame Dynamics	Combustion and Flame, Volume 157, Issue 9, September 2010, Pages 1800-1814; Top 25 downloaded articles in the time span of July 2010 to September 2010
18	Abhishek Saha#, R.Kumar and Saptarshi Basu*	Infrared thermography and numerical study of vaporization characteristics of pure and blended bio-fuel droplets	International Journal of Heat and Mass Transfer, Volume 53, Issue 19, September 2010, Pages 3862-3873
17	Baki Cetegen, Saptarshi Basu	Review of Modeling of Liquid Precursor Droplets and Particles Injected into Plasmas and High-Velocity Oxy-Fuel (HVOF) Flame Jets for Thermal Spray Deposition Applications	Journal of Thermal Spray Technology, Volume 18, Numbers 5-6, 769-793, 2009 Invited Article
16	1 Saptarshi Basu*, Derek E. Lambe, Ranganathan Kumar	2 Water vapor and carbon dioxide species measurements in narrow channels	3 International Journal of Heat and Mass Transfer, Volume 53, Issue 4, 2010, Pages 703-714.
15	Navid Amini Manesh, Saptarshi Basu and Ranganathan Kumar	Experimental flame speed in multi-layered nano-energetic materials.	Combustion and Flame, Volume 157, Issue 3, pp 476-480, March 2010;
14	Abhishek Saha#, V. Singh, S. Seal and Saptarshi Basu*	Vaporization and precipitation characteristics of cerium nitrate precursor droplets heated by monochromatic irradiation.	Surface and Coatings Technology 203 (2009) 2102–2115 Invited Article
13	S. Chaudhuri, A. Mukhopadhyay, M.S Biswas, B. M. Cetegen and S.Basu*	Control of Combustion in a Thermally Stabilized Burner	Proceedings of the Institution of Mechanical Engineers, Part A, Journal of Power and Energy, Vol 223 No. A2 pp 127-139

12	4 A. Saha#, S. Seal, B. Cetegen, E. Jordan, A. Ozturk and S. Basu*	Thermo-physical processes in cerium nitrate precursor droplets injected into high temperature plasma	Surface and Coatings Technology 203 (2009) 2081–2091 Invited Article
11	S.Basu*,B.M Cetegen	Modeling of liquid ceramic precursor droplets in a high velocity oxy-fuel flame jet.	Acta Materialia, Vol 56, pp 2750-2759
10	S. Basu, B.M Cetegen	Modeling of thermo-physical processes in liquid ceramic precursor droplets heated by monochromatic irradiation	ASME Journal of Heat Transfer, Vol 130, Issue 7 2007, 071501
9	S. Basu, E.H Jordan, B.M Cetegen	Fluid mechanics and heat transfer of liquid precursor droplets injected into high temperature plasmas.	Journal of Thermal Spray Technology, Volume 17, Number 1, pp 60-72, 2008 Invited Article
8	S. Basu, B.M Cetegen	Modeling of thermo-physical processes in liquid ceramic precursor droplets injected into a plasma jet.	International Journal of Heat and Mass Transfer, Volume 50, Issues 17, August 2007, Pages 3278-3290
7	S. Basu, M.W Renfro, B.M Cetegen	Spatially-resolved optical measurements of water partial pressure and temperature in a PEM fuel cell under dynamic operating conditions.	Journal of Power Sources, 162 (2006), pp 286-293
6	S. Basu, T. Barber, B.M Cetegen	Computational Study of Scalar Mixing in the Field of a Gaseous Laminar Line Vortex.	Physics of Fluids, Vol 19, Issue 5, May 2007, 053601
5	S. Basu, B.M Cetegen	Effect of Hydraulic jump on hydrodynamics and heat transfer in a thin liquid film flowing over a rotating disk analyzed by Integral Method	ASME Journal of Heat Transfer, Vol. 129, May 2007, pp 657-663
4	B.M Cetegen, S. Basu	Soot Topography in a planar diffusion flame wrapped by a line vortex.	Combustion and Flame, 146 (2006), pp 687-697
3	S. Basu, B.M Cetegen	Analysis of hydrodynamics and heat transfer in a thin liquid film flowing over a rotating disk by integral method.	ASME Journal of Heat Transfer, Vol 128, March 2006, pp 217-225
2	S. Basu, H. Gorgan, M.W Renfro, B.M Cetegen	In-situ Simultaneous Measurements of Temperature and Water Partial Pressure in a PEM	Journal of Power Sources, 159 (2006), pp 987-994

		Fuel Cell under Steady State and Dynamic Cycling	
1	S. Basu, H. Xu, M.W Renfro, B.M Cetegen	In-situ optical diagnostics for measurements of water vapor concentration and temperature in PEM fuel cell	ASME Journal of Fuel Cell Science and Technology, Vol 3, February 2006, pp 1- 7

EDITORIALS

- Basu, S. J Indian Inst Sci (2019). <https://doi.org/10.1007/s41745-019-0107-7>: Special Issue on Droplets

OTHER PUBLICATIONS

- D. Chakravortty, S. Basu and K.S Nanadakumar, Rapid response to: Association of ultra-processed food intake with risk of inflammatory bowel disease: prospective cohort study
<https://www.bmj.com/content/374/bmj.n1554/rr>
- D. Chakravortty, S. Basu and K.S Nanadakumar, Rapid response to: Intellectual property waiver for covid-19 vaccines will advance global health equity
<https://www.bmj.com/content/374/bmj.n1837/rr>

10A. PATENTS

1. B.M Cetegen, M.W Renfro, S.Basu, Fiber Optic based in-situ diagnostics for PEM fuel cells. **US Patent Number: 8,268,493 [Granted on September, 2012]**
2. Co-axial-effervescent hybrid atomizer for scramjet engine [**patent granted**]: **Application #: 201741020629; PCT filed; Indian Patent Issued # 321005**
3. A DIFFUSER FOR A SINGLE TANK THERMAL ENERGY STORAGE SYSTEM [**Patent Application Number: 201941011495**]
4. LASER BASED METHOD FOR STUDYING ADSORPTION KINETICS OF ADSORBENT AND ADSORBATE PAIR [**patent filed**]: **Application #: 201741045155; PCT filed: Trial license to be issued to RI Instruments Private Limited**
5. A HYBRID FUEL INJECTOR FOR A BURNER: **Patent filed; Application No: 202141025004**
6. A hybrid sensible and latent heat based thermal energy storage system [**Patent Application # 202141008297**]
7. A METHOD AND SYTSEM FOR DIAGNOSING INFECTED BLOOD USING PRE-TRAINED MACHINE LEARNING MODEL: **Provisional Application No: 202141014327**

8. AN INJECTOR FOR DISPENSING AN EFFERVESCENT FLUID AND A FLUID INJECTOR SYSTEM THEREOF: US Patent Filed: US Patent Application No. 16/621,453

10B. Gallery of Fluid Motion Videos [American Physical Society DFD publications]

- V0081: Dancing liquid sheet - the evolution of liquid sheet in swirl flow, DOI: <https://doi.org/10.1103/APS.DFD.2017.GFM.V0081>
- V0082: Fizz, burst and spray: Journey of bubbles to droplets, <https://doi.org/10.1103/APS.DFD.2017.GFM.V0082>
- V0088: The Growth and Breakdown of a Vortex-ring in a Stably Stratified Fluid, <https://doi.org/10.1103/APS.DFD.2017.GFM.V0088>
- V0030: Nanofuel droplet combustion: <https://doi.org/10.1103/APS.DFD.2018.GFM.V0030>
- V0048: On the interaction of an air vortex with a human eye tear film: APS DFD GFM 2020: <https://doi.org/10.1103/APS.DFD.2020.GFM.V0048>
- V0057: Atomization of levitated droplets via laser-induced breakdown: APS DFD GFM 2020: <https://doi.org/10.1103/APS.DFD.2020.GFM.V0057>
- V0059: ON SECONDARY ATOMIZATION AND BLOCKAGE OF SURROGATE COUGH DROPLETS IN SINGLE AND MULTI-LAYER FACE MASKS: APS DFD GFM 2020: <https://doi.org/10.1103/APS.DFD.2020.GFM.V0059>
- V0060: Aerodynamic breakup of droplets in a shock-induced flow: APS DFD GFM 2020: <https://doi.org/10.1103/APS.DFD.2020.GFM.V0060>
- V0061: On the dynamics of vortex droplet co-axial interaction: APS DFD GFM 2020: <https://doi.org/10.1103/APS.DFD.2020.GFM.V0061>

10C. NNFLIX Videos by Narayana Nethralaya [APPEAR SERIES]

- How high risk are Oculoplastic procedures? Our series of basic science experiments solve this mystery! "PLASTY PLASH" | APPEAR SERIES |

- EPISODE 3: https://www.youtube.com/watch?v=fOWyS-EzXyY&feature=youtu.be&fbclid=IwAR1vAvjmhkwRzcNQMd94zL9cAwEQvN2e8cfFf0LoDpXELCzDCv_SXEqt0rw
- Aerosols during Cataract surgery "THE CATARACT SPLATTER" | APPEAR SERIES | EPISODE 2: https://www.youtube.com/watch?v=uFQjpuf7EdE&feature=youtu.be&fbclid=IwAR2-LYprZz6h28QS8kLVuQY1jiWHLKpSt4Lne3g-nGT3Ynp6_Yv_dYRDEhI
 - The NCT Bepatter | APPEAR SERIES | EPISODE 4: <https://www.youtube.com/watch?v=yim9ZRTcZzs>
 - Aerosol risk in COVID times during retinal surgeries | APPEAR SERIES | EPISODE 5: <https://www.youtube.com/watch?v=YyGMKKbJku4>

11. SELECTED CONFERENCES & INVITED PAPERS

TOTAL = 121

1. Basu, S., Xu, H., Renfro, M. W., and Cetegen, B. M. (2003), In-situ optical diagnostics for measurements of water vapor concentration and temperature in PEM fuel cell, **Proceedings of the Fall Technical Meeting of the Eastern States Section of the Combustion Institute, University Park, PA, 2003**
2. Basu, S., Xu, H., Renfro, M. W., and Cetegen, B. M. (2003), In-situ optical diagnostics for measurements of water vapor concentration and temperature in PEM fuel cell, **RAD-IV THE FOURTH INTERNATIONAL SYMPOSIUM ON RADIATIVE TRANSFER, June 20-25, 2004, Istanbul, TURKEY** arranged by ICHMT (International center for heat and mass transfer) published by Begell House Inc. DOI: 10.1615/ICHMT.2004.RAD-4.440
3. Basu, S., Xu, H., Renfro, M. W., and Cetegen, B. M. (2004), In-situ optical diagnostics for measurements of water vapor concentration and temperature in PEM fuel cell, **First International Conference on Fuel Cell Development and Deployment, Connecticut Global Fuel Cell Center, Storrs, CT, 2004**
4. Basu, S., Xu, H., Renfro, M. W., and Cetegen, B. M. (2004), In-situ optical diagnostics for measurements of water vapor concentration and temperature in PEM fuel cell, **Conference on Fuel Cell Power Sources and Systems, U.S. Army RDECOM, Columbia, SC, 2004**
5. Basu, S., Renfro, M. W., and Cetegen, B. M. (2004), In-situ optical measurements and monitoring of water vapor concentration in PEM fuel cell,

NEW ENGLAND TECHNOLOGY AWARENESS CONFERENCE, September 2004

6. Basu, S., Renfro, M. W., and Cetegen, B. M. (2005), Simultaneous in-situ measurements of temperature and water partial pressure in a PEM fuel cell under steady and dynamic cycling conditions, **Fall Technical Meeting of the Eastern States Section of the Combustion Institute, November 13-16, 2005, University of Central Florida in Orlando**
7. Basu, S. and Cetegen, B. M. (2005), Laser induced incandescence measurements in vortex combustion, **Fall Technical Meeting of the Eastern States Section of the Combustion Institute, November 13-16, 2005, University of Central Florida in Orlando**
8. M. Gell, E. Jordan, N. Padture, B.M Cetegen, S. Basu, L. Xie and X. Ma, Processing-Microstructure Relations in the Solution Spray Process for Making Thermal Barrier Coatings and Dense Coatings, **Proceedings of the Materials Science and Technology Conference and Exhibition, Pittsburgh, PA, pp. 30, September 25-28, 2005.**
9. S.Basu and B.M Cetegen, Modeling of liquid ceramic precursor droplets heated by CO₂ laser irradiation, **5TH National US COMBUSTION MEETING, San Diego - MARCH 25-28, 2007**
10. S.Basu and B.M Cetegen, Ceramic formation in liquid precursor droplets injected into plasmas and premixed flames, **5TH National US COMBUSTION MEETING, San Diego - MARCH 25-28, 2007**
11. S.Basu, M.W Renfro and B.M Cetegen, Spatially Resolved Measurements and Modeling of Water Vapor and Temperature in PEM Fuel Cells, **The Fifth International Conference on FUEL CELL SCIENCE, ENGINEERING and TECHNOLOGY, JUNE 28-30, 2007, New York**
12. S. Basu, S. Chaudhury and B.M Cetegen, Soot Topography in a Planar Diffusion Flame Wrapped by Interacting Line Vortices, **Proceedings of the Fall Technical Meeting of the Eastern States Section, The Combustion Institute, 21-24 October 2007, Charlottesville, VA**
13. E.H. Jordan, M. Gell, P. Bonzani, D. Chen, S. Basu, B. Cetegen, F. Wu, and X. Ma, Making Dense Coatings with the Solution Precursor Plasma Spray Process, Thermal Spray 2007: Global Coating Solution, B.R. Marple, M.M. Hyland, Y.-C. Lau, C.-J. Li, R.S. Lima, and G. Montavon, Eds. (Materials Park, OH, USA), **ASM International, 2007, p 463-470, e-proceedings, ISBN: 13:978-0-87170-855-7 [Citations: 11]**

14. Eric H Jordan, Dianying Chen, Maurice Gell, Baki Cetegen and Saptarshi Basu, Factors Promoting High Density in the Solution Precursor Plasma Spray of Dense Nano Scale Materials, **MS&T'07 Materials Science and Technology 2007 Conference and Exhibition, September 16-20 2007, Detroit, Michigan**
15. Saha, V. Singh, S. Seal, B. Cetegen, E. Jordan and S. Basu, Thermo-physical processes in liquid precursor droplets injected into high temperature plasmas, **2nd International Workshop on suspension and solution thermal spraying 2008, France**
16. Abhishek Saha, Derek Lambe, S. Seal, B. Cetegen, E. Jordan and Saptarshi Basu, Precipitation in liquid precursor droplets heated by a CO₂ laser, **2nd International Workshop on suspension and solution thermal spraying 2008, France**
17. E. Jordan, B. Cetegen, M. Gell, D. Chen, S. Basu, M. Teicholz and X. Ma, Fundamental understanding of the liquid precursor plasma spray process through modeling and experiments, **poster presentation in International Thermal Spray Conference & Exposition 2008**
18. Abhishek Saha, Saptarshi Basu, Sudipta Seal and Virendra Singh, Precipitation kinetics in cerium nitrate precursor droplets heated by monochromatic irradiation, **Nano Florida 2008, Sept 2008**
19. Abhishek Saha and Saptarshi Basu, Thermo-physical Processes in Cerium Nitrate Precursor Droplets Injected into High Temperature Plasma, **poster presentation in 33rd International Conference & Exposition on Advanced Ceramics & Composites (ICACC), Jan 2009**
20. Virendra Singh, Sudipta Seal, Saptarshi Basu and Abhishek Saha, Deposition mechanism of nano ceria coating by Solution precursor plasma spray, **33rd International Conference & Exposition on Advanced Ceramics & Composites (ICACC), Jan 2009**
21. Derek E. Lambe, Kyle Seleski, Ranganathan Kumar and Saptarshi Basu, Novel In-situ Laser Based Diagnostics For Measurement Of Water Vapor And Carbon-Dioxide In The Gas Distribution Channels Of A Fuel Cell, **The Seventh International Conference on Nanochannels, Microchannels, and Minichannels ,June 22-24, 2009 at the POSTECH - Pohang University of Science and Technology, Pohang, South Korea.**

22. S. Choudhuri, S.Basu, D. Lambe, A. Saha and B. Cetegen, Computational study of scalar mixing in the field of interacting Laminar Vortices, **6th US National Meeting of the Combustion Institute in Ann Arbor, MI, May, 2009**
23. S.Basu, B. Dubas, A. Saha and R. Kumar, Vaporization Characteristics of Pure and Blended Bio-Fuel Droplets Injected into Hot Stream of Air, **6th US National Meeting of the Combustion Institute in Ann Arbor, MI, May, 2009**
24. S.Basu, U. Idahosa, A. Saha and C.Xu, Characterization of Swirl Stabilized Flames Dynamics: Transfer Functions And Frequency Response, **6th US National Meeting of the Combustion Institute in Ann Arbor, MI, May, 2009**
25. S.Basu, U. Idahosa, A. Saha and C.Xu, Characterization of Combustion Dynamics In Swirl Stabilized Flames, **ASME Power 2009, Albuquerque, New Mexico, July 2009**
26. S. Basu, D. Lambe, S. Szlendak, R. Kumar, Non-Invasive Detection of Water Vapor and Carbon Dioxide Concentrations In Narrow Channels with Simultaneous Liquid Water Measurement, **Poster Presentation at Gordon Research Conference on Fuel Cells 2009**
27. S.Basu, U. Idahosa, A. Saha, C.Xu, On the Fluid Dynamics of Acoustically Perturbed Non-Premixed Swirling Flames, **Proceedings of the Eastern States Section of the Combustion Institute 2009, University of Maryland College Park, Oct 18-21 2009.**
28. A. Saha, R. Clapp, S.Basu, R. Kumar, Modeling and Experimental Study of Pure and Blended Bio-Fuel Droplets Injected into Hot Stream of Air, **Proceedings of the Eastern States Section of the Combustion Institute 2009, University of Maryland College Park, Oct 18-21 2009.**
29. U Idahosa, A Saha, S Basu, Laser Diagnostics in Acoustically Perturbed Non-Premixed Burner to Visualize Effects of Equivalence Ratio and Swirl-Intensity, **Workshop On application of Laser In Mechanical Industries (WALMI), Jadavpur University, India, January, 2010**
30. A Saha, R Kumar, S Seal, S Basu, Study of Vaporization and Precipitation Characteristics in Precursor Droplets Heated by Monochromatic Irradiation, **Workshop On application of Laser In Mechanical Industries (WALMI), Jadavpur University, India, January, 2010**
31. U. Idahosa, C. Xu and S. Basu, Acoustic Perturbation Effects On The Fluid Dynamics And Swirling Flame Response In A Non-Premixed Co-Flow Burner, **Proceedings of the ASME Turbo Expo 2 (PARTS A AND B) , pp. 1309-1321,**

ISBN: 978-0-7918-4397-0, doi:10.1115/GT2010-23735, ASME Turbo Expo 2010: Power for Land, Sea, and Air, GT 2010; Glasgow; United Kingdom; 14 June 2010 through 18 June 2010

32. A. Saha, E. Tijerino, R. Kumar and S.Basu, IR-Thermography, Laser induced Fluorescence and High speed imaging of Cerium Nitrate Precursor Droplets Heated by Monochromatic Irradiation, **15th International Symposium on Applications of Laser Techniques to Fluid Mechanics 2010, Lisbon, Portugal**
33. E. Tijerino, A. Saha, R. Kumar and S.Basu, Vaporization Characteristics of Acoustically Levitated Nanofluid Droplet, **8th International Conference on Nanochannels, Microchannels, and Minichannels , Montreal, Canada, 2010**
34. E Tijerino, A Saha, R Kumar, S Basu, Acoustically Levitated Nanofluid Droplet Vaporization, **8th International Conference on Nanochannels, Microchannels, and Minichannels, Montreal, Canada, August 1-5, 2010**
35. A. Saha, E. Tijerino, R. Kumar and S.Basu, Radiative heating of acoustically levitated nano-silica droplets: Internal flow pattern leading to ring or bowl shaped structure, **63rd Annual Meeting of the APS Division of Fluid Dynamics Volume 55, Number 16, November 21–23, 2010; Long Beach, California**
36. Navid Aminimanesh[#], Saptarshi Basu and Ranganathan Kumar, Heat transfer analysis of a reacting nanofilm deposited on a composite substrate, **Asia Pacific Conference on Combustion (ASPACC-10), Hyderabad, December 10-13, 2010**
37. A. Saha, E. Tijerino, R. Kumar and S.Basu, Heat transfer and chemical transformation of levitated droplets containing dissolved and undissolved phases, **Asia Pacific Conference on Combustion (ASPACC-10), Hyderabad, December 10-13, 2010**
38. Xin Gu, Saptarshi Basu, Ranganathan Kumar, Numerical Simulation of Atomized Biofuel and conventional Fuel Dispersion and Vaporization in a Crossflow Premixer, **Asia Pacific Conference on Combustion (ASPACC-10), Hyderabad, December 10-13, 2010**
39. Uyi Idahosa and Saptarshi Basu, Fluid dynamics of Swirl Stabilized flames subjected to acoustic forcing, **Asia Pacific Conference on Combustion (ASPACC-10), Hyderabad, December 10-13, 2010**
40. L. Tran, M. Valentino, A. Saha, C. Slabaugh, M. Ricklick, J. Kapat, S. Basu, PIV Study on the Dimple Mid-plane of a Narrow Rectangular Channel with Dimples Applied to One Wall, **ASME Turbo Expo (Paper # GT2011-46132), Proceedings of the ASME Turbo Expo 5 (PARTS A AND B) , pp. 1517-1527,**

ISBN: 978-0-7918-5465-5, doi:10.1115/GT2011-46132, ASME 2011 Turbo Expo: Turbine Technical Conference and Exposition, GT2011; Vancouver, BC; Canada; 6 June 2011 through 10 June 2011

41. Xin Gu, Saptarshi Basu, Ranganathan Kumar, Simulation of Biofuels and Conventional Fuels Dispersion and Vaporization in a Cross-flow Premixer, **23rd Annual Conference on Liquid Atomization and Spray Systems (ILASS Americas) May 15-18, 2011, Ventura, California**
42. Abhishek Saha, Saptarshi Basu, Ranganathan Kumar, Radiatively Heated Levitated Nano-silica droplet: Mechanism of bowl formation, **21st National and 10th ISHMT-ASME Heat and Mass Transfer conference, December 27-30, 2011, Madras**
43. S. Mishra and S. Basu, A computational study of heat transfer, soot production and transport in an acetylene-air laminar diffusion flame in the field of a line vortex, **21st National and 10th ISHMT-ASME Heat and Mass Transfer conference, December 27-30, 2011, Madras**
44. P. Deepu, S. Basu , B. Pathak and Ranganathan Kumar, Vaporization studies of functional droplets in a convective environment, **21st National and 10th ISHMT-ASME Heat and Mass Transfer conference, December 27-30, 2011, Madras**
45. D. Vikas, S. Basu and P. Dutta, Laser Interferometric Measurements of Temperature and Concentration in Solidification of Binary Alloy, **21st National and 10th ISHMT-ASME Heat and Mass Transfer conference, December 27-30, 2011, Madras**
46. Abhishek Saha, Ranganathan Kumar, Saptarshi Basu, Agglomeration and precipitation kinetics on acoustically levitated droplet containing solute particles, **24th European Conference on Liquid Atomization and Spray Systems (ILASS Europe), 5-7 September, 2011, Estoril, Portugal**
47. Ankur Miglani, R Santhosh, S Basu, Dynamic response of acoustically perturbed Isothermal swirling flow field, **Proceedings of the 22nd National Conference on IC Engines and Combustion NIT-Calicut, Kerala, India: 10-13 December, 2011: Paper No: 2- 019**
48. P. Deepu, S. Basu , B. Pathak and Ranganathan Kumar, Vaporization studies of functional droplets in a convective environment, **Proceedings of the 22nd National Conference on IC Engines and Combustion NIT-Calicut, Kerala, India: 10-13 December, 2011**

49. S. Mishra and S. Basu, A COMPUTATIONAL STUDY OF FLAME DYNAMICS ON SOOT PRODUCTION AND TRANSPORT FOR AN ACETYLENE-AIR LAMINAR DIFFUSION FLAME IN THE FIELD OF A CONVECTING LINE VORTEX, **Seventh Mediterranean Combustion Symposium, 11-15 September, 2011, Sardinia, Italy**
50. Gu, Xin; Basu, Saptarshi; Kumar, Ranganathan, Analysis of a Collision Model in a Co-Axial Liquid Fuel Spray in a Heated Air Chamber, **12th International Conference on Liquid Atomization and Spray Systems, September 2-6, 2012, Heidelberg, Germany; ISBN: 978-88-903712-1-9**
51. Lee, Josh; Saha, Abhishek; Basu, Saptarshi; Kumar, Ranganathan, Effects of Injection Pressure on Spray Atomization Characteristics with Measurement Technique Cross-Correlation, **12th International Conference on Liquid Atomization and Spray Systems, September 2-6, 2012, Heidelberg, Germany; ISBN: 978-88-903712-1-9**
52. Deepu, P; Saha, Abhishek; Basu, Saptarshi; Kumar, Ranganathan, Shape Deformation and Atomization of Functional Droplets in Contact with a Vibrating Surface, **12th International Conference on Liquid Atomization and Spray Systems, September 2-6, 2012, Heidelberg, Germany; ISBN: 978-88-903712-1-9**
53. Saha, Abhishek; Basu, Saptarshi; Kumar, Ranganathan, Thermally Induced Breakup of Levitated Droplet, **12th International Conference on Liquid Atomization and Spray Systems, September 2-6, 2012, Heidelberg, Germany; ISBN: 978-88-903712-1-9**
54. B. Pathak, S. Basu, R. Kumar, Agglomeration Dynamics of an Evaporating Acoustically Levitated Droplet, **9th European Fluid Mechanics Conference, September 9-13, 2012, Rome, Italy**
55. A. Saha, S. Basu, R. Kumar, Levitated Droplet Evaporation: Scaling Analysis for Equivalence between Radiative and Convective heating, **9th European Fluid Mechanics Conference, September 9-13, 2012, Rome, Italy**
56. Ankur Miglani, S. Basu and R. Kumar, SHAPE CHANGE DYNAMICS OF ACOUSTICALLY EXCITED NANOCERIA DISPERSION DROPLET UNDERGOING BURNING, **8th World Congress on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Lisbon 2013**
57. P. Deepu, S. Basu and R. Kumar, Characteristics of surface ligaments on ultrasonically excited droplets, **8th World Congress on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Lisbon 2013**

58. R. Santhosh, A. Miglani and S. Basu, MIXING TRANSFER FUNCTION AND COHERENCE CHARACTERISTICS IN ACOUSTICALLY EXCITED SWIRLING FLOW, **8th World Congress on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Lisbon 2013**
59. A. Sanyal, S. Basu and R. Kumar, ORTHOGONAL MODES OF THERMALLY INDUCED OSCILLATIONS OF AN ACOUSTICALLY LEVITATED DROPLET , **8th World Congress on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Lisbon 2013**
60. Santhosh R, Ankur Miglani and Saptarshi Basu, Recirculation structures in isothermal swirling flow field :Transition from vortex breakdown to torroidal form, global acoustic response and possible implications on flame response, **National Propulsion Conference February 21-23, 2013, IIT-Madras**
61. J.Lee, A.Davanlou, S.Basu, R.Kumar, The Effects of Surfactant on Simplex Nozzle Spray Behavior and Its Comparison to Liquid Fuels, **IMECE2013-65116, ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego**
62. Binita Pathak, Saptarshi Basu, COMPARISON OF CONVECTIVE AND RADIATIVE HEATING CHARACTERISTICS OF A CERIUM NITRATE DROPLET, **22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India**
63. Apratim Sanyal, Saptarshi Basu, Ranganathan Kumar, DOMINANT OSCILLATION MODES IN A RADIATIVELY HEATED ACOUSTICALLY LEVITATED DROPLET, **22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India**
64. ***BEST PAPER AWARD**
65. Lalit Bansal, Saptarshi Basu, MEASUREMENT OF WATER VAPOR CONCENTRATION AND MASS FLUX THROUGH A POROUS MEDIA, **22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India**
66. A.Miglani, Saptarshi Basu, Ranganathan Kumar, Self Excited Oscillations in Burning Functional Pendant Droplets, **22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India**
67. P. Deepu, Saptarshi Basu, R. Kumar, SHAPE OSCILLATIONS OF DROPLETS SUSPENDED IN AN AIR JET AT INTERMEDIATE REYNOLDS NUMBERS,

22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India

68. R. Santhosh, A. Miglani, Saptarshi Basu, Non-premixed Swirling Flame Dynamics in Atmospheric Double Concentric Burner, **22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference 2013, organized by IIT Kharagpur, India**
69. A. Sanyal, Saptarshi Basu, Pramod Kumar, Adsorption Study of Silica Gel Particle for Improvement in Design of Adsorption Beds used in Solar Driven Cooling Units, **SolarPACES (Solar Power and Chemical Energy Systems) September 17–20, 2013 in Las Vegas, Nevada, USA**
70. M. Salem, L. Bansal, Saptarshi Basu, Solar Thermal Power System Augmented with LHP, **SolarPACES (Solar Power and Chemical Energy Systems) September 17–20, 2013 in Las Vegas, Nevada, USA**
71. Saleem M Basha, Lalit K Bansal, Saptarshi Basu and Amrit Ambirajan, PERFORMANCE ANALYSIS AND BUBBLE VISUALISATION WITHIN THE EVAPORATOR OF A LOOP HEAT PIPE, **17th International Heat Pipe Conference, Indian Institute of Technology Kanpur, October 13-17, 2013**
72. A. Miglani, Saptarshi Basu, R. Kumar, Shape deformation dynamics of acoustically pulsed functional pendant droplet undergoing burning, **66th Annual Meeting of the APS Division of Fluid Dynamics 2013, Pittsburgh, Pennsylvania**
73. R. Santhosh, A. Miglani and Saptarshi Basu, Transitions in Swirling flows in Double Concentric Burner, **66th Annual Meeting of the APS Division of Fluid Dynamics 2013, Pittsburgh, Pennsylvania**
74. A Sanyal, S Basu, P Kumar, Effect of single silica gel particle adsorption on the transport processes in a humid air stream, **66th Annual Meeting of the APS Division of Fluid Dynamics 2013, Pittsburgh, Pennsylvania**
75. P Deepu, R Kumar, S Basu, Spreading and atomization dynamics of ultrasonically excited droplets, **66th Annual Meeting of the APS Division of Fluid Dynamics 2013, Pittsburgh, Pennsylvania**
76. A Miglani, S. Basu, Secondary atomization pathways in burning functional droplets subjected to travelling pressure wave, **Bulletin of the American Physical Society, 2014, 67th Annual Meeting of the APS Division of Fluid Dynamics, Volume 59, Number 18**

77. S.Basu, R. Santhosh, Acoustic response of an isothermal coaxial swirling jet, **Bulletin of the American Physical Society, 2014, 67th Annual Meeting of the APS Division of Fluid Dynamics, Volume 59, Number 18**
78. D. Sanadi, S. Basu, Characterization of unconfined isothermal hollow cone spray – annular swirling jet interaction, **ASME 2014 Gas Turbine India Conference, New Delhi 15-17, 2014**
79. Dilip Sanadi, Saptarshi Basu, "Characterization of vortical flow structures within swirling jet in an unconfined isothermal environment" Paper #OS10-57 **Eleventh International Conference on Flow Dynamics (ICFD-2014) October 8-10, 2014, Sendai, Miyagi, Japan**
80. R. Santhosh and Saptarshi Basu, “Experimental Study of Transitions in Swirling non-premixed Flames in a Co-flow Atmospheric Burner”, **10th Asia Pacific Conference on Combustion, Beijing, China, July 2015**
81. B. Pathak and Saptarshi Basu, Instabilities in acoustically levitated and laser irradiated bi-component droplet, **ICLASS 2015, Tainan, Taiwan, August 2015**
82. D. Sanadi, K. Rajamanickam, S. Basu, Effect of co-annular, isothermal swirling stream on droplet centricity in the spray field of a hollow cone spray atomizer, **ICLASS 2015, Tainan, Taiwan, August 2015**
83. L. Bansal, S. Basu, Buckling dynamics in evaporating nanoparticles laden droplets on various hydrophobic heated substrates, **90th ACS Colloid and Surface Science Symposium, June 5-8, 2016, Harvard University, Cambridge, MA**
84. B. Pathak, S. Basu, Control of buckling dynamics in contact-free mixed colloidal droplet, **90th ACS Colloid and Surface Science Symposium, June 5-8, 2016, Harvard University, Cambridge, MA**
85. SAPTARSHI BASU, S. Advait, Utpal Chetia, A. Tinaikar, K.V Manu, MIXING DYNAMICS ACROSS A STRATIFIED INTERFACE, **23rd National and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference , 17th to 20th December, 2015 in Trivandrum, Kerala, India**
86. APRATIM SANYAL, Saptarshi Basu, DRYING OF NANO SILICA SESSILE DROPLETS SUBJECTED TO SUBSTRATE OSCILLATIONS, **23rd National and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference , 17th to 20th December, 2015 in Trivandrum, Kerala, India**

87. Study of evaporation dynamics in sessile and extended nanoparticle laden droplets, Prasenjit Kabi, Saptarshi Basu, and Swetaprovo Chaudhuri, **CompFlu -2016, 2-4 January, 2016 -Pune, India**
88. Saptarshi Basu, Droplets, Sprays and Flow in combustors: Insights into different spatio-temporal scales, **invited lecture at INAE Annual Convention, December 8-9 2016, Ahmedabad**
89. Effect of confinement on droplet evaporation, Lalit Bansal*, Sandeep Hatte, Suman Chakraborty, Saptarshi Basu, **DROPLETS 2017, JULY 24-26, 2017, UCLA, LOS ANGELES, CA, USA**
90. Aspects of evaporation of a colloidal droplet confined within a tunable wall-less structure leading to designer surface patterning, P. Kabi, S. Basu, S. Chaudhuri, **18th-22nd June, 2017, 7th International Colloids Conference, Sitges, Spain**
91. **C.90** Assessment of swirl spray interaction in lab scale combustor using time-resolved measurements, K. Rajamanickam, M. Jain, S. Basu, **Bulletin of the American Physical Society, 2017, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, Colorado**
92. **C.91** The growth and breakdown of a vortex-pair in a stably stratified fluid. Advaith. S, A. Tinaikar, Manu K V, S. Basu, **Bulletin of the American Physical Society, 2017, 70th Annual Meeting of the APS Division of Fluid Dynamics, Denver, Colorado**
93. **C92** K.Rajamanickam, S. Basu, Breakup and Dispersion Dynamics of Droplets in Turbulent Swirling Flow Field, **ICLASS 2018 Chicago, IL-USA**
94. **C93** K.Rajamanickam, A. Potinis, S. Basu, Characterization and Dynamics of Spray Flow Field in Gas Turbine Swirl Cup, **ICLASS 2018 Chicago, IL-USA**
95. **C94** K.Pandey, A. Potinis, S. Basu, Enhanced burning rate of jet fuel surrogate seeded with nanoparticles, **ICLASS 2018 Chicago, IL-USA**
96. **C95** K.Rajamanickam, A. Potinis, S. Basu, On The Dynamics Of Gas Turbine Fuel Injector Flows Using Time-Resolved Measurements, **19th International Symposium on Applications of Laser and Imaging Techniques to Fluid Mechanics, Lisbon 2018**
97. **C96** Characterization of the spray cone angles of fuels with nanoparticle additives, Jude Asibor, Khushboo Pandey, Saptarshi Basu, Nwabueze Emekwuru, **ICLASS 2018 Chicago, IL-USA**

98. **C97** Atomisation and combustion characteristics of high-vapour pressure nanofuel droplets, Khushboo Pandey and Saptarshi Basu, **12th Asia Pacific conference on combustion (ASPACC2019)**, 1-5 July, 2019, Combustion Society of Japan, Japan
99. **C98** Bikramjit Basu, Srimanta Barui, Asish K Panda, Sharmistha Naskar, Kuppuraj R, Saptarshi Basu, 3D inkjet printing of biomaterials with strength reliability and cytocompatibility: Quantitative process strategy for Ti-6Al-4V, **TCES-UKSB 2019 (Tissue and Cell Engineering Society and the UK Society for Biomaterials)**, 11 - 13 June 2019, Nottingham
100. Keerthi M.C., Mandeep Sharma, Deepu P, Saptarshi Basu and Rama Govindarajan, Leading edge vortex on a rotating flat wing, **IHMTC-2019, IIT-Roorkee**
101. S. Advait, S.Basu, EXPERIMENTS ON DENSITY INTERFACE WITH SUCCESSIVE VORTEX RINGS, **14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics, Wicklow, Ireland, 2019**
102. **Outstanding paper award**
103. S Basu, D Roy, K Pandey, R Mukherjee, Droplet Impact on dry solid surfaces: Traditional vs Bio-mimetic, **72nd Annual Meeting of the APS Division of Fluid Dynamics, November 23–26, 2019; Seattle, Washington**
104. On the fluid dynamics of tonometry: An experimental and theoretical approach, Saptarshi Basu, Durbar Roy, Abdur Rasheed, Prasenjit Kabi, **73rd Annual Meeting of the APS Division of Fluid Dynamics**
105. **Sunday–Tuesday, November 22–24, 2020**
106. Drying and precipitation of model respiratory droplets in the perspective of Covid-19, Abhishek Saha, Prasenjit Kabi, Swetaprovo Chaudhuri, Saptarshi Basu, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020 Invited Talk**
107. On the dynamics of shock-droplet interaction, Awanish Singh, Shubham Sharma, Saptarshi Basu, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020**
108. Vortex droplet co-axial interaction: insights into the vortex dynamics, Awanish Singh, Shubham Sharma, Saptarshi Basu, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020**

109. On the displacement dynamics and shape oscillation of an impacting water droplet on silicone oil pool at low weber number, Durbar Roy, Saptarshi Basu, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020**
110. Precipitation Dynamics in a Respiratory Droplet Evaporating on a Solid Surface, Prasenjit Kabi, Abdur Rasheed, Shubham Sharma, Saptarshi Basu, Swetaprovo Chaudhuri, Abhishek Saha, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020**
111. S. Sharma, A. P. Singh and S. Basu, “Theoretical modelling of vortex-droplet interaction”, **25th International Congress of Theoretical and Applied mechanics, 22-27 August 2021**
112. S. Chaudhuri, S. Basu, A. Saha, Analyzing the dominant SARS-CoV-2 transmission routes towards an ab-initio SEIR model, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020; Chosen for APS DFD PRESS HIGHLIGHT**
113. K.Pandey, S.Basu, B.Kohli and V. Gautham, Dynamic self tuning, flickering and shedding in buoyant droplet diffusion flames under acoustic excitation, **38th International Symposium on Combustion, Adelaide, Australia, 2021**
114. Sonu Kumar, Raj Sekhar, Swetaprovo Chaudhuri, Saptarshi Basu, Impact of Air-Split Ratio Over Mean and Dynamic Characteristic of Spray Flow Field in Gas Turbine Swirl Injector, **FMFP2020, IIT-Guwahati 2020**
115. A.Saha, S.Chaudhuri, S.Basu, Recent advances in assessing the role of respiratory droplets in spreading of COVID-19, **WFI 2020 Virtual Conference, December 2020**
116. D. Rathod, Pratikash Panda, Saptarshi Basu, Swetaprovo Chaudhuri, Dalton Maurya, Design of an optically accessible single-cup sector of a full-scale annular gas turbine combustor, **AIAA SciTech Conference 2022**
117. Rastogi, Preetika; Krishan, Bal; Rao, D. Chaitanya Kumar; Basu, Saptarshi; Kaisare, Niket S.; Gurappa, Basavaraj M., Evaporation and atomization of ultra-stable emulsion droplets, **Society of Rheology, 92nd Annual meeting, 10th - 14th of October, 2021**
118. A NUMERICAL AND EXPERIMENTAL ANALYSIS OF POOL BOILING OVER A SURFACE WITH RECTANGULAR MICRO-PILLARS,

Suswanth Lingareddy, Shubhankar Chakraborty, Bhavin Rathod, Abhishek Tyagi and Saptarshi Basu, **ATE-HEFAT 2021**

a. BEST PAPER AWARD

119. Majee, Sreeparna; Saha, Abhishek; Chaudhuri, Swetaprovo; Chakravortty, Dipshikha; Basu, Saptarshi, Two-Dimensional evaporation dynamics of a respiratory droplet in context of COVID-19, **5th International Conference on Droplets, 16th-18th of August, 2021**
120. Hegde, Omkar; Rasheed, Abdur; Basu, Saptarshi; Spatio- topological regulation of multiscale dendritic patterns in respiratory droplets using vapor mediated interactions, **Droplets Conference, 16th to 18th August, 2021**
121. Sharma, Shubham; Pinto, Roven; Saha, Abhishek; Chaudhuri, Swetaprovo; Basu, Saptarshi; Can Face Masks atomize cough droplets?, **Droplets Conference, 16th to 18th August, 2021**

12. BOOKS & BOOK CHAPTERS

1. Optical diagnostics and computational modeling of reacting and non-reacting single and multiphase flows (2007); **Publication Number: AAI3269486; ISBN: 054908505X, 9780549085058; Source: Dissertation Abstracts International, Volume: 68-06, Section: B, page: 4083; 252 pages**
2. Mixing Dynamics in Interacting Vortices (2018); S.Basu, S. Chaudhuri, B.M Cetegen, A. Saha, **A. K. Runchal et al. (eds.), Energy for Propulsion, Green Energy and Technology, https://doi.org/10.1007/978-981-10-7473-8_13; ISBN 978-981-10-7472-1; Springer Nature**
3. Rajamanickam K., Mukhopadhyay A., Basu S. (2018) On Primary Atomization in Propulsive Device Fuel Injectors—A Short Review. **In: Basu S., Agarwal A., Mukhopadhyay A., Patel C. (eds) Droplets and Sprays. Energy, Environment, and Sustainability. ISBN:978-981-10-7448-6; Springer, Singapore**
4. Rajamanickam K., Roy S., Basu S. (2018) Novel Fuel Injection Systems for High-Speed Combustors. **In: Basu S., Agarwal A., Mukhopadhyay A., Patel C. (eds) Droplets and Sprays. Energy, Environment, and Sustainability. ISBN:978-981-10-7448-6; Springer, Singapore**

5. Pathak B., Kumar R., Basu S. (2018) Dynamics of Droplet Break-Up. In: Basu S., Agarwal A., Mukhopadhyay A., Patel C. (eds) **Droplets and Sprays. Energy, Environment, and Sustainability.** ISBN:978-981-10-7448-6; Springer, Singapore
6. Saha A., Deepu P., Basu S. (2018) Transport Phenomena in Functional Droplets. In: Basu S., Agarwal A., Mukhopadhyay A., Patel C. (eds) **Applications Paradigms of Droplet and Spray Transport: Paradigms and Applications.** Energy, Environment, and Sustainability. ISBN: 978-981-10-7232-1; Springer, Singapore
7. Ginley D. et al. (2020) Multiscale Concentrated Solar Power. In: Ginley D., Chattopadhyay K. (eds) **Solar Energy Research Institute for India and the United States (SERIUS).** Lecture Notes in Energy, vol 39. Springer, Cham; Online ISBN: 978-3-030-33184-9
8. Abhishek Saha, Sreeparna Majee, Swetaprovo Chaudhuri and Saptarshi Basu (2021) "Evaporation and precipitation dynamics of a respiratory droplet in context of COVID-19" in the book *Drying of Complex Fluid Drops: Fundamentals and Applications*, ISBN-10: 1788017900 ; Royal Society of Chemistry; edited by D. Brutin and K. Sefiane

13. INVITED SEMINARS/KEYNOTE LECTURES

- "Fundamental Studies of different reacting and non-reacting systems", Mechanical Engineering Department, **IIT-Kharagpur, India, June 23rd 2009**
- "Fundamental Studies of different reacting and non-reacting systems", Mechanical Engineering Department, **Jadavpur University, India, June 22nd 2009**
- "Fundamental Analyses of different reacting and non-reacting systems", Mechanical Engineering Department, **IISc-Bangalore, India, 2009**
- "Fundamental Analyses of different reacting and non-reacting systems", Mechanical Engineering Department, **IIT-Kanpur, India, 2009**
- "Thermo-Physical Processes in Acoustically Levitated Functional Droplets Heated by Monochromatic irradiation", **ISRO-IISc Space Technology Cell Research Seminar Series, 2011**

- **Invited Seminar:** “Combustion Dynamics and Fluid Mechanics in Acoustically Perturbed Non-Premixed Swirl-Stabilized Flames”, **Technische Universitaet Darmstadt, Germany, 2011**
- **Keynote Lecture:** “Vaporization and Atomization of Functional Micro Droplets Containing nanoadditives”, **Optische Messtechniken für die Charakterisierung von Transportprozessen an Grenzflächen, Technische Universitaet Darmstadt, Germany, 2011**
- **Invited Seminar:** “Nanoadditives in Liquid and Gaseous Fuels”, **Advanced Research Centre for Powder Metallurgy and New Materials, Hyderabad 2011**
- **Keynote Lecture:** “Shape oscillations and flame dynamics in droplets”, **Indo-US Workshop on Flame Stability, IIT-Madras, 6-8 August, 2012**
- **Keynote Lecture:** “Blowoff Dynamics in Flames”, **NCCRD combustion dynamics workshop, IIT-Madras, 24th August, 2012**
- **Expert Lecture:** “Spray Combustion”, **DST-SERC Summer School on Combustion, DRDL-Hyderabad, July 2012**
- **Expert Lecture:** “Combustion dynamics” [4 lectures]: **DST-SERC Winter School, Jadavpur University Kolkata, December 2012**
- **Expert Lecture:** “Combustion diagnostics” [1 lecture]: **DST-SERB Winter School, IIT-Indore, October 2013**
- **Keynote Lecture:** “A fundamental analysis of droplet combustion”, **International Workshop on Sustainable Energy, Power and Propulsion at Jadavpur University, Kolkata from January 5 – 7, 2015**
- **Invited Seminar:** “Transition and acoustic response of vortex breakdown modes in a co-axial swirling flow and flame”, **Department of Chemical Engineering, IISc, February 2015**
- **Keynote Lecture:** **Unconfined Non-Premixed Swirling Flame: Effect of Swirl Number on Flame Stabilization, International Workshop on Sustainable Energy, Power and Propulsion at Lucknow, from December 20-23, 2015**

- **Invited Talk:** Droplets, Sprays and Flow in combustors: Insights into different spatio-temporal scales, invited lecture at **INAE Annual Convention, December 8-9 2016, Ahmedabad**
- **Keynote Lecture:** Droplets, Sprays and Flow in Combustors: Insights into Different Spatio-temporal Scales, **4th PJ Paul Combustion Meet – 2017, HEMRL Pune**
- **Keynote Lecture:** How a Spray Interacts with Swirling Flow: **International Conference on Sustainable Energy and Environmental Challenges (SEEC-2017); Mohali, Punjab**
- **Invited Talk:** How a Spray Interacts with Swirling Flow: **International Workshop on Energy, Propulsion and Environment, IIT Kanpur-2017**
- **Keynote Lecture:** 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2017), Dates: December 27-30, 2017, **BITS PILANI HYDERABAD**
- **Invited Lecture:** How a spray interacts with swirling flow, **EMU COLLOQUIUM, ENGINEERING MECHANICS UNIT, JNCASR, Bangalore-560 064**
- **Invited Lecture:** Thermocline based thermal energy storage system and corresponding short and long-term dynamics, **19th International Symposium on Eco-Materials Processing and Design Expo on Environment-friendly Surface Engineering Technologies, 21–25 February 2018, Jaipur, India**
- **Distinguished Lecture:** **INTERNATIONAL WORKSHOP on SUSTAINABLE ENERGY, POWER AND PROPULSION;** March 18-22, 2018, hosted by National Institute of Technology (NIT), Kurukshetra and organized in collaboration with Indian Institute of Technology (IIT) Kanpur, University of Maryland, College Park, University of Illinois at Chicago, Analytic & Computational Research Inc. USA. Funded by NSF and ONR. 9th workshop in a series on Status of Combustion in India
- **Invited Lecture:** On the Dynamics of Spray Swirl Interactions in Gas Turbine Swirl Cup, Cardiff University (Gas Turbine Research Center), UK, June 20, 2018

- **Invited Talk:** Fundamental Fluid Dynamics Challenges in Inkjet Printing, Lorentz-Center, Leiden, Netherlands, 2019
- **Invited Seminar:** Spray-swirl Interactions: Some insights, University of Stuttgart, Institute of Aerospace Thermodynamics, July-2019
- **Invited Seminar:** Nanofuel Combustion, TU- Darmstadt, Department of Mechanical Engineering, July-2019
- **Keynote Lecture:** COMPFLU-2019, IISER-Bhopal, December, 2019
- **Invited Lecture:** Workshop on Droplets and Sprays, IISc Bangalore, 26-27 February, 2020
- **Keynote Lecture:** International Workshop on Nanoengineered Interfaces for Energy and Healthcare, 16-17 March, 2020
- **Plenary Lecture:** International e-Colloquium on RECENT ADVANCEMENTS IN FLUID FLOW AND HEAT TRANSFER, October 19-25, 2020, Department of Mathematics, Indian Institute of Technology Roorkee
- **Invited Speaker:** Engineering interfacial transport processes in colloidal droplets at milli-micro-nano lengthscales, ACS Science Connect: Langmuir, October 10-12, 2020
- **Keynote Speaker:** Droplets in COVID 19: 47th National Conference on Fluid Mechanics and Fluid Power (FMFP 2020) during December 9–11, 2020, IIT-Guwahati
- **IISC ME Department Colloquium:** Droplet and aerosols in context of CoViD-19, August 2020
- **Invited Talk:** Drying and precipitation of model respiratory droplets in the perspective of Covid-19, Abhishek Saha, Prasenjit Kabi, Swetaprovo Chaudhuri, Saptarshi Basu, **73rd Annual Meeting of the APS Division of Fluid Dynamics Sunday–Tuesday, November 22–24, 2020**
- **Keynote Lecture:** Droplets 2021 Conference in Darmstadt, Germany, August 16-18, 2021

- **Invited Speaker:** Mechanical Engineering Seminar series, IIT-Ropar, 13th August, 2021
- **Invited Speaker:** Colloquium Collaborative Research Center SFB-TRR 75, November 4, 2021, Stuttgart Communications Tower, Germany
- **Invited Speaker:** Fluid Mechanics at Multiple Spatiotemporal Scales, Recent Trends in Thermo-Fluids (RTTF21) 22nd-26th February 2021 Organized by Department of Mechanical Engineering National Institute of Technology Sikkim
- **Invited Fall Spotlight Seminar:** IJMF Spotlight seminar series, October 5, 2021
- **Invited Seminar:** University of Connecticut, Department of Mechanical Engineering, USA: November 19, 2021

14. CURRENT/ PENDING GRANTS

1. UNIVERSITY OF CENTRAL FLORIDA

TOTAL GRANTS (INTERNAL+ EXTERNAL) = \$ 800500 IN 3 YEARS

Funded Proposals

- **PI, Intramural Grant: Presidential Award for Major Equipment from Office of Research and Commercialization in University of Central Florida.** Total \$ 73000 [funded], 2007
- **PI, Intramural Grant: In-House Research Grant** for project titled , “Study of droplet precipitation under rapid heating conditions as in thermal barrier coating”, Total \$ 7500 [funded], 2008
- **PI, Intramural Grant: In-House Research Grant** for project titled , “Water Management in PEM fuel cells”, Total \$ 7500 [funded], 2009
- **Co-PI, proposal titled, “Florida Center for Advanced Aero-Propulsion Technologies”, State of Florida & US Army. Total \$ 869000 [funded]. My Share : \$ 73000, 2008; PI: J. Kapat**
- **PI, proposal titled, “Combustion dynamics simulation and experiments for gas turbines”, GT analysis and ORC, Total: \$ 64000 [funded]. My Share : \$ 32000, 2007; co-PI: C. Xu**

- **PI**, proposal titled, “Aero-validation of a Nova Duct”, **Siemens AG**, Total \$ 230000 [funded]. **My Share : \$ 115000, 2009; Co-PI: J. Kapat**
- **PI**, proposal titled, “Aero-validation of a Nova Duct-Phase II”, **Siemens AG**, Total \$ 204000 [funded]. **My Share : \$ 102000, 2009; Co-PI: J. Kapat**
- **PI**, FCAAP - Analysis of combustion stability, emission characteristics, fuel atomization and vaporization dynamics of conventional and alternative fuels, **State of Florida. FAA National Center of Excellence.** Total \$ 105000 [funded]. **My Share: \$ 52500, 2008; co-PIs: R. Kumar, R. Chen**
- **Co-PI**, FCAAP: Detailed Study of Flow Interaction and its Impact on Aerodynamic Performance and Heat Transfer in Turbomachinery Passages, **State of Florida. FAA National Center of Excellence.** Total \$ 128000, [funded], **My Share: \$ 35000, 2008; PI: J. Kapat**
- **PI**, UCF/I-4: AERO VALIDATION TESTING FOR Nova Ducts, **Florida Hi-Tech Corridor**, Total \$ 63275, [funded], **My Share: \$ 32000, 2009; Co-PI: J. Kapat**
- **PI**, Provost award for undergraduate teaching equipments, Total \$ 15000 [funded], 2008
- **Co-PI**, proposal titled, “Small Equipment: Infrared Thermography System for Temperature Measurements in Microchannel/Minichannel and Droplet”, **National Science Foundation.** Total \$ 100000 [funded], **My Share: \$ 50000, 2009; PI: R. Kumar**
- **PI**, proposal titled, “Measurements of transients in Midframe, phase IA”, **Siemens AG**, Total \$ 30000 [Funded], **My Share: \$ 15000, 2009; co-PI: J. Kapat**
- **PI**, “Equipment grant: Midframe rig and LDV System”, **Siemens AG**, Total \$ 150000 [Approved], **My Share: \$ 75000, 2010; co-PI: J. Kapat**
- **PI**, “FCAAP: In-situ laser based measurments of vaporization dynamics of biofuel droplets in Acoustic levitator and prevaporize combustor and Computational validation”, **State of Florida. FAA National Center of Excellence.**, Total \$ 60000 [funded], **My Share: \$ 30000, 2010; Co-PI: R. Kumar**

2. INDIAN INSTITUTE OF SCIENCE

TOTAL FUNDING: \$ 3 MILLION

Total External Funding: Rs. 18 crores [2.8 million USD]

Funded Proposals

- **PI (Sole)**, “Novel in situ experimentation of water transport in a PEM fuel cell”, **SERC Fast Track Award for Young Scientists in Engineering Science**
Funded Amount: Rs. 20.5 lacs (\$ 40000)
- **PI (Sole)**, “Experimental Analysis of Bubble Dynamics and Temperature Field in a Dual Compensation Chamber Loop Heat Pipe”, **ISRO-IISc Space Technology Cell**
Funded Amount: Rs. 12.65 lacs (\$ 25000)
- **PI**, “Biofuels: Research Challenges in the Areas of Combustion and Fuel injection”, **Indo-US Science and Technology Forum (Bilateral Workshop)**
Funded Amount: Rs. 4 lacs + Airfare for 15 faculties from India and USA
- **PI**, “Optimization and sizing of air humidifier for 150 kW fuel cell power system”, **Tata Motors Limited**
Funded Amount: Rs. 36.5 lacs (\$ 73000)
- **PI (Sole)**, "Optical Diagnostics of Biofuel Spray Dynamics in a Premixer", **Council of Scientific and Industrial Research Scheme [CSIR]**
Funded Amount: Rs. 12 lacs (\$ 25000)
Funded Amount: Rs. 9 lacs (\$ 18000)
- **PI** (Sole),
“Study of Combustion dynamics in Stratified Swirl Stabilized Burner”,
ARDB Propulsion Panel (DRDO)
Funded Amount: Rs. 25 lacs (\$ 50000)
- **Co-PI**, **SOLAR COOLING AND PRODUCTION OF POTABLE WATER WITH TWO STAGE SILICA GEL WATER ADSORPTION SYSTEM**,
Department of Science and Technology
Funded Amount: 2.5 crores (\$ 500000)
- **Project Leader of CSP-5: Storage and hybridization (Multiscale CSP)**,
Indo-US Clean Energy Center (SERIIUS), **Funded Amount: 40 crores (100 lacs for CSP-5) (My share: \$ 200000)**
- **Member/Project Leader of Spray and Burner rigs**, **National Center for Combustion Research and Development (NCCRD)**, **Funded Amount: 40 crores (My share: \$ 1000000)**
- **PI**, **Unified Correlations for Bubble Dynamics and Bubble visualization within the Evaporator of Loop Heat Pipe and Performance studies of LHP**, **ISRO-IISc Space Technology Cell [18.2 lacs] (\$ 40000)**
- **PI**, **Precipitation, vaporization and flow physics of levitated functional droplets**, **Department of Science and Technology [38 lacs] (\$ 79000)**

- **Co-PI, Fundamental Studies on Transport and Kinetics of adsorption using Silica Gel as an adsorbate, Department of Science and Technology [39 lacs] (\$ 80000)**
- **Co-PI, Atomization, Mixing and Stabilization of Large Hydrocarbon Flames in a Model SCRAMJET Combustor Facility, Brahmos Aerospace Pvt. Limited-Center of Excellence in Hypersonics [5.88 crores](My share: \$ 120000)**
- **PI, Stability and heat transfer analysis of molten salt based Thermocline storage unit, DST-SERI [64 lacs] (\$ 135000)**
- **Swarnajayanti Fellowship [similar to Presidential Young Investigator Award], Department of Science and Technology, Government of India, 2014 [1.7 crores] (\$ 325000)**
- **PI, Design, Development and Testing of High Shear Atomizer in Gas Turbine Combustors, Defense Research and Development Organization-Government of India, [3.3 crores] (\$ 500000)**
- **PI, Detailed Diagnostics in the Single Cup Sector of a Modern Annular Combustor: Global Parameters from Local Interactions, Defense Research and Development Organization-Government of India, [4 crores] (\$ 550000)**
- **PI, IMPRINT: Hybrid: Latent and Sensible heat thermal storage system for medium and high temperature CSP applications [4 crores; \$ 550000]**
- **PI, IGSTC (Indo-German Science and Technology Center): Metal Powder Production for Additive Manufacturing: Total project Value 5.0 crores; India Share: 2.3 crores; German partner TU-Darmstadt**
- **PI, UGC-UKIERI Joint Research Programme (UKIERI-III): Characterization and production of nanofuel (CHAPNA) [33 lacs; \$ 60000]**
- **PI, DST-DAAD: Characterization of Complex Droplets [39 lacs; \$ 62000]**
- **Co-PI, SPARC: Green Bricks for Sustainable Living: do they have strength [50 lacs]**
- **Co-PI, Cascaded Latent Heat Storage (CLHS) for high temperature CSP applications materials development and characterization to lab-scale setup, Department of Science and Technology [6 lacs] (\$ 12000)**
- **Co-PI, Corrosion studies in high-temperature molten salt fluids for advanced CSP plants, Department of Science and Technology [76 lacs] (\$ 150000)**
- **PI, multiple projects with Delkor Tenovo Ltd. [Rs. 30 lacs; \$ 50000]**

Under Consideration

- **Co-PI, Homi Bhabha Center of Excellence in Thermal Storage Systems, BARC [8 crores]**

15. OTHER ACTIVITIES

UNIVERSITY OF CENTRAL FLORIDA

- **Member Graduate Committee in the MMAE Department :** Activities included Ph.D qualifying examination, graduate awards, alignment of course plans for masters, online masters program, discussion on the requirements and criteria for BS/MS program, revision of graduate data collection so that the computational and experimental skills can be assessed, MS track and course consolidation and course revision
- **Chair PhD Qualifier Examination Committee:** Chair of the Committee of Examiners for fluid mechanics, Heat Transfer and Thermodynamics for the Ph.D qualifier examination in the MMAE department at UCF
- **Technical Advisor:** Senior design project titled Combustion dynamics and control of a swirl burner. Four UG students were involved.
- **Member Energy Systems Committee:** Planning and implementation a new industry oriented Masters Program in Energy Systems Engineering.
- **Member MMAE External Relations Committee:** Plan strategy for creating a giving culture among MMAE's alumni and external partners
- **Faculty Mentor [2008-2009]:** NSF REU for small scale engineering.
- **Member Faculty Search Committee:** Coordination and recruitment of tenure track faculties in different disciplines.

INDIAN INSTITUTE OF SCIENCE

- **Member, IISc Solar Energy Programme**

- Member, IISc Energy Storage Systems Initiative
- Member, IISc-DAE Thermal Loop Research Initiative
- Core Member, IISc-DST Combustion Center Research Initiative
- Departmental Expert and Senate Nominee in MSc and PhD Comprehensive Examinations
- Member, Department Laboratory Space Committee
- Core Committee Member, National Center for Combustion Research and Development
- Convener, Department Seminar Series 2012-2013
- Project Leader, CSP-5: Indo-US Clean Energy Center
- Project Leader, WP3: National Clean Coal Research and Development
- Team Member and Leader, IISc GATE Representative Team
- Member, Department Faculty Search Committee
- Department Safety Champion
- Member, Department COVID committee