Volume 1 Issue 5, April 2014

International Journal of Advanced Engineering and Nano Technology

Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.
Exploring Innovation: A Key for Dedicated Services
Address:
22, First Floor, ShivLoke Phase-IV,
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
Website: www.blueeyesintelligence.org
Email: director@blueeyesintelligence.org, blueeyes@gmail.com
Cell #: +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618
Skype #: beiesp, **Twitter #:** beiesp

Technical Advisory Board

S. No	Volume-1 Issue-5, April 2014, ISSN: 2347-6389 (Online) Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.	Page No.

1.

Authors: Chaitali B. Borde, Bhagyashree V. Chaudhari, Ashwini B. Kolhe, Sandip J. Mahajan

Paper Title: Maintaining Consistency & Caching Scheme Efficiently in Hybrid Peer to Peer System

Abstract: Typical peer to peer system is formed by either Structured P2P system or Unstructured P2P system. Where in structured network all peers are arranged in fixed topology & in unstructured network peers are arranged using mixed topology. Here, we call it as hybrid P2P system design. By combining this for our distributed data sharing which gives us advantages of both Structured P2P system & Unstructured P2P system, and reduces their disadvantages .Here, Adaptive Consistency Maintenance Algorithm we are using for polling the file owner to update the file periodically & Consistency maintenance is used for propagating the updates from primary file to its replica. For improving system performance, we are using Top-Caching algorithm which gives a cache for most popular data files. By implementing this algorithm we are trying to reduce over-caching problems also try to balance the load.

Keywords: Peer to peer system, Structured & Unstructured peer to peer system, Hybrid system.

Page No.: 1-3

References:

1. J.M. Hellerstein, B.T. Loo, I. Stoica, and R. Huebsch, "The Case for a Hybrid p2p Search Infrastructure," Proc. Workshop Peer-to-Peer Systems (IPTPS '04), pp. 141-150, Feb. 2004.
2. E.Kalaivani, J.Selva Kumar, "An efficient caching scheme & consistency maintenance in hybrid peer to peer system" (International Journal of Advanced Engineering & Nano Technology) 2012.
3. Haiying (Helen) Shen, "IRM: Integrated File Replication and Consistency Maintenance in P2P Systems", IEEE trans on parallel and Distributed systems, vol. 21, no. 1, Jan 2010.
4. P. Druschel, A. Rowstron, and S. Iyer, "Squirrel: A Decentralized, Peer-to-Peer Web Cache," Proc. 21st Ann. ACM Symp. Principles of Distributed Computing, 2002.
5. S.Shenker, E.Cohen," Replication strategies in unstructured peerto-Peer networks", in: SIGCOMM, 2002.
6. Yuh-JzerJoung, Zhang-WenLin, "On the self-organization of a Hybrid peer-to-peer system", ELSEVIER, (JNCA), 2010.
7. Z. Li, G. Xie, "Efficient and scalable consistency Maintenance for heterogeneous peer-to-peer systems", TPDS (2008).

2.

Authors: To-Po Wang, Zong-Wei Li

Paper Title: An Active-Balun-Based Single-In Differential-Out K-Band LNA with High Gain and Low DC Power Consumption

Abstract: This paper presents an active-balun-based single-in differential-out K-band low-noise amplifier (LNA). The proposed active balun adopts separated dc-current paths for lowering the supply voltage and dc power, leading to the active balun with 0.6-V low supply voltage and 1.36-mW low dc power. Based on the proposed circuit architecture, the K-band LNA has been designed in 0.18-□ m RF CMOS process. Simulated results confirm the LNA combining the proposed low-voltage low-power active balun can effectively achieve superior overall performance in terms of gain and dc power consumption. The presented LNA combing the proposed active balun exhibits a high gain of 22.1 dB and a low dc power of 5.87 mW at 24 GHz.

Keywords: Active balun, low noise amplifier (LNA), single-in differential-out.

Page No.: 4-8

References:

1. J. F. Yeh, C. Y. Yang, H. C. Kuo, and H. R. Chuang, "A 24-GHz transformer-based single-in differential-out CMOS low-noise amplifier," in Proc. IEEE RFIC Symp., 2009, pp. 299-302.
2. W. H. Cho and S. H. Hsu, "An ultra-low-power 24 GHz low-noise amplifier using 0.13 □ m CMOS technology," IEEE Microw. and Wireless Compon. Lett., vol. 20, no. 12, pp. 681–683, Dec. 2010.
3. K. W. Yu, Y. L. Lu, D. C. Chang, V. Liang, and M. F. Chang, "K-band low-noise amplifiers using 0.18-µm CMOS technology," IEEE Microw. and Wireless Compon. Lett., vol. 14, no. 3, pp.106-108, Mar. 2004.
4. S. C. Shin, M. D. Tsai, R. C. Liu, K. Y. Lin, and H. Wang, "A 24-GHz 3.9-dB NF low-noise amplifier using 0.18-□ m CMOS," IEEE Microw. and Wireless Compon. Lett., vol. 15, no. 7, pp. 448–450, Jul. 2005.
5. A. Sayag, S. Levin, D. Regev, D. Zfira, S. Shapira, D. Goren, and D. Ritter, "A 25-GHz 3.3-dB NF low noise amplifier based upon slow wave transmission lines and the 0.18-□ m CMOS," inProc. IEEE RFIC Symp., 2008, pp.373-376.
6. C. C. Chen, H. Y. Yang, and Y. S. Lin, "A 21-27-GHz CMOS wideband LNA with 9.3+/-1.3 dB gain and 103.9+/-8.1 ps group-delay using standard 0.18-□ m CMOS technology," in Radio and Wireless (RWS) Symp., 2009, pp.586-589.
7. Y. L. Wei, S. H. Hsu, and J. D. Jin, "A low-power low-noise amplifier for K-band applications," IEEE Microw. and Wireless Compon. Lett., vol. 19, no. 2, pp.116-118, Feb. 2009.
8. T. P. Wang, "A low-voltage low-power K-band CMOS LNA using dc-current-path split technology," IEEE Microw. and Wireless Compon. Lett., vol. 20, no. 9, pp.519-521, Sep. 2010.
9. T. P. Wang, Z. W. Li, and H. Y. Tsai, "Performance Improvement of 0.18-□ m CMOS microwave amplifier using micromachined suspended inductors: theory and experiment," IEEE Transactions on Electron Devices, vol. 60, no. 5, pp. 1738-1744, May 2013.

3.

Authors: Jayashree Bhole, A. M. Patil

Paper Title: Detection of Brain Tumor Using MRI Scan

Abstract: Brain tumor is an abnormal mass of tissue in which some cells grow and multiply uncontrollably, apparently unregulated by the mechanisms that control normal cells. The growth of a tumor takes up space within the skull and interferes with normal brain activity. So detection of the tumor is very important in earlier stages. Various techniques were developed for detection of tumor in brain. The main concentration is on those techniques which use image segmentation to detect brain tumor. These techniques use the MRI Scanned Images to detect the tumor in the brain.

Page No.: 9-13

Keywords: Brain tumor; MRI; Neuro fuzzy logic; Biological analysis.

References:

1. Oelze, M.L,Zachary, J.F. , O'Brien, W.D., Jr., (2003) ―"Differentiation of tumor types in vivo by scatterer property estimates and parametric images using ultrasound backscatter" ― , Vol.1.
2. Devos, A, Lukas, L., ―"Does the combination of magnetic resonance imaging and spectroscopic imaging improve the classification of brain tumors?"‖ , Engineering in Medicine and Biology Society, 2004. IEMBS '04. 26th Annual International Conference of the IEEE, 2004.
3. Farmer, M.E, Jain, A.K. , ―"A wrapper-based approach to image segmentation and classification‖", Image Processing, IEEE Transactions on journals and magazines, Dec. 2005.
4. Zhu H, Francis HY, Lam FK, Poon PWF. Deformable region model for locating the boundary of brain tumors. In: Proceedings of the IEEE 17th Annual Conference on Engineering in Medicine and Biology 1995. Montreal, Quebec, Canada: IEEE,1995; 411
5. T.K. Yin and N.T. Chiu, "A computer-aided diagnosis for location abnormalities in bone scintigraphy by fuzzy system with a three-step minimization approach," IEEE Trans. Med.
6. X. Descombes, F. Kruggel, G. Wollny, and H.J. Gertz, "An object-based approach for detecting small brain lesions: Application to Virchow-robin spaces," IEEE Trans Med. Imaging, vol.23, no.2, pp. 246–255, 2004.
7. Cline HE, Lorensen E, Kikinis R, Jolesz F.Threedimensional segmentation of MR images of the head using probability and connectivity. J Computer Assist Tomography 1990; 14:1037–1045.
8. Vannier MW, Butterfield RL, Rickman DL, Jordan DM, Murphy WA, Biondetti PR. Multispectral magnetic resonance image analysis. Radiology 1985; 154:221–224.
9. Samita S. Andreansky, Bin Het, G. Yancey Gillespie, Liliana Soroceanu, James Markert, Joany Chout, Bernard Roizmant, And Richard J. Whitley (Oct.1996): "The application of genetically engineered herpes simplex viruses to the treatment of experimental brain tumors "Proc. Natl. Acad. Sci. USA Vol. 93.
10. Ronald G, Stephen A, Kromhout-Schiro S, Suresh K. (2000): "The role of neural networks inimproving the accuracy of MR spectroscopy for the diagnosis of head and neck squamous cell carcinoma." AJNR.
11. Egmont P, De D, Handels H. (2002): "Image processing with neural networks-a review". Pattern Recognition.
12. Messen W, Wehrens R, Buydens L. (2006): "Supervised Kohonen networks forclassification problems". Chemometrics and Intelligent Laboratory Systems.
13. Georgiadis P, Cavouras D, Kalatzis J, Daskalakis A, George C, Sifaki K, Ekaterini Solomou. (2008): "Improving brain tumor characterization on MRI by probabilistic neural networks and non-linear transformation of textural features". Computer Methods and Programs in Biomedicine.

4.

Authors:	**To-Po Wang, Jing- Shiang Huang, You-Fu Lu**
Paper Title:	**A 0.4-V 2.4-mW 13.4-dB Ultra-Wideband Low- Noise Amplifier with Embedded Transformers**

Pages: 14-17

Abstract: A low-voltage low-power high-gain ultra- wideband (UWB) low-noise amplifier (LNA) with embedded transformers is proposed in this paper. The LNA consists of two stages, and each stage is a cascode topology. The transformer is inserted between the cascode stages for interstage impedance matching to achieve high gain. Furthermore, transformers are adopted to the common-source MOSFETs for impedance matching and supplying gate voltages. According to the proposed circuit topology, the UWB LNA has been designed in 0.18-□ m CMOS process. Simulated results confirm the UWB LNA combining the transformers can effectively achieve high gain of 13.4 dB, low noise figure of 3.37 dB, low LNA supply voltage of 0.4 V, and total dc power consumption of 2.4 mW.

Keywords: Interference rejection, low-noise amplifier (LNA), noise figure, notch filter.

References:

1. C. F. Liao and S. I. Liu, "A broadband noise-canceling CMOS LNA for 3.1-10.6-GHz UWB receivers," IEEE J. Solid-State Circuits, vol. 42, no. 2, pp. 329–339, Feb. 2007.
2. A. I. A. Galal, R. K. Pokharel, H. Kanay, and K. Yoshida, "Ultra-wideband low noise amplifier with shunt resistive feedback in 0.18-□ m CMOS process," in Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF), 2010, pp. 33-36.
3. Y. S. Lin, C. Z. Chen, H. Y. Yang, C. C. Chen, J. H. Lee, G. W. Huang, and S. S. Lu, "Analysis and design of a CMOS UWB LNA with dual-RLC-branch wideband input matching network," IEEE Trans. Microw. Theory Tech., vol. 58, no. 2, pp. 287-296, Feb. 2010.
4. C. T. Fu, C. N. Kuo, and S. S. Taylor, "Low-noise amplifier design with dual reactive feedback for broadband simultaneous noise and impedance matching," IEEE Trans. Microw. Theory Tech., vol. 58, no. 4, pp. 795-806, Apr. 2010.
5. R. M. Weng, C. Y. Liu, and P. C. Lin, "A low-power full-band low-noise amplifier for ultra-wideband receivers," IEEE Trans. Microw. Theory Tech., vol. 58, no. 8, pp. 2077-2083, Aug. 2010.
6. Q. T. Lai and J. F. Mao, "A 0.5-11 GHz CMOS low noise amplifier using dual-channel shunt technique," IEEE Microw. Wireless Compon. Lett., vol. 20, no. 5, pp. 280-282, May. 2010.
7. B. Park, S. Choi, and S. Hong, "A low-noise amplifier with tunable interference rejection for 3.1- to 10.6-GHz UWB system," IEEE Microw. Wireless Compon. Lett., vol. 20, pp. 40-42, Jan. 2010.
8. H. I. Wu, R. Hu, and C. F. Jou, "Complementary UWB LNA design using asymmetrical inductive source degeneration," IEEE Microw. Wireless Compon. Lett., vol. 20, no. 7, pp. 402-404, July 2010.
9. Y. T. Lo and J. F. Kiang, "Design of wideband LNAs using parallel-to-series resonant matching network between common-gate and common-source stages," IEEE Trans. Microw. Theory Tech., vol. 59, no. 9, pp. 2285-2294, Sept. 2011.
10. C. H. Wu, Y. S. Lin, J. H. Lee, and C. C. Wang, "A 2.87±0.19dB NF 3.1~10.6GHz ultra-wideband low-noise amplifier using 0.18μm CMOS technology," in Radio and Wireless Symp. (RWS), 2012, pp. 227-230.

5.

Authors:	**To-Po Wang, Yu-Zhang Nian**
Paper Title:	**A 130-GHz 0.18-μm CMOS VCO with Enhanced Output Power**

Pages: 18-20

Abstract: A 130-GHz cross-coupled push-push voltage-controlled oscillator (VCO) with enhanced output power is proposed in this paper. CMOS VCOs in millimeter-wave (mm-wave) frequency are typical with low output power due to the intrinsic characteristics of MOSFETs. In order to overcome the difficulty, the push-push signal (2fo) are extracted from the middle of inductors and combined with another extracted 2fo signal from the middle of varators. Therefore, the output power can be effectively increased. According to the proposed circuit topology, the 130-GHz VCO has been designed in 0.18-μm CMOS process. Simulated results confirm the 130-GHz VCO combing the proposed output power enhancement technique can effectively increase the output power up to 2.8 dB. Operating at 1-V supply voltage, the VCO core consumes 11.1-mW dc power. Moreover, the VCO's frequency ranges from 125 GHz to 130 GHz, leading to a 4% tuning range. Furthermore, the phase noise of the proposed VCO is -91.9 dBc/Hz at 1-MHz offsets from 130-GHz carrier.

Keywords: Phase noise, push-push, voltage-controlled oscillator (VCO).

References:

1. P. Siegel, "Terahertz technology," IEEE Trans. Microw. Theory Tech., vol. 50, no. 3, pp. 910–928, Mar. 2002.
2. Z. Taylor, R. Singh, D. Bennett, P. Tewari, C. Kealey, N. Bajwa, M. Culjat, A. Stojadinovic, H. Lee, J.-P. Hubschman, E. Brown, and W. Grundfest, "THz medical imaging: In vivo hydration sensing," IEEE Trans. Terahertz Sci. Technol., vol. 1, no. 1, pp. 201–219, Sep. 2011.
3. C. Kulesa, "Terahertz spectroscopy for astronomy: From comets to cosmology," IEEE Trans. Terahertz Sci. Technol., vol. 1, no. 1, pp. 232–240, Sep. 2011.
4. K. Ajito and Y. Ueno, "THz chemical imaging for biological applications," IEEE Trans. Terahertz Sci. Technol., vol. 1, no. 1, pp. 293–300, Sep. 2011.
5. Z.Wang, P.-Y. Chiang, P. Nazari, C.-C.Wang, Z. Chen, and P. Heydari, "A 210 GHz fully integrated differential transceiver with fundamental- frequency VCO in 32 nm SOI CMOS," in IEEE ISSCC Dig. Tech. Papers, Feb. 2013, pp. 136–137.
6. K. Sengupta and A. Hajimiri, "Distributed active radiation for THz signal generation," in IEEE ISSCC Dig. Tech. Papers, Feb. 2011, pp. 288–289.
7. Y. M. Tousi, O. Momeni, and E. Afshari, "A novel CMOS high-power terahertz VCO based on coupled oscillators: Theory and implementation," IEEE J. Solid-State Circuits, vol. 47, no. 12, pp. 3032–3042, Dec. 2012.3
8. J. Sharma and H. Krishnaswamy, "216- and 316-GHz 45-nm SOI CMOS signal sources based on a maximum-gain ring oscillator topology," IEEE Trans. Microw. Theory Tech., vol. 61, no. 1, pp. 492–504, Jan 2013.
9. R. C. Liu, H. Y. Chang, C. H. Wang, and H. Wang, "A 63-GHz VCO using a standard 0.25-μm CMOS process," in IEEE Int. Solid- State Circuits Conf. Dig. Tech. Papers, Feb. 2004, pp. 446–447.
10. H. C. Chiu and C. P. Kao, "A wide-tuning-range 69-GHz push-push VCO using 0.18-μm CMOS technology," IEEE Microw. Wireless Compon. Lett. , vol. 20, no. 2, pp. 97–99, Feb. 2010.
11. H. R. Rategh, H. Samavati, and T. H. Lee, "A CMOS frequency synthesizer with an injection-locked frequency divider for a 5-GHz wireless LAN receiver," IEEE J. Solid-State Circuits, vol. 35, no. 5, pp. 780–787, May 2000.
12. S. Verma, H. R. Rategh, and T. H. Lee, "A unified model for injection-locked frequency dividers," IEEE J. Solid-State Circuits, vol. 38, no. 6, pp. 1015–1027, Jun. 2003.
13. H. R. Rategh and T. H. Lee, "Superharmonic injection-locked oscillator as low power frequency divider," in VLSI Circuits Symp. Tech. Dig., 1998, pp. 132–135.
14. A. Mazzanti, P. Uggetti, and F. Svelto, "Analysis and design of injection-locked LC dividers for quadrature generation," IEEE J. Solid-State Circuits, vol. 39, no. 9, pp. 1425–1433, Sep. 2004.
15. T. P. Wang, R. C. Liu, H. Y. Chang, L. H. Lu, and H. Wang, "A 22-GHz push-push CMOS oscillator using micromachined inductors," IEEE Microw. Wireless Compon. Lett., vol. 15, pp. 859-861, Dec. 2005.
16. T. P. Wang, "A fully integrated W-band push-push CMOS VCO with low phase noise and wide tuning range," IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol. 58, no. 7, pp. 1307-1319, July 2011.

6.

Authors:	**To-Po Wang, Wei-Qing Xu**
Paper Title:	**A High-PSAT High-OP1dB 60-GHz Power Amplifier with Miniature Marchand Balun and Non-Uniform-Offset Coupler in 90-nm CMOS**

Abstract: A high-PSAT high-OP1dB 60-GHz power amplifier (PA) with miniature Marchand balun and non-uniform-offset 90° coupler in 90-nm CMOS is proposed in this paper. The PA is constructed with a four-way structure, and each way consists of a three-stage cascode device. In order to improve the gain, output power (Pout), and power-added efficiency (PAE), the cross-coupled pairs are adopted in this PA. Moreover, a minimized Marchand balun is proposed to minimize the circuit area. Furthermore, a non-uniform-offset 90° coupler is proposed to improve the signal imbalance. Based on these methods, a 60-GHz PA has been designed in 90-nm CMOS process. Simulated results confirm these methods applied to this PA can effectively improve the circuit performance in terms of gain, Pout, PAE, and power density (Saturated output power (PSAT)/Area).

Keywords: Output power (Pout), power amplifier (PA), power-added efficiency (PAE), saturated output power (PSAT).

References:

21-24

1. Federal Communications Commission, FCC 99-183.
2. C. Y. Law and A. V. Pham, "A high-gain 60-GHz power amplifier with 20-dBm output power in 90nm CMOS" in IEEE Int. Solid-State Circuit Conf. Tech. Dig., Feb. 2010, pp. 426-427.
3. B. Martineau, V. Knopik, A. Siligaris, F. Gianesello and Didier Belot, "A 53-to-68-GHz 18-dBm power amplifier with an 8-way combiner in standard 65nm CMOS," in IEEE Int. Solid-State Circuit Conf. Tech. Dig., Feb. 2010, pp. 428-429.
4. J. W. Lai and A. V. Garcia, "A 1-V 17.9-dBm 60-GHz power amplifier in standard 65-nm CMOS" in IEEE Int. Solid-State Circuit Conf. Tech. Dig., Feb. 2010, pp. 424-425.
5. J. Chen and A. M. Niknejad, "A compact 1V 18.6dBm 60GHz power amplifier in 65nm CMOS," in IEEE Int. Solid-State Circuit Conf. Tech. Dig., Feb. 2011, pp. 432-433..
6. P. M. Farahabadi and K. Moez, "Compact high-power 60 GHz power amplifier in 65 nm CMOS," in Custom Integrated Circuits Conference (CICC), 2013, pp. 1-4.
7. J. F. Yeh, J. H. Tsai, and T. W. Huang, "A 60-GHz power amplifier design using dual-radial symmetric architecture in 90-nm low-power CMOS," IEEE Trans. Microw. Theory Tech., vol. 61, no. 3, pp. 1280-1290, Mar. 2013.
8. T. P. Wang, "Performance enhancement techniques for CMOS power amplifier," IEICE Electronics Express, vol. 8, no. 12, pp. 969-977, June 2011.
9. H. Y. Chang, P. S. Wu, T. W. Huang, H. Wang, C. L. Chang, and J. G. J. Chern, "Design and analysis of CMOS broadband compact high-linearity modulators for gigabit microwave/millimeter-wave applications, "IEEE Trans. Microw. Theory

Tech., vol. 54, no. 1, pp. 20-30, Jan. 2006.
10. Y. N. Jen, J. H. Tsai, T. W. Huang, and H. Wang, "Design and analysis of a 55-71-GHz compact and broadband distributed active transformer power amplifier in 90-nm CMOS process," IEEE Trans. Microw. Theory Tech., vol. 57, no. 7, pp. 1637-1646, July 2009.
11. T. Suzuki, Y. Kawano, M. Sato, T. Hirose, and K. Joshin, "60 and 70-GHz power amplifiers in standard 90-nm CMOS, in IEEE Int. Solid-State Circuit Conf. Tech. Dig., Feb. 2008, pp. 562-563.
12. N. Kurita and H. Kondoh, "60-GHz and 80-GHz wide band power amplifier MMICs in 90-nm CMOS technology," in IEEE RFIC Symp., 2009, pp. 39–42.
13. J. L. Kuo, Z. M. Tsai, K. Y. Lin, and H. Wang, "A 50 to 70 GHz power amplifier using 90-nm CMOS technology," IEEE Microw. Wireless Compon. Lett., vol. 19, pp.45-47, Jan. 2009.

7.

Authors: **To-Po Wang, Shih-Hua Chiang, Wei-Qing Xu**

Paper Title: **A New Low-Voltage Low-Noise High-Gain UWB LNA with Multi-Band Tunable Notch Filter for Interference Rejection**

Abstract: A new ultra-wideband (UWB) low-noise amplifier (LNA) with multi-band tunable notch filter for interference rejection is presented in this paper. The proposed multi-band tunable notch filter consists of two sections, the first section aims for 2.4-GHz interference rejection, and the second section is designed to block 5.2-GHz interference. Moreover, each notch filter section comprises a high-Q active inductor and varactors for interference rejection and center frequency tuning. Based on the proposed circuit architecture, the UWB LNA has been designed in 0.18-µm RF CMOS process. Simulated results confirm the UWB LNA combining the proposed multi-band tunable notch filter can effectively achieve high gain of 22 dB, low noise figure of 2.7 dB, low LNA supply voltage of 0.7 V, and total dc power consumption including multi-band tunable notch filter of 26.3 mW. In addition, the simulated interference rejections at 0.9 GHz, 1.8 GHz, 2.4 GHz, and 5.2 GHz are 50 dB, 39 dB, 53 dB, and 53 dB. Compared to the previous published 0.18-µm CMOS UWB LNAs with notch filters, the proposed circuit topology in this work exhibits superior performance in terms of gain, noise figure, supply voltage, and interference rejection.

Keywords: Interference rejection, low-noise amplifier (LNA), noise figure, notch filter.

References:

1. Q. T. Lai and J. F. Mao, "A 0.5-11 GHz CMOS low noise amplifier using dual-channel shunt technique," IEEE Microw. Wireless Compon. Lett., vol. 20, no. 5, pp. 280-282, May. 2010.
2. Y. T. Lo and J. F. Kiang, "Design of wideband LNAs using parallel-to-series resonant matching network between common-gate and common-source stages," IEEE Trans. Microw. Theory Tech., vol. 59, no. 9, pp. 2285-2294, Sept. 2011.
3. C. H. Wu, Y. S. Lin, J. H. Lee, and C. C. Wang, "A 2.87±0.19dB NF 3.1~10.6GHz ultra-wideband low-noise amplifier using 0.18µm CMOS technology," in Radio and Wireless Symp. (RWS), 2012, pp. 227-230.
4. Y. Gao, Y. J. Zheng, and B. L. Ooi, "0.18 µm CMOS dual-band UWB LNA with interference rejection," Electronics Letters, vol. 43, no. 20, pp. 40-42, Sept. 2007.
5. B. Park, S. Choi, and S. Hong, "A low-noise amplifier with tunable interference rejection for 3.1- to 10.6-GHz UWB systems," IEEE Microw. Wireless Compon. Lett., vol. 20, no. 1, pp. 40-42, Jan. 2010.
6. J. Y. Lin and H. K. Chiou, "Power-constrained third-order active notch filter applied in IR-LNA for UWB standards," IEEE Trans. Circuits Syst. II, Express Briefs, vol. 58, no. 1, pp. 11-15, Jan. 2011.
7. J. F. Chang, Y. S. Lin, J. H. Lee, and C. C. Wang, "A low-power 3.2~9.7GHz ultra-wideband low noise amplifier with excellent stop-band rejection using 0.18µm CMOS technology," in Radio and Wireless Symp. (RWS), 2012, pp. 199-202.

25-28

8.

Authors: **Vivek Kumar Singh, Sumit Gupta, Prashant Kumar, Arindam Ghosal**

Paper Title: **Electricity Generation from Waste Water of High Raise Building**

Abstract: Now a days height of buildings (flats) are too much high and urbanization is happening all around the world. Simultaneously, power crisis is a very big problem. Local residents were trained to maintain the hydro schemes. The Pico hydro sites in Kenya won Ashden Awards for Sustainable Energy. In this paper it has explained that how the potential energy of waste water from washroom can generate electric power through Hydraulic Turbine and generator.

Keywords: Hydel power plant,head, flow, axialturbine, francis turbine, pelton turbines

References:

1. http://hydrovolts.blogspot.in/2010/05/distributed-hydropower- from-wastewater.html
2. http://bigthink.com/design-for-good/hydro-power-turning- toilet-wastewater-into-electricity
3. http://www.sustainability.mottmac.com/sustainabilityprojects /?mode=type&id=262430

29-32