Research Publications

(a) List of Publications in Journals

[1] **A. Dhawan** and H. Kar, "LMI-based criterion for the robust guaranteed cost control of 2-D systems described by the Fornasini–Marchesini second model," *Signal Processing,* vol. 87, pp. 479-488, 2007.

[2] **A. Dhawan** and H. Kar, "Comment on "Robust optimal guaranteed cost control for 2D discrete systems"," *IET Control Theory and Applications*, vol. 1, pp. 1188-1190, 2007.

[3] **A. Dhawan** and H. Kar, "Optimal guaranteed cost control of 2-D discrete uncertain systems: an LMI approach," *Signal Processing,* vol. 87, pp. 3075-3085, 2007.

[4] **A. Dhawan** and H. Kar, "An LMI approach to robust optimal guaranteed cost control of 2-D discrete systems described by the Roesser model," *Signal Processing,* vol. 90, pp. 2648-2654, 2010.

[5] **A. Dhawan** and H. Kar, "An improved LMI-based criterion for the design of optimal guaranteed cost controller for 2-D discrete uncertain systems," *Signal Processing,* vol. 91, pp. 1032-1035, 2011.

[6] **A. Dhawan** and H. Kar, "LMI approach to suboptimal guaranteed cost control for 2-D discrete uncertain systems," *Journal of Signal and Information Processing,* vol. 2, pp. 292-300, 2011.

[7] M. Tiwari and **A. Dhawan**, "Comment on "Robust guaranteed cost control for a class of two-dimensional discrete systems with shift-delays"," *Multidimensional Systems and Signal Processing,* vol. 23, pp. 415-419, 2012.

[8] M. Tiwari and **A. Dhawan**, "An LMI approach to optimal guaranteed cost control of uncertain 2-D discrete shift-delayed systems via memory state feedback," *Circuit Systems and Signal Processing,* vol. 31, pp. 1745-1764, 2012.

[9] M. Tiwari and **A. Dhawan**, "A survey on the stability of 2-D discrete systems described by Fornasini-Marchesini second model," *Circuits and Systems,* vol. 3, pp. 17-22, 2012.

[10] **A. Dhawan**, "Non-fragile controller design for 2-D discrete uncertain systems described by the Roesser model" *Journal of Signal and Information Processing,* vol. 3, no. 2, pp. 248-251, 2012.

[11] M. Tiwari and **A. Dhawan**, "Robust suboptimal guaranteed cost control for 2-D discrete systems described by Fornasini-Marchesini first model," *Journal of Signal and Information Processing,* vol. 3, no.2, pp. 252-258, 2012.

[12] P. Sharma and **A. Dhawan**, "Robust non-fragile control for 2-D discrete uncertain systems: An LMI approach," *Journal of Signal and Information Processing,* vol. 3, no. 3, pp. 377-381, 2012.

[13] M. Tiwari and **A. Dhawan**, "Optimal guaranteed cost control of uncertain 2-D discrete systems with both shift-delays and input delays via memory state feedback," *Transactions of the Institute of Measurement and Control,* vol. 35, pp. 491-502, 2013.

[14] A. Tandon and **A. Dhawan**, "An LMI approach to non-fragile robust optimal guaranteed cost control of 2-D discrete uncertain systems," *Transactions of the Institute of Measurement and Control,* vol. 36, pp. 644-653, 2014.

[15] A. Tandon and **A. Dhawan**, "Non-fragile robust optimal guaranteed cost control of uncertain 2-D discrete state-delayed systems", *International Journal of Systems Science*, vol. 47, no. 14, pp. 3303-3319, 2016.

[16] A. K. Singh and **A. Dhawan**, "Robust Optimal H_∞ Control for Uncertain 2-D Discrete State-Delayed Systems Described by the General Model" *Journal of Signal and Information Processing*, vol. 7, pp. 98-114, 2016.

[17] A. K. Singh, A. Tandon, and **A. Dhawan**, "Delay-Dependent Robust H_∞ Control for Uncertain 2-D Discrete State Delay Systems Described by the General Model", *Circuits and Systems*, vol.7, pp. 3645-3669, 2016.

[18] A. Vidyarthi, M. Tiwari, and **A. Dhawan**, "Robust Optimal H_∞ Control for 2-D Discrete Systems Using Asymmetric Lyapunov Matrix", *Circuit Systems and Signal Processing*, vol. 36, no. 10, pp. 3901-3918, 2017.

[19] P. Kumar, P. C. Shrivastava, M. Tiwari, and **A. Dhawan**, "ASIC Implementation of Area Efficient, High Throughput 2-D IIR Filter Using Distributed Arithmetic" *Circuit Systems and Signal Processing*, vol. 37, pp. 2934-2957, 2018.

[20] A. Tandon and **A. Dhawan**, "An LMI approach to non-fragile robust optimal guaranteed cost control of uncertain 2-D discrete systems with both state and input delays", *Transactions of the Institute of Measurement and Control*, vol. 40, pp. 785-804, 2018.

[21] A. Tandon, **A. Dhawan**, and M. Tiwari "Optimal guaranteed cost control of uncertain 2-D discrete state-delayed systems described by the Roesser Model via memory state feedback", *Transactions of the Institute of Measurement and Control*, vol. 41, pp. 285-294, 2019.

[22] Prabhat Chandra Shrivastava, Prashant Kumar, Manish Tiwari and **A. Dhawan**, **"**Efficient Architecture for the Realization of 2-D Adaptive FIR Filters Using Distributive Arithmetic,**"** *Circuit Systems and Signal Processing*, vol. 40, pp. 1458-1478, 2021.

[23] A. K. Singh, **A. Dhawan**, and M. Tiwari, "Delay-dependent robust optimal H_∞ control for uncertain 2-D discrete systems described by the general model with both state and input delays", *International Journal of Digital Signals and Smart Systems.* (Article in Press).

(b) List of Publications in Conference/Workshop Proceedings

[1] Sanjiv Kumar Gupta, **A. Dhawan** and Manish Tiwari, "Design of 15-4 Compressor for DSP Applications," *in Proceeding of the 3rd* International Conference on VLSI Communication and Signal Processing (VCAS-2020), held at MNNIT Allahabad (09 – 11, Oct' 2020).

[2] Akhilesh Kumar Ravat, **A. Dhawan** and Manish Tiwari, "Preview Control for Discrete Time Control Systems," *in Proceeding of the 3rd* International Conference on VLSI Communication and Signal Processing (VCAS-2020), held at MNNIT Allahabad (09 – 11, Oct' 2020).

[3] P. C. Shrivastava, P. Kumar, M. Tiwari and **A. Dhawan**, "A survey on the hardware realization of 2-D state space filtering," *2017 International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT)*, Dehradun, 2017, pp. 1-5.

[4] P. C. Shrivastava, P. Kumar, M. Tiwari and **A. Dhawan**, "A novel approach for Low Voltage, Low Power deep Sub-threshold 5-T SRAM cell," *2017 International Conference on Emerging Trends in Computing and Communication Technologies (ICETCCT)*, Dehradun, 2017, pp.1-5.

[5] **A. Dhawan** and A. Tandon, "LMI Conditions to Non-Fragile Robust Optimal Guaranteed Cost Control of 2-D Discrete Systems Described by the Roesser Model," *in Proceedings of International Conference on Next Gen Electronic Technologies: Silicon to Software (ICNETS2)*, VIT University, Chennai, March 23-25, 2017.

[6] A. Kodap and **A. Dhawan**, "Finite impulse response single and double notch filter design with narrow rejection bandwidth," *in Proceedings of Students' Conference on Engineering & Systems (SCES-2012)*, MNNIT, Allahabad, March 16-18, 2012.

[7] M. Tiwari and **A. Dhawan**, " A survey on stability of 2-D discrete systems described by Fornasini-Marchesini first model," in *Proceedings of International Conference on Power Control and Embedded Systems (ICPCES 2010)*, MNNIT, Allahabad, Nov. 28-Dec. 1, 2010.

[8] Chaitanya Kommu and **A. Dhawan**, "A novel high-speed multiplexer-based full adder," in *Proceedings of Silver Jubilee Conference on Communication Technologies and VLSI Design*, VIT University, Vellore, Tamilnadu, Oct. 8-10, 2009.

[9] Hemantha S, **A. Dhawan**, and H. Kar, "Multi-Threshold CMOS Design for Low Power Digital Circuits," in *Proceedings of the Technical Conference IEEE TENCON-08*, University of Hyderabad, Hyderabad, Nov. 18-21, 2008.

[10] **A. Dhawan** and H. Kar, "Stability of 2-D systems described by Roesser model: A review," in *Proceedings of the National Conference on Communication and Computational Techniques: Current and Future Trends*, Dehradun Institute of Technology, Dehradun, pp.460-463, Feb. 10-11, 2006.

[11] S. Das and **A. Dhawan**, "A Novel Technique for Realizing On Line Linear Phase IIR Filters," in *Proceedings of the National Conference on Recent Advances in Electronics and Communication Engineering*, S. R. K. R. Engineering College, Bhimavaram, A. P., June 24-25, 2005.

[12] A. K. Tripathi, H. Kar, and **A. Dhawan**, "A systematic approach for effective laboratory teaching in engineering education," presented in 'Workshop on laboratory teaching in Electrical Engineering' held at MNREC, Allahabad, 17 Nov. 1999.

(c) Book Chapter Published:

[1] A. K. Ravat, **A. Dhawan** and Manish Tiwari, *" LMI and YALMIP: Modelling and Optimization Toolbox in MATLAB,"* Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 683, 2021, pp. 507-515.

[2] Prabhat Chandra Shrivastava, Prashant Kumar, Manish Tiwari, **A. Dhawan**, *"A brief Survey on Hardware Realization of Two-Dimensional Adaptive Filters,"* Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 587, 2020, pp. 787-796.

[3] Prashant Kumar, Prabhat Chandra Shrivastava, Manish Tiwari, **A. Dhawan**, *"*Realization of Efficient Architecture for Digital Filters: A Survey*,"* Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 587, 2020, pp. 861-882.

[4] A. K. Ravat, **A. Dhawan**, Manish Tiwari, *"*Noise Cancelation using Adaptive Filter*,"* Advances in VLSI, Communication and Signal Processing, *Lecture Notes in Electrical Engineering* (Springer), Vol. 587, 2020, pp. 981-990.