Publications

Dr S JAYAVEL

Journal Publications

1. Rajendran Senthil Kumar and S Jayavel. Forced convective air-cooling effect on electronic components of different geometries and orientations at flow shedding region. *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 8(4):597–605, 2018

2. R Deepakkumar and S Jayavel. Effect of local waviness in confining walls and its amplitude on vortex shedding control of the flow past a circular cylinder. *Ocean Engineering*, 156:208–216, 2018

3. Rajendran Senthil Kumar and S Jayavel. Influence of flow shedding frequency on convection heat transfer from bank of circular tubes in heat exchangers under cross flow. *International Journal of Heat and Mass Transfer*, 105:376–393, 2017

4. R Deepakkumar, S Jayavel, and Shaligram Tiwari. Cross flow past circular cylinder with waviness in confining walls near the cylinder. *Journal of Applied Fluid Mechanics*, 10(1), 2017

5. R Deepakkumar, S Jayavel, and Shaligram Tiwari. A comparative study on effect of plain-and wavy-wall confinement on wake characteristics of flow past circular cylinder. *Sādhanā*, 42(6):963–980, 2017

6. R Deepakkumar and S Jayavel. Air side performance of finned-tube heat exchanger with combination of circular and elliptical tubes. *Applied Thermal Engineering*, 119:360–372, 2017

7. C Gurunathan, R Gnanamoorthy, and S Jayavel. Effect of reinforcement forms in selectively reinforced polymer composite: temperature distribution under sliding contact condition. *International Journal of Plastics Technology*, 20(2):265–278, 2016

8. R Deepakkumar, S Jayavel, and Shaligram Tiwari. Computational study of fluid flow characteristics past circular cylinder due to confining walls with local waviness. In *Journal of Physics: Conference Series*, volume 759, page 012083. IOP Publishing, 2016

9. C Gurunathan, R Gnanamoorthy, and S Jayavel. Prediction of frictional heating and temperature distribution in selective ceramic-reinforced polymer composite. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 228(12):1433–1442, 2014

10. S Jayavel and Shaligram Tiwari. Advection transport model of vortex enhanced heat transfer. *International Journal of Heat and Mass Transfer*, 55(11-12):3273–3287, 2012

11. S Jayavel and Shaligram Tiwari. Effect of vortex generators and integral splitter plate on heat transfer and pressure drop for laminar flow past channel-confined tube banks. *Heat Transfer Engineering*, 31(5):383–394, 2010

12. S Jayavel and Shaligram Tiwari. Effect of tube spacing on heat transfer performance of staggered tube bundles in the presence of vortex generators. *Journal of Enhanced Heat Transfer*, 17(3), 2010

13. S Jayavel and Shaligram Tiwari. Finite volume algorithm to study the effect of tube separation in flow past channel confined tube banks. *Engineering Applications of Computational Fluid Mechanics*, 4(1):39–57, 2010

14. S Jayavel, Shaligram Tiwari, Gautam Biswas, and Mihir Sen. Kinematics of a fluid particle due to interaction of fixed inviscid vortex filaments in presence of external translation and pulsation. *International Journal of Fluid Mechanics Research*, 37(2), 2010

15. S Jayavel and Shaligram Tiwari. Numerical investigation of incompressible flow past circular tubes in confined channel. *CFD Letters*, 1(1):1–14, 2009

16. S Jayavel and Shaligram Tiwari. Numerical study of heat transfer and pressure drop for flow past inline and staggered tube bundles. *International Journal of Numerical Methods for Heat & Fluid Flow*, 19(8):931–949, 2009

17. S Jayavel and Shaligram Tiwari. Numerical study of flow and heat transfer for flow past inline circular tubes built in a rectangular channel in the presence of vortex generators. *Numerical Heat Transfer, Part A: Applications*, 54(8):777–797, 2008

18. S Jayavel, Pratish P Patil, and Shaligram Tiwari. Interaction of a skewed rankine vortex pair. *Physics of Fluids*, 20(8):083601, 2008

Book Chapters

1. Mahammad Sehzad Alli and S Jayavel. Numerical study on performance of savonius-type vertical-axis wind turbine, with and without omnidirectional guide vane. In *Numerical Heat Transfer and Fluid Flow*, pages 449–455. Springer, 2019

2. D Sathishkumar and S Jayavel. Effect of channel confinement and hydraulic diameter on heat transfer in a micro-channel. In *Numerical Heat Transfer and Fluid Flow*, pages 441–448. Springer, 2019

Conference Publications (from 2006 to till date)

1. Arshdeep Singh, Siga Satya Sekhar, Jayavel S, Sudhir Varadarajan Numerical study on the effect of impeller geometry on pump performance. Proceedings of the International Conference on Applied Mechanical Engineering Research (ICAMER2019), NIT Warangal, India – May 02-05, 2019.

2. J. Ramarajan and S. Jayavel, Study on Performance of Savonius Type Vertical Axis Wind Turbine. Proceedings of 45rd National and 7th International Conference on Fluid Mechanics and Fluid Power, IIT Bombay, Mumbai, December 10-12, 2018.

3. Varun Gupta, J. Ramarajan and S. Jayavel, Design of Rotor for Savonius Type Vertical Axis Wind Turbine. Presentation at International Conference on Small Wind Turbine. Organized by National Institute of Wind Energy (NIWE), Chennai, December 10-13, 2018.

4. Mahammad Sehzad Allia and S. Jayavel, Numerical study on performance of savonius type vertical axis wind turbine, with and without omni-directional guide vane. Proceedings of International Conference on Numerical Heat Transfer and Fluid Flow (NHTFF-2018), NIT Warangal – January 19-21, 2018.

5. D. Sathish Kumar and S. Jayavel, Effect of channel confinement and hydraulic diameter on heat transfer in a micro-channel. Proceedings of International Conference on Numerical Heat Transfer and Fluid Flow (NHTFF-2018), NIT Warangal – January 19-21, 2018.

6. Y. Sai Krishna, S. Jayavel and V. Sudhir, CFD analysis of centrifugal pump performance with different impeller geometries. Proceedings of 7th International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM 2017), IIT Kharagpur, December 28-30, 2017.

7. R. Deepakkumar and S. Jayavel, Numerical simulation of flow past a circular cylinder and the effect of rotating control cylinder on vortex shedding, Proceedings of Computational Science Symposium, IISc Bangalore, March 16-18, 2017.

8. R. Deepakkumar and S. Jayavel, Steady flow behavior of confined cylinder wake with local waviness in the confining walls, Proceedings of Computational Science Symposium, IISc Bangalore, March 16-18, 2017.

9. J. Manogna and S. Jayavel, Numerical investigation of flow and thermal characteristics in heat-sink due to cooling fan and impinging jet, Proceedings of Computational Science Symposium, IISc Bangalore, March 16-18, 2017.

10. R. Deepakkumar and S. Jayavel, A comparative study of cross confinement effect on flow past circular cylinder due to plain and wavy walls, Proceedings of the 6th International and 43rd National Conference on Fluid Mechanics and Fluid Power, MNNITA, Allahabad, December 15-17, 2016.

11. J. Manogna and S. Jayavel, Improvement in thermal performance of pin-fin heat sink by varying the geometric parameters, Proceedings of International Conference on Design and Manufacturing (IConDM 2016), IIITDM Kancheepuram, December 16-17, 2016.

12. R. S. Sampath Kumar and S. Jayavel, Study of flow characteristics past a cylinder with a pitching airfoil in the wake, Proceedings of ISTAM 2016, 61st Congress of the Indian Society of Theoretical and Applied Mechanics, IIT Kharagpur, VIT University, December 11-14, 2016.

13. R. Deepakkumar, M. Balasundar and S. Jayavel, Comparison of solution algorithms for unsteady problem of flow past circular cylinder, Proceedings of ISTAM 2016, 61st Congress of the Indian Society of Theoretical and Applied Mechanics, IIT Kharagpur, VIT University, December 11-14, 2016.

14. J. Manogna, R. Deepakkumar and S. Jayavel, Computational analysis of flow and thermal characteristics of pin-fin heat sink , Proceedings of Sixth International Congress on Computational Mechanics and Simulation (ICCMS2016), Paper No. 308, IIT Bombay, June 27- July 1, 2016.

15. Jaganathan, R. Deepakkumar and S. Jayavel, Numerical study on effect of airfoil pin-fin location in tube fin heat exchanger, Proceedings of Sixth International Congress on Computational Mechanics and Simulation (ICCMS2016), Paper No. 335, IIT Bombay, June 27- July 1, 2016.

16. Ashish Ameria, R. Deepakkumar and S. Jayavel, Experimental investigation of heat transfer enhancement and change in pressure drop due to wavy spiral fin, Proceedings of International Conference on Recent Trends in Engineering and Material Sciences (ICEMS-2016), Jaipur National University,March 17-19, 2016.

17. R. Deepakkumar and S. Jayavel, Numerical investigation on performance of finned-tube heat exchanger with hybrid rows of tubes, Proceedings of 23rd National Heat and Mass Transfer Conference and 1st International ISHMT-ASTFE Heat and Mass Transfer Conference IHMTC2015, Paper No. 290, ISRO Thiruvananthapuram, December 17-20, 2015.

18. R. Deepakkumar, A. Jaganathan and S. Jayavel, Performance assessment of heat exchanger with airfoil pin-fin inserts, Proceedings of 5th International Conference on Advances in Energy Research (ICAER-2015), Paper No. 378, IIT Bombay, December 15-17, 2015.

19. K. Meghana Sarat and S. Jayavel, Numerical study of laminar flow characteristics for flow past rotating cylinders, Proceedings of the Forty Second National Conference on Fluid Mechanics and Fluid Power (FMFP2015), Paper No. 222, NITK Surathkal, December 14-16, 2015.

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21. R. Deepakkumar, S. Jayavel and Shaligram Tiwari, Computational study of fluid flow characteristics past circular cylinder due to confining walls with local waviness, Proceedings of XXVII IUPAP Conference on Computational Physics: CCP2015, Paper No. FDCM-O-86, IIT Guwahati, December 2-5, 2015.

22. R. Deepakkumar and S. Jayavel, Effect of under relaxation factor on convergence rate of computations for flow past circular cylinder, Proceedings of 6th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-123, IIT Kharagpur, December 29-31, 2014.

23. S. Thirumavalvan, V. Sivachithambaram and S. Jayavel, Numerical investigation of biodiesel reactor, Proceedings of 6th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-258, IIT Kharagpur, December 29-31, 2014.

24. Y. Usha and S. Jayavel, Effect of cylinder rotation on heat transfer, Proceedings of 6th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-260, IIT Kharagpur, December 29-31, 2014.

25. R. Senthil Kumar and S. Jayavel, Heat transfer enhancement under natural convection of triangular aluminium fins using carbon nano tubes, Proceedings of 6th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-334, IIT Kharagpur, December 29-31, 2014.

26. B. Vineela Devi and S. Jayavel, Numerical simulation of heat transfer in channels with different ribs, Proceedings of 10th IRF International Conference, Chennai, India, Page No. 48-51, June 8, 2014.

27. R. Senthil Kumar and S. Jayavel, Optimizing the orientation and geometries of electronic components for effective heat transfer, Proceedings of the International Conference on Recent Advances in Mechanical Engineering and Interdisciplinary Developments, Paper No. ICRAMID-227, Ponjesly College of Engineering, March 7-8, 2014.

28. Y. Usha and S. Jayavel, Influence of flow rate and component spacing on heat transfer in an electronic system, Proceedings of the International Conference on Recent Advances in Mechanical Engineering and Interdisciplinary Developments, Paper No. ICRAMID-80, Ponjesly College of Engineering, March 7-8, 2014.

29. S. Thirumavalavan and S. Jayavel, Design of continuous reactor system for the production of biodiesel, Proceedings of the International Conference on Recent Advances in Mechanical Engineering and Interdisciplinary Developments, Paper No. ICRAMID-249, Ponjesly College of Engineering, March 7-8, 2014.

30. N. Sathyanarayanan, S. Jayavel and Theoklis Nikolaidis, Stability and performance analysis of a two spool gas turbine aero-engine, Proceedings of the International Conference on Recent Advances in Mechanical Engineering and Interdisciplinary Developments, Paper No. ICRAMID-193, Ponjesly College of Engineering, March 7-8, 2014.

31. S. Sathish Kumar, R. Senthil Kumar and S. Jayavel, Numerical investigation of forced convective cooling of electronic components, Proceedings of the 22nd National and 11th International ISHMT-ASME Heat and Mass Transfer Conference, Paper No. HMTC1300403, IIT Kharagpur, December 28-31, 2013.

32. G. Kalaignanam, B. Naveen and S. Jayavel, Experimental investigation of direct contact heat exchanger for domestic air-conditioners, Proceedings of the Fortieth National Conference on Fluid Mechanics and Fluid Power, Paper No. FMFP2013-42, NIT Hamirpur, December 12-14, 2013.

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36. S. Ganga Prasath, M. Sudharsan and S. Jayavel, Numerical Study on Influence of Blowing on Lid-Driven Cavity Flow using LCS. Proceedings of IUTAM Symposium on Bluff Body Flows (Blubof2011), Paper no. 83, IIT Kanpur, December 12-16, 2011.

37. Naga Krishna Chaitanya K, Adeel Ahmed Qureshi and S. Jayavel, Design and fabrication of a reactor to produce biodiesel from Neem oil. Proceedings of Recent Trends in Alternate Energy – 2011, Paper no: 50, NIT Calicut, June 9-10, 2011.

38. M. Sudharsan, S. Ganga Prasath and S. Jayavel, Numerical study on the effect of suction and blowing on flow past two inline cylinders. Proceedings of 5th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-2010/103, IIT Kharagpur, December 27-29, 2010.

39. K.V.S.S.D Prasanth and S. Jayavel, Flow Patterns past Multiple Circular Cylinders in various Configurations. Proceedings of 5th International Conference on Theoretical, Applied, Computational and Experimental Mechanics, Paper No. ICTACEM-2010/116, IIT Kharagpur, December 27-29, 2010.

40. S. Ganga Prasath, M. Sudharsan and S. Jayavel, Numerical study of heat transfer and vortex shedding characteristics due to unsteady flow past square cylinders. Proceedings of the 37th National & 4th International Conference on Fluid Mechanics and Fluid Power, Paper No. FMFP2010-171, IIT Madras, Chennai, December 16-18, 2010.

41. M. Sudharsan, S. Ganga Prasath, S. Jayavel and Shaligram Tiwari, Flow and heat transfer for flow past elliptic tubes in fin-tube heat exchangers. Proceedings of the 37th National & 4th International Conference on Fluid Mechanics and Fluid Power, Paper No. FMFP2010-238, IIT Madras, Chennai, December 16-18, 2010.

42. S. Jayavel and Shaligram Tiwari, Numerical investigation of heat transfer enhancement in fin-tube heat exchangers by vortex generators in common-flow-up and common-flow-down configurations. Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, IIT Bombay & NPCIL, Mumbai, January 4-6, 2010.

43. S. Jayavel and Shaligram Tiwari, Lagrangian study of particle trajectory due to vortices generated by vortex generators mounted in various configurations. Proceedings of 20th National and 9th International ISHMT-ASME Heat and Mass Transfer Conference, IIT Bombay & NPCIL, Mumbai, January 4-6, 2010.

44. S. Jayavel and Shaligram Tiwari, Effect of tube-spacing for flow past inline and staggered arrangement of tubes in plain-fin-tube heat exchangers. Proceedings of National Conference on Refrigeration and Air Conditioning, Paper No. NCRAC2009-P54, IIT Madras, Chennai, January 08-10, 2009.

45. S. Jayavel and Shaligram Tiwari, Effect of vortex generators on heat transfer enhancement for flow past an inline arrangement of circular tubes having wall confinement. Proceedings of International Conference on Advances in Mechanical Engineering, IISC Bangalore, July 2-4, 2008.

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47. S. Jayavel, Pratish P. Patil and Shaligram Tiwari, Effect of pulsating axial flow on the bounded field of a counter-rotating inviscid vortex pair. Proceedings of National Conference on Advances in Fluid Flow and Thermal Sciences, Paper No. AFFTS2008-C79, SVNIT, Surat, May 22-24, 2008.

48. S. Jayavel, Pratish P. Patil and Shaligram Tiwari, Kinematics of a fluid particle in an interacting vortex field. Proceedings of National Conference of Research

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