

## LIST OF PATENT AND PUBLICATIONS: DR. M. SIRAJ ALAM

### List of Patent granted and applied

S. No.	Patent Details	
1.	Patent Title:	GAS-LIQUID ABSORPTION IN MICROCHANNEL
	Application No.:	201611043489, dated: 20/12/2016
	Agency/Country:	India
	Inventors:	K. Kishor, A.K. Chandra, W. Khan, S. Sachan and M. Siraj Alam
	Publishing Date:	22/06/2018
	Current Status:	<b>Granted</b>
	Date of Grant:	28/05/2021
2.	Patent Title:	HUMIDIFICATION OF GAS THROUGH MICROFLUIDIC DEVICES
	Application No.:	201911009370, dated 11/03/2019
	Agency/Country:	India
	Inventors:	W. Khan, K. Kishor, A.K. Chandra, S. Sachan and M. Siraj Alam
	Publishing Date:	29/03/2019
	Current Status:	Application Awaiting Examination

### List of Publications

#### **Papers published/accepted in SCI/Scopus Journals:**

1. Bushra Khatoon, Shabih-Ul-Hasan, M. Siraj Alam, "*CO<sub>2</sub> capturing in Cross T-junction Microchannel using Numerical and Experimental Approach*", accepted for publication, Chemical Papers, 2023, Published by Springer (SCI) e-ISSN: 2585-7290 (Print) 0366-6352.  
<https://doi.org/10.1007/s11696-023-02941-x>
2. Wasim Khan, A. K. Chandra, K. Kishor, Bushra Khatoon, S. Sachan, and M. Siraj Alam, "*Numerical study on mixing of two fluids in a Y-junction microchannel with and without obstructions*", accepted for publication, Theoretical and Computational Fluid Dynamics, May 2023, Published by Springer (SCI) ISSN / eISSN: 0935-4964 / 1432-2250.  
<https://doi.org/10.21203/rs.3.rs-2955131/v1>
3. Bushra Khatoon, Wasim Khan, Shabih-Ul-Hasan, M. Siraj Alam, "*A Review of Fractional Pressure Drop Characteristics of Single Phase Microchannels having different Shapes of Cross Sections*", published online May 3, 2023, Chemical Product and Process Modeling, Published by WALTER DE GRUYTER GMBH, GERMANY, ISSN / eISSN: 1934-2659 / 2194-6159.  
<https://doi.org/10.1515/cppm-2022-0084>
4. Sandeep Yadav, Bushra Khatoon, M. Siraj Alam, "*Hydrodynamics of Shear Thinning Fluid in a Square Microchannel: A Numerical Approach*", accepted for publication in Chemical Product and Process Modelling, 2023, Published by WALTER DE GRUYTER GMBH, GERMANY, ISSN / eISSN: 1934-2659 / 2194-6159.
5. Amreen Naz, Ruby Kumari, Shiva Arun, Shahid Suhail Narvi, M. Siraj Alam, and Pradip K. Dutta, "*Cu (II)-coordinated silica based mesoporous inorganic-organic hybrid material: synthesis, characterization and evaluation for drug delivery, antibacterial, antioxidant and anticancer activities*" Journal of Polymer Research (2023) 30:76.  
<https://doi.org/10.1007/s10965-023-03458-3>

6. Bushra Khatoon, Vikas Kumar Choudhary, Rajesh Kumar, Shailendra K. Pandey, Raghwendra Singh, Ram Naresh, and M. Siraj Alam, "*Enhancement of Heat Transfer Rate in Shell & Tube Heat Exchanger using CuO/Al<sub>2</sub>O<sub>3</sub>-Water based Nanofluids*", Materials Today: Proceedings, 2022, In press. <https://doi.org/10.1016/j.matpr.2022.10.258>
7. Bushra Khatoon, Shoaib Kamil, Hitesh Babu, and M. Siraj Alam, "*Experimental Analysis of Cascade CSTRs with Step and Pulse Inputs*", Materials Today: Proceedings, 2022, In press. <https://doi.org/10.1016/j.matpr.2022.11.037>
8. Bushra Khatoon, Shabih-Ul-Hasan, and M. Siraj Alam, "*Study of Mass Transfer Coefficient of CO<sub>2</sub> Capture in different Solvents using Microchannel: A Comparative Study*", In Computer Aided Chemical Engineering, vol. 49, pp. 691-696. Elsevier, 2022. <https://doi.org/10.1016/B978-0-323-85159-6.50115-9>
9. Wasim Khan, Abhishek K. Chandra, Sadhana Sachan, and Mohammad Siraj Alam, "*Effects of channel hydraulic diameters and flow ratios of two-phase flow in Y-junction microchannels*", Chemical Engineering & Technology, Article ID: CEAT4788, vol. 45, Issue 3, pp. 535-542, 2022, publisher Wiley. <https://doi.org/10.1002/ceat.202100461>
10. Amreen Naza, Shiva Arun, Vidya Singh, Shahid Suhail Narvi, Mohammad Siraj Alam, P.K. Dutta "*Efficient and Reusable Cu (II)-metalated Silica-based Inorganic-Organic Hybrid Catalyst for Dye Degradation*" Journal of the Indian Chemical Society, Vol 99, Issue 1, Page no. 100296, ISSN: 0019-4522, 2022. <https://doi.org/10.1016/j.jics.2021.100296>
11. Amreen Naz, Shiva Arun, Ruby Kumari, Shahid Suhail Narvi and M. Siraj Alam, "*Cu (II)-metalated Silica-based Inorganic-Organic Hybrid: Synthesis, Characterization and its Evaluation for Dye Degradation and Oxidation of Organic Substrates*" Chemical and Biochemical Engineering Quarterly, Vol 35, Issue 3, Year 2021, Published by Croatian Society of Chemical Engineers and Technologists. (SCI) ISSN: 0352-9568, ON 1846-5153. <https://doi.org/10.15255/CABEQ.2020.1906>
12. Gautam Shashi Bala, Kamsonlian Suantak, M. Siraj Alam, "*Equilibrium and thermodynamic aspects of As(III) with temperature onto raw coconut husk and iron impregnated coconut husk*", Research Journal of Chemistry and Environment, Vol. 23, Issue 4, pp. 57-69, **04/2019**, Published By International Congress of Chemistry and Environment (SCI) ISSN: 0972-0626.
13. Wasim Khan, A. K. Chandra, K. Kishor, Sadhana Sachan, and M. Siraj Alam, "*Slug formation mechanism for air–water system in T-junction microchannel: a numerical investigation*", Chemical Papers, Vol. 72, Number 11, pp. 2921-2932, **04/06/2018**, Published By Springer (SCI) ISSN: 2585-7290 (Print) 1336-9075 (Online). <https://doi.org/10.1007/s11696-018-0522-7>.
14. Amreen Naz, Shiva Arun, S S Narvi, M S Alam, Anu Singh, Prabha Bhartiya and P K Dutta, "*Cu(II)-carboxymethyl chitosan-silane schiff base complex grafted on nano silica: Structural evolution, antibacterial performance and dye degradation ability*", Int. J. Biol. Macromol., Vol. 110, pp. 215 - 226, **2018**, Published By Elsevier, (SCI) ISSN: 0141-8130, Published By Elsevier. DOI: <https://doi.org/10.1016/j.ijbiomac.2017.11.112>
15. K. Kishor, A. K. Chandra, W. Khan, P. K. Mishra, and M. Siraj Alam, "*Numerical Study on Bubble Dynamics and Two-Phase Frictional Pressure Drop of Slug Flow Regime in Adiabatic T-junction Square Microchannel*", Chemical and Biochemical Engineering Quarterly, Vol. 31, Issue 3, pp.275-291, **10/2017**, Published By Croatian Society of Chemical Engineers and Technologists. (SCI) ISSN: 0352-9568, ON 1846-5153. <https://doi.org/10.15255/CABEQ.2016.877>
16. S. B. Gautam, M. S. Alam, S. Kamsonlian, "*Adsorptive Removal of As(III) from Aqueous Solution by Raw Coconut Husk and Iron Impregnated Coconut Husk: Kinetics and Equilibrium Analyses*", International Journal of Chemical Reactor Engineering, Vol. 15, Issue 2, pp. 1- 15, **04/2017**,

17. AK Chandra, K Kishor, PK Mishra, MS Alam, "Numerical Investigations of Two-phase Flows through Enhanced Microchannels", *Chemical and Biochemical Engineering Quarterly*, vol.30, Issue 2, pp.149-159, **07/2016**, Published By Croatian Society of Chemical Engineers and Technologists. (SCI) ISSN 0352-9568, ON 1846-5153.  
<https://doi.org/10.15255/CABEQ.2015.2289>
18. S. B. Gautam, M. S. Alam, S. Kamsonlian, "Adsorption of As (III) on iron coated quartz sand: influence of temperature on the equilibrium isotherm, thermodynamics and isosteric heat of adsorption analysis", *International Journal of Chemical Reactor Engineering*, vol.14, Issue 1, pp.289-298, **02/2016**, Published By DE GRUYTER. (SCI) ISSN 1542-6580. <https://doi.org/10.1515/ijcre-2015-0061>.
19. Abhilasha Dixit, Kunal Atal, PK Mishra, M Siraj Alam, "Removal of Mercury (II) through Adsorption on Titania Nanofibers", *Asian Journal of Chemistry*, vol.28, Issue 2, pp. 415-422, **01/2016**, Published by Asian Journal of Chemistry. (SCI) ISSN: 0970-7077, ON 0975- 427X.  
<https://doi.org/10.14233/ajchem.2016.19389>
20. Abhishek Kumar Chandra, Kaushal Kishor, PK Mishra, Md Siraj Alam, "Numerical Simulation of Heat Transfer Enhancement in Periodic Converging-diverging Microchannel", *Procedia Engineering*, vol. 127, pp. 95-101, **01/2015**, Published by Elsevier. (Scopus) ISSN: 1877-7058.  
DOI: <https://doi.org/10.1016/j.proeng.2015.11.431>
21. M. Siraj Alam, and V. K. Agarwal, "Pool Boiling of Liquids & their Mixtures on Enhanced Surfaces at Sub-atmospheric Pressures" *Chemical Engineering Transactions*, Vol. 17, pp 1503-1508, **2009**, Published By AIDIC Servizi S.r. (Scopus), First-edition, 2009, Copyright © 2009, AIDIC Servizi S.r.l., ISBN 978-88-95608-01-3, ISSN 1974-9791.  
DOI: <https://doi.org/10.3303/CET0917251>  
Link: <https://www.cetjournal.it/index.php/cet/issue/view/vol17>
22. M. Siraj Alam, L. Prasad, S.C Gupta, and V. K. Agarwal, "Enhanced Boiling of Saturated Water on Copper Coated Heating Tubes", *Chemical Engineering and Processing: Process Intensification*, Vol. 47, Issue 1, pp 159-167, **01/2008**, Published By Elsevier. (SCI) ISSN: 0255-2701.  
DOI: <https://doi.org/10.1016/j.cep.2007.07.021>
23. L. Prasad, M. Siraj Alam, S.C Gupta, and V.K. Agarwal, "Enhanced Boiling of Methanol on Copper Coated Surface", *Chemical Engineering and Technology*, Vol. 30, No. 7, pp 901-906, **07/2007**, Published By Wiley-VCH Verlag. (Scopus) ISSN 0930-7516.  
DOI: <https://doi.org/10.1002/ceat.200700043>
24. M. Anil, M. Siraj Alam, V. K. Agarwal, and, Kailas Wasewar, "CFD Modeling of Three-Phase Bubble Column: 1. Study of Flow Pattern", *Chemical and Biochemical Engineering Quarterly*, Vol. 21, Issue 3, pp 197-205, **10/2007**, Published By Croatian Society of Chemical Engineers and Technologists. (SCI) ISSN0352-9568.  
<https://doi.org/10.15255/CABEQ.2014.402>
25. S. Bandyopadhyay, M. Siraj Alam, V.K. Agarwal, and Kailas L. Wasewar, "Computer Aided Design (CAD) of Multicomponent Condenser" *Chemical and Biochemical Engineering Quarterly*,

Vol. 21, Issue 2, pp 97–103, **06/2007**, Published By Croatian Society of Chemical Engineers and Technologists. (SCI) ISSN0352-9568.

<https://doi.org/10.15255/CABEQ.2014.416>

26. VK Agarwal, M. Siraj Alam, SC Gupta, “*Mathematical model: For existing multiple effect evaporator systems*”, *Chemical engineering world*, Vol. 39, Issue 5, pp 76–78, **05/2004**, Published by Industrial Publications, India. (Scopus) ISSN: 0009-2517.

#### **B. Book published/accepted:**

1. **An Indian Adaptation of Chemical Reaction Engineering by Octave Levenspiel, 3<sup>rd</sup> Edition, Wiley, 2022. [ISBN:978-93-5424-460-5, ISBN (ebk): 978-93-5424-541-1].**
2. Industrial Application of Nanoscience and Nanotechnology, Vol. -1, Excel India Publishers 2020, Editors: M. Siraj Alam, Animeh K. Ojha, Naresh Kumar and Ankur Gaur, (ISBN:978-93-89947-256-7)

#### **C. Book Chapter published/accepted:**

1. **M. Siraj Alam, Shoaib Kamil, Bushra Khatoon, Shabih Ul Hasan and Antarim Datta “Introduction to Novel Reactors” An Indian Adaptation of Chemical Reaction Engineering by Octave Levenspiel, 3<sup>rd</sup> Edition, Chapter-30, Pages 803-821, 2022 [ISBN:978-93-5424-460-5, ISBN (ebk): 978-93-5424-541-1].**
2. Wasim Khan, A. K. Chandra, Sadhana Sachan, and M. Siraj Alam, “*Liquid-Liquid Two Phase Flow and Heat Transfer in Microchannel*” Industrial Application of Nanoscience and Nanotechnology, Volume-1, Chapter -5, Pages 43-62, December 2020. (ISBN:978-93-89947-256-7).
3. Bushra Kathoon, Vikas K. Choudhary, Wasim Khan, Shabih-Ul-Hasan and M. Siraj Alam, “*Kinetic Study of CO<sub>2</sub> Capture using Amines in Conventional and Microfluidic Devices*” Industrial Application of Nanoscience and Nanotechnology, Volume-1, Chapter -8, Pages 83-97, December 2020. (ISBN:978-93-89947-256-7).
4. Vikas K. Choudhary, Bushra Kathoon, Sadhana Sachan and M. Siraj Alam, “*Liquid-Liquid Extraction in Microchannel: A Brief Review*” Industrial Application of Nanoscience and Nanotechnology, Volume-1, Chapter -10, Pages 111-126, December 2020. (ISBN:978-93-89947-256-7).
5. Antarim Datta, Deepsikha Singh, M. Siraj Alam and Shabih-Ul-Hasan, “*PEMs for Direct Methanol Fuel Cells-Geological Structure Viewpoint for structural System*” Industrial Application of Nanoscience and Nanotechnology, Volume-1, Chapter -13, Pages 147-162, December 2020. (ISBN:978-93-89947-256-7).
6. Amreen Naz, Shiva Arun, Shahid Suhail Narvi, Mohammad Siraj Alam, “*Inorganic-Organic Hybrid Materials: Classification, Synthetic Strategies and Applications*”, Progressive Exposure of Research in the Current Scenario: The Futuristic Wisdom, 2020, Chapter 15, Page No. 180-192 (ISBN 978-81-938068-7-6), BELVEDERE PRESS, Prayagraj.

#### **D. Papers published/accepted in Non- SCI/Scopus Journals:**

1. Abhishek Kumar Chandra, Kaushal Kishor, Wasim Khan, Dhananjay Singh, MS Alam, “*Single Phase Fluid Flow in Series of Microchannel Connected via Converging-Diverging Section with or without Throat*”, *World Academy of Science, Engineering and Technology, International Journal*

- of Chemical, Molecular, Nuclear, Materials and Metallurgical Engineering*, vol.11, Issue 8, pp.590-596, 07/2017, Published by World Academy of Science.
2. Abhilasha Dixit, PK Mishra, MS Alam, "*Titania Nanofibers: A Potential Adsorbent for Mercury and Lead Uptake*", *International Journal of Chemical Engineering and Applications*, vol.8, Issue 1, pp.75, 02/2017, Published by IACSIT Press, ISSN 2010-0221.
  3. Amreen Naz, Shiva Arun, Shahid Suhail Narvi, Mohammad Siraj Alam, Pradip Kumar Dutta, "*Nano-Silica Supported Chitosan-Schiff's Base Cu (II) hybrid: Synthesis, Characterization and Antibacterial Study*", *Asian Chitin Journal*, 13 (2017) 31-36.
  4. Abhilasha Dixit, M. S. Alam, P.K. Mishra, "*Kinetics, Thermodynamics and Mass Transfer Studies on Application of Titania Nanofibers for Heavy Metal Adsorption*", *International Journal for Research in Applied Science & Engineering Technology*, vol.3, Issue III, pp.121-130, 03/2015, Published By IJRASET, ISSN 2321-9653.
  5. Manish Gupta, Akhilesh Kumar Choudhary, Mohd Siraj Alam, "*Effect of Trust, Satisfaction and Other Relationship Dimensions on Supplier Relationship Management*", *Review of Integrative Business and Economics Research*, vol.3, Issue 2, pp.17, 07/2014, Published by Society of Interdisciplinary Business Research, ISSN: 2304-1013.

#### **E. Papers published/accepted in Conference Proceedings:**

1. Bushra Khatoon, Shabih-Ul-Hasan, and M. Siraj Alam, "*Study of Mass Transfer Coefficient of CO<sub>2</sub> Capture in different Solvents using Microchannel: A Comparative Study*", Proceedings of the 14<sup>th</sup> International Symposium on Process Systems Engineering – PSE 2021+, June 19-23, 2022, Kyoto, Japan, 2022, Vol. 3, ISBN (Volume 3): 978-0-443-18726-1, ISBN (SET) 978-0-323-85159-6, Elsevier.
2. Shashi Bala Gautam, and M. Siraj Alam, "*Fixed-Bed Column Analysis in the Adsorption of an as (III) from an Aqueous Solution Using Iron Impregnated Coconut Husk Adsorbent*" Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, April 14-16, 2022 Page 169, Paper ID:68. ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
3. Bushra Khatoon, Vikas Kumar Choudhary, Shabih-Ul-Hasan, and M. Siraj Alam, "*Numerical Study of Non-Newtonian Fluid Flow Behaviour in T- Type Microchannel*" Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 371-372, April 14-16, 2022. Paper ID:95, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
4. Antarim Dutta, Shabih-Ul-Hasan, and M. Siraj Alam, "*A Conceptual Design Algorithm for Hybrid Reactive Distillation Columns for Cyclic Reaction Schemes*" Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 373-374, April 14-16, 2022. Paper ID:111, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
5. Priya Kushwaha, Bushra Khatoon, Shabih-Ul-Hasan, and M. Siraj Alam "*Effectiveness of Nanofluid as a Coolant in Heat Exchange Devices*" Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 131, April 14-16, 2022. Paper ID:137, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
6. Sandeep Yadav, Shabih-Ul-Hasan, Bushra Khatoon, and M. Siraj Alam "*Hydrodynamics of Shear Thinning Fluid in a Square Microchannel: A Numerical Approach*" Proceeding, International

- Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 346-347, April 14-16, 2022. Paper ID:139, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
7. Rishabh Sharma, Srijan Pandey, Mahendra Pratap Singh, Mayank Upadhyay and, M. Siraj Alam, “*Enhancement of Heat Transfer Behaviour in Plate Heat Exchanger using Nanofluids*” Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 318-319, April 14-16, 2022. Paper ID:144, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
  8. M. Siraj Alam, Bushra Khatoon, Shoaib Kamil, and Hitesh Babu “*Experimental Analysis of Cascade CSTRs with Step and Pulse Inputs*” Proceeding, International Conference on Technological Interventions for Sustainability, Chem-Conflux 2022, Page 438-439, April 14-16, 2022, ISBN: 978-93-94086-16-6, EXCELLENT PUBLISHING HOUSE, New Delhi.
  9. Rajesh Kumar, Bushra Khatoon, M. Siraj Alam, Shailendra K. Pandey, Raghwendra Singh and Ram Naresh “*Design of Shell and Tube Heat Exchanger: In Application of Nano Fluids*” Proceedings of the International Conference on Recent Advances in Science and Engineering (RASE-2021) Rajkiya Engineering College Sonbhadra, India, Feb 26-27, 2021.
  10. Bushra Khatoon, Vikas K. Choudhary, Wasim Khan, Shabih-Ul-Hasan, and M. Siraj Alam, “*Study of Mass Transfer Coefficient of CO<sub>2</sub> Capture in different Solvents using Microchannel: A Comparative Study*” Proceedings of the 15th international conference on Chemical and Process Engineering (ICheap15), May 23-26, Naples, Italy, 2021. VOL. 86, ISBN 978-88-95608-84-6; ISSN 2283-9216.
  11. Shashi Bala Gautam, Siraj M Alam and Suantak Kamsonlian, “*Sorption of As (III) ion onto the surface of raw and modified coconut husk in fixed bed column*” Proceeding, International Conference on Energy and Environmental Technologies for Sustainable Development, Chem-Conflux 2020, Page 104, February 14-16, 2020. Paper ID:196, ISBN: 978-93-86238-86-3, EXCELLENT PUBLISHING HOUSE, New Delhi.
  12. W. Khan, B. Khatoon, A. K. Chandra, K. Kishor, S. Sachan and M. Siraj Alam, *Numerical study of two-phase fluid flow in a T-junction microchannel*, Proceedings of the National Conference on Computational Modelling of Fluid Dynamics Problems (CMFDP-2019) NIT Warangal, India – Jan 18-20, 2019, Paper No. 185537.
  13. Abhishek Kumar Chandra, Wasim Khan, Vaibhav Sharma, Sadhana Sachan and M S Alam “*Liquid-Liquid Two Phase Flow and Heat Transfer in Microchannel*” Proceedings of the National Conference on “Industrial Applications of Nanoscience& Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 9, Paper ID: IANN2019-13.
  14. Wasim Khan, Bushra Khatoon, A. K. Chandra, Sadhana Sachan, M. Siraj Alam “*Hydrodynamic Study of Two-phase fluid Flow in T- junction Microchannel*” Proceedings of the National Conference on “Industrial Applications of Nanoscience& Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 10-11, Paper ID: IANN2019-15.
  15. Amreen Naz, Prabha Bhartiya, Ruby Kumari, Shahid Suhail Narvi, M. Siraj Alam “*Drug Delivery, Antioxidant and Antibacterial Studies of Nano-Silica Supported Cu (II)-Metalated Inorganic-Organic Hybrid Material*” Proceedings of the National Conference on “Industrial Applications of Nanoscience& Technology (IANN-2019) jointly organized by the Department of Physics and

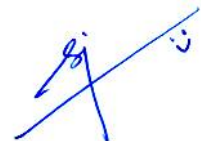
Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 14-15, Paper ID: IANN2019-22.

16. Bushra Khatoon, Vikas K. Choudhary, Wasim Khan, Shabih-Ul-Hasan, M. Siraj Alam, “*Kinetic Study of CO<sub>2</sub> Capture Using Amines in Conventional and Microfluidic Devices*”, Proceedings of the National Conference on “Industrial Applications of Nanoscience & Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 16-17, Paper ID: IANN2019-25.
17. Rashmi Priya, Wasim Khan, and M. Siraj Alam, “*Enhancement of Heat Transfer Using Mixture of Nanofluids*”, Proceedings of the National Conference on “Industrial Applications of Nanoscience & Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 19-20, Paper ID: IANN2019-30.
18. Rajesh Kumar, Wasim Khan, Parul Katiyar, M. Siraj Alam “*Numerical Analysis of Double Pipe Heat Exchanger Heat Transfer Performance using Al<sub>2</sub>O<sub>3</sub>- Water Base Nanofluid as a Coolant*” Proceedings of the National Conference on “Industrial Applications of Nanoscience & Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 23, Paper ID: IANN2019-36.
19. Vikas K. Choudhary, Bushra Khatoon, Wasim Khan, Sadhan Sachan, M. Siraj Alam “*Liquid-Liquid Extraction in Microchannel*” Proceedings of the National Conference on “Industrial Applications of Nanoscience & Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 28, Paper ID: IANN2019-51.
20. Ruby Kumari, Amreen Naz, Prabha Bhartiya, Shahid Suhail Narvi, M. Siraj Alam “*Synthesis of Inorganic-organic hybrid Materials and Their Application in Drug Delivery, Antibacterial and Antioxidant Activity*” Proceedings of the National Conference on “Industrial Applications of Nanoscience & Technology (IANN-2019) jointly organized by the Department of Physics and Department of Chemical Engineering, MNNIT Allahabad, Prayagraj, November 15-16, 2019, Page 46-47, Paper ID: IANN2019-68.
21. Wasim Khan, Hitesh Babu, Abhishek Kumar Chandra, Kaushal Kishor, Sadhana Sachan and M. Siraj Alam, “*Hydrodynamics Study of Two-Phase Flow in Microchannels of Different Diameters and Flow Ratios*”, 44<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power (FMFP – 2017), Dec. 14-16<sup>th</sup>, 2017. Paper Id- 176.
22. M Vishwakarma, W Khan, M. S. Alam, “*Nucleate Pool Boiling of Al<sub>2</sub>O<sub>3</sub> -Water Based Nanofluid*” Proceedings of the CHEMCON 2017, held at ChED, Haldia Institute of Technology during December 27 -30. 2017, Paper ID: MSO00165.
23. H Babu, M Vishwakarma, W Khan, M. S. Alam, “*Effect of Pipe Thickness on Noise Generation of Flowing Fluids in T-Shaped Circular Channel*” Proceedings of the CHEMCON 2017, held at ChED, Haldia Institute of Technology during December 27 -30. 2017, Paper ID: MSO00166.
24. W Khan, H Babu, A K Chandra, K Kishor, S Sachan M. S. Alam, “*Effect of Contact Angle and Fluid Properties on Liquid-Liquid Two Phase Flow in Microfluidic Devices*” Proceedings of the CHEMCON 2017, held at ChED, Haldia Institute of Technology during December 27 -30. 2017, Paper ID: MSO00167.

25. Abhishek Kumar Chandra, Kaushal Kishor, Wasim Khan, Dhananjay Singh, M. S. Alam, "*Single Phase Fluid Flow in Series of Microchannel Connected via Converging-Diverging Section with or without Throat*", *International Conference on Chemical Engineering and Single Molecule Microscopy (ICCESMM 2017)*, Kuala Lumpur, Malaysia, pp. 2313-2319, August 24-25, 2017, Published by World Academy of Science. eissn: 2010-3778, pissn: 2010-376M
26. Wasim Khan, Abhishek K Chandra, Kaushal Kishor, Sadhana Sachan, M Siraj Alam, "*Hydrodynamics and simulation studies of liquid-liquid slug flow in micro-capillaries*", *IEEE International Conference on Advances in Mechanical, Industrial, Automation and Management Systems (AMIAMS-2017)*, Department of Mechanical Engineering, MNNIT Allahabad, pp.35, February 03-05 2017, Published By IEEE. ISBN NO 978-1-5090-5674-3.
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