RESUME

Dr. R. S. Anand, Professor, Department of Elect Engg, IIT Roorkee

Date of Birth : 20 October 1963

Educational Qualifications:

Ph.D : University of Roorkee(now IIT Roorkee), 1992
M.E. : University of Roorkee(now IIT Roorkee), 1st Div., 1987
B.E. : University of Roorkee(now IIT Roorkee), 1st Div., 1985

Employment Record :

Sl. No.	Position	Duration	Type of work	Place
1	Research Associate	October 1992 to March 1994	Post Doctoral Research work	University of Roorkee(now IIT Roorkee)
2	Lecturer	April 1994 to June 1998	Teaching and Research	Indian Institute of Technology, Kharagpur
3	Assistant Professor	July 1998 to Dec 1 2005	Teaching and Research	Indian Institute of Technology, Roorkee
4	Associate Professor	Dec 2, 2005 to August 3, 2009	Teaching and Research	Indian Institute of Technology, Roorkee
5	Professor	August 4, 2009 onwards	Teaching and Research	Indian Institute of Technology, Roorkee

Research Guidance :

(*Ph.D./M.Tech/M.Phil/MCA/B.Tech Project/Dissertation supervision*)

Ph.D. Thesis
completed : 15
in progress : 6
M.Tech./ M.Phil Dissertation : 73(70 completed+3 in progress)
M.Tech Projects : 56
B.Tech Projects : 46

Publications :

(a) Total : 156
Journals : 71
International : 60
National : 11
Conferences : 85
International : 55
National : 30
(b) Books : 2

Research Specialization (major scientific field(s) of interest)

Biomedical Instrumentation
Digital Signal and Image Processing
Microprocessor and Computer Based Instrumentation
Ultrasonic Imaging in NDE and Medical Diagnosis

Awards and prize(s) :

a. University of Roorkee Khosla Research medal (1994) on paper entitled " Ultrasonic Imaging System for Flaw Characterization", Jl. of Microcomputer Applications, Vol.15, 1992, pp.79-87.
b. Certificate of merit on paper " An ultrasonic multiflaw location indicator", Jl. of Institution of Engineers (INDIA), Part ET4, 1990, pp.93-96.
c. National merit scholarship from Intermediate onwards till completion of B.E. course.

Professional Societies Membership:

(i) Life Member Ultrasonic Society of India

Details of Ph.D. Theses Supervised

1. Feature Extraction in Weld NDE Images (Alaknanda, 2006)
2. Feature Extraction in Ultrasound Medical Images(Ashish Thakur, 2006)
3. Investigations of Ant Colony Models for Solving Unit Commitment Problem (Sisaj P Simon , 2007)
4. Performance Analysis of a Microprocessor Controlled Stator Slip Power Recovery Drive (R.K Jarial, 2007)
5. Context Based Medical Image Compression with Transform Coding (M.A. Ansari, 2009)
6. Segmentation and Interpretation of Ultrasound Medical Images(Vibhakar Shrimali, 2009)
7. Ultrasonic NDE Modelling for Prediction of Flaw Response in Polycrystalline Metals(K.S. Aprameya, 2009)
8. Design of Quadrature Mirror Filters(Anil Kumar, 2010)
9. Modelling of Ultrasonic Wave Propagation in Biological Tissues(Narendra D. Londhe, 2011)
10. Edge Preserved Denoising for Segmentation of Ultrasound Medical Images(B. Gopal, 2011)
11. FPGA Applications in Speech Processing(Dinesh K Rajoria, 2011)
12. Analysis and Interpretation of Radiographic Weld Images(Vijay Rathore, 2012)
13. Speech Compression for Teleconsultation(Mohd. Arif, submitted, 2012)
14. Segmentation and Analysis of Color Images(Janak Patel, submitted, 2012)
15. Progressive Medical Image data compression(Tirupathi Raju, submitted, 2012)
16. ROI Based Medical Image Compression(Emjee Putthooran, in progress)

17. Feature Extraction and interpretation of EEG Signals (Yatindra Kumar, in progress)
18. Denoising and Segmentation of Ultrasound Medical Images (Deep Gupta, in progress)
19. Medical Image Processing (Shweta Tripathi, in progress)
20. Weld Image Processing (Jayendra Kumar, in progress)
21. Image Processing applications in wood classification (Arvind R Yadav, in progress)

Details of M. Phil. Theses Supervised

1. Design and development of digital display for ultrasonic applications(Garima Gupta, 1999)
2. Design and development of a wide band receiver for ultrasonic applications(A.K. Upadhyaya, 1999)
3. Design and development of a variable pulse-width pulser for ultrasonic transducer(Ashu Bansal, 1999)
4. Low-power, low-noise instrumentation amplifier for physiological applications(Sanjeev Kumar, 2001)
5. Microprocessor based linearization of thermistor characteristics(Jitendra Kumar,2002)

Details of M. Tech. Theses Supervised

1. Microprocessor based electrocardiography(C.M. Dudhe, 1995)
2. Some aspects of Simulation and analysis of ECG signals(S. Barman, 1996)
3. On-line monitoring and analysis of ECG signal(V.M. Umale, 1997)
4. Feature Extraction in ECG signals and disease identification(G. Shiv Kumar, 1997)
5. ECG data compression using transformative techniques(S.P. Singh,1999)
6. Feature extraction of ECG signal using syntactic approach(N.L. Prajapati, 1999)
7. Experimental study of correlation between phonocardiogram and electrocardiogram(Satyendra Singh, 2000)
8. Computer-aided analysis of phonocardiogram(Jawar Singh, 2001)
9. Evaluation of Edge detection Techniques Algorithms using Real Images(V.P. Salgia, 2003)
10. Face Detection Using Color Segmentation(Praveen Kumar M, 2003)
11. One Dimensional Data Compression(Sunil Pavan A. , 2003)
12. Embedded Zero Tree Image Coding Using Morton Scanning of Wavelet Coefficients(Kartikeya Gupta, 2003)
13. Signify : A Framework and Design of Distributed Signal Processing System(Kirti B Chawla, 2003)
14. Comparative Evaluation of Some DTMF Detection Techniques(Anurag Garg, 2003)

15. Modelling a Digital data Processing System Using Hardware Description Language(Bhim Prakash,2003)
16. Development of an Algorithm for Wavelet Transform in a JPEG Coder(Abhay Agrawal,2003)
17. A Watermarking Algorithm for ownership verification of digital images(V.S.R. Saikumar D,2003).
18. Design and Development of Automatic A.C. Bridges(Balvinder Kumar,2003)
19. Edge Detection in Ultrasound Medical Images(Hari Singh Meena,2003)
20. ANN based ECG Data compression(Kiran Kumar,2004)
21. ANN and texture based analysis of brain images(Vaibhav Srivastava,2004)
22. Establishment of correlation between ultrasound signal and flaw geometry(Praveen Kumar,2004)
23. Simulation of ultrasound signatures from flaws in standard objects(Narendra D. Londhe,2004)
24. FPGA implementation of digital distance protection(T.Mahesh,2004)
25. Recognition of Spoken Hindi words(Dinesh Gupta,2004)
26. Face detection and feature extraction for personal identification(Umesh Pandey,2005)
27. Simulation and modeling of AE sensors for characterization of electrical parameters(Amit V Dharmapurkar,2005)
28. Speaker dependent isolated Hindi word recognition(Shankar Babu D. ,2005)
29. Design of FFT Processor for OFDM(V.N. Anil Kumar Chatrathi,2006)
30. Design of Low Power Processing Unit(Shailendra Singh Chauhan,2006)
31. Contextual compression of ultrasound medical images(Rahul K. Kher,2006)
32. FPGA based floating point arithmetic unit for turbine efficiency measurement(Lokesh Sharma,2006)
33. Speaker dependent continuous speech recognition of Hindi language(Ravi B,2006)
34. Simulation of ultrasound images of biological tissues(Tarun Jain,2006)
35. Instrumentation for lungs sound measurement(P.V. Girish,2006)
36. Analysis and interpretation of RF signals in ultrasonics(Vijay Sharma,2006)
37. Texture segmentation of ultrasound images using level sets framework(Amit Soman,2006)
38. Design of digital IIR Filter using global stochastic optimization techniques(Smitha Elsa Peter,2006)
39. Implementation and comparative evaluation of speech compression techniques(P. Nageshwar Reddy,2007)
40. Implementation of digital signal processing algorithms on FPGA(K. Sridhar,2007)
41. Segmentation of medical images using level set method(K. Nagaratnamma,2007)

42. PLC based fuzzy logic controller for speed(Pratap J Makwana,2007)
43. Energy Management and Simulation of Boiler Interlocks of Kothagudem Thermal Power Station-A(Sukesh A, 2008)
44. Fuzzy Approach to Boiler Drum Level Control(Subhashanker Chaudhary,2008)
45. Implementation of IEEE 1451.2 Compliant STIM(Maheshwar Martha,2008)
46. Multiple Speaker Recognition(Manish K. Varshneya,2008)
47. Compression of Neurological Signals from the point of view of telemedicine(Kriishna A,2008)
48. Monitoring and Analysis of Human Lung Sound(Abhishek Banik,2008)
49. Development of Speaker Dependent Speech Recognition System on FPGA(Venkateshwararao Manda,2009)
50. Implementation and Evaluation of Contextual Based Medical Image Compression Techniques(Tirupathi Raju Kanumuri,2009)
51. Implementation and Evaluation of Advanced Denoising Techniques for Ultrasound Medical Images(Manoj P Simon,2009)
52. Implementation of IEEE 1451.3 Compliant TBIM for Distributed Multi-Drop System(Anubhav Jain,2009)
53. Feature extraction in EEG signals for Brain-Computer Interface(Alok kr. Verma, 2010)
54. Image segmentation using active contour model(J. Sandeep Reddy, 2010)
55. Evaluation of BSS techniques for multiple speaker recognition(Gajendra Singh Rainger, 2010)
56. Content Based image retrieval using genetic algorithm(Raghupati Gali, 2010)
57. Denoising of natural images(Deep Gupta, 2010)
58. Pattern analysis of ECG signal for different data(Sachin Singh, 2010)
59. Blood Vessel enhancement and segmentation using wavelet transform(Nitin Niwariya, 2011)
60. Development of algorithm for multiple speaker Recognition(Vivek Anand, 2011)
61. Flaw Detection and classification in radiographic images(Bijo Lawrence, 2011)
62. Implementation and evaluation of progressive medical image compression methods(Narendra K. Anumolu, 2012)
63. Determining similarity in histological images using graph theoretic description and machine methods for content based image retrieval in medical diagnostics(Harshita Sharma, 2012)
64. Speech recognition by linear prediction (Shipra Soni, 2012)
65. Development of algorithm for color image segmentation (Anand K Agarwal, 2012)

Details of Sponsored Projects

1. Development of Electronic Stethoscope(IIT Roorkee)

2. Feature Extraction and Interpretation of Ultrasound Medical Images(Co-Investigator: Dr. Vinod Kumar, AICTE,2007)
3. Establishment of Correlation between Ultrasonic Signal and Flaw Geometry in Ultrasonic NDE(Co-Investigator: Dr. Vinod Kumar, CSIR,2006)

Short term courses conducted :

Sl. No.	Course Title	Sponsoring Agency (Scheme)	Duration	Co-Coordinators	No. of participants
1	Biomedical Instrumentation	QIP	2 Weeks, September 1996	Dr. S. Maka	37
2	Biomedical Instrumentation	AICTE Project	5 days, March 1999	Prof. Vinod Kumar	25
3	Bioelectrical Signals and Processing	AICTE Project	5 days, October 1999	Prof. Vinod Kumar	55
4	Advances in Medical Instrumentation	QIP	14 days, June-July, 2000	Prof. Vinod Kumar	22
5	Biomedical Signal Processing	QIP	5 days, June 29-July 3, 2009	Prof. Vinod Kumar	32

Conferences organized :

Sl. No.	**Conference Title**	**Conference Dates**	**Worked as**
1	National Conference on Biomedical Engg.	April 21-22, 2000	Jt Organizing Secretary
2	4th International Conference on Computer Applications in Electrical Engineering: Recent Advances (CERA-09)	February 19-21, 2010	Organizing Secretary

Details of Research Publications

International Journals

1. H.K. Verma, R.S. Anand and V. Kumar, "An ultrasonic imaging system for flaw chacterization", *Jl. of Microcomputer Applications*, UK, Vol.15, 1992, pp.79-87
2. R.S. Anand and V. Kumar, "A PC based near-real time ultrasonic imaging system for flaw characterization", *Jl. of Testing and Evaluation,USA(An ASTM Journal)*, Vol.25, No.6, 1997, pp.529-535.
3. R.S. Anand, "PC based monitoring of human heart sounds", Computers and Electrical Engineering, An International Journal(USA), March 2005, pp.166-173.
4. A. Thakur and R.S. Anand, "A Local statistics based region growing segmentation method for ultrasound medical images", International Jl. of Signal Processing(IJSP), Vol. 1, No. 2, pp 141-146, 2004.
5. S.P. Simon , N.P. Padhy and R.S. Anand " Solution to unit commitment problem with spinning reserve and ramp rate constraints using ant colony system", Journal

of Energy and Environment", A journal of Centre for Energy studies, BUET, Vol. 1, No. 2, pp 141-146, 2004.
6. Ashish Thakur and R.S. Anand, "Image quality based comparative evaluation of wavelet filters in ultrasound speckle reduction", Digital Signal Processing, vol.15, no.5, pp.455-465, 2005.
7. Alaknanda, R.S. Anand and Pradeep Kumar "Flaw detection in radiographic weld images using morphological approach", NDT & E International, Vol.1, No.1, Jan.2006, pp.29-33.
8. S.P. Simon, N.P. Padhy and R.S. Anand, "A new ant colony system model for unit commitment problem", Water and Energy International Journal, Central Board of Irrigation and Power, New Delhi, Vol.63, No.1, Jan-Mar 2006, pp.49-57.
9. S.P. Simon, N.P. Padhy and R.S. Anand, "An ant colony approach for unit commitment problem", International Journal of Electrical Power and Energy Systems, Elsevier Science Ltd.,Vol.28,No.5, June 2006, pp.315-323.
10. Jawar Singh and R.S. Anand, "Computer based analysis of phonocardiogram, Journal of Medical Engg. & Technology, Taylor & Francis, Vol.31, No.5, Sep. 2007, pp.319-323.
11. Ashish Thakur and R.S. Anand, "Speckle reduction in ultrasound medical images using adaptive filter based on second order statistics", Journal of Medical Engg. & Technology, Taylor & Francis, Vol.31, No.4, Jul. 2007, pp.263-279.
12. Anil Kumar and G.K. Singh and R.S. Anand, "Near perfect reconstruction quadrature mirror filter", International Journal of Computer Science and Engineering, Vol.2, No.3, March 2008, pp.121-124.
13. M.A. Ansari and R.S. Anand, "Implementation of Region Based Segmentation Algorithms with Application to Medical Images", IETech Journal of Advanced Computations, Vol. 2, No. 2, pp. 080–085, 2008.
14. M.A. Ansari and R.S. Anand,"A Novel ROI Based Algorithm with DCT, Wavelet Transform and Set Partioning in Hierarchial Trees for Medical Image Compression", International Journal of Scientific Computing (IJSC), Vol.2, No.1, pp.7-22, Jan-June 2008.
15. M.A. Ansari and R.S. Anand,"Analysis of Medical Image Compression Techniques with Quality of Compression and Image Fidelity", IETech Journal of Information Systems, Vol.2, No.2, pp. 089–096, 2008.
16. M.A. Ansari and R.S. Anand,"Implementation of Efficient Medical Image Compression Algorithms with JPEG, Wavelet Transform and SPIHT", International Journal of Computational Intelligence Research and Applications (IJCIRA), Vol.2, No.1, pp. 43-55, Jan-June 2008.
17. M.A.Ansari and R.S.Anand, "Medical Image Compression with JPEG, Wavelet Transform and Set Partitioning in Hierarchical Trees", *Indian Journal of Computing Technology*, Vol.3, Issue 2, pp. 17-36, Nov. 2008.
18. V. Shrimali, R.S. Anand, V. Kumar and R.K. Srivastava,"Medical Feature Based Qualitative Evaluation of Denoising Techniques for Ultrasound Liver Images, International Journal of Signal and Imaging Systems Engineering", Vol.1, No.2, pp.135-144,2008.

19. V. Shrimali, R.S. Anand, V. Kumar and R.K. Srivastava,"Medical feature based evaluation of structuring elements for morphological enhancement of ultrasonic images, Journal of Medical Engg and Tech, Taylor & Francis, Vol.33, Issue 2, pp.158-169, 2009.
20. K.S. Aprameya, R.S. Anand, B.K. Mishra & S. Ahmed,"Prediction of flaw response in polycrystalline metals for an ultrasonic pulse echo simulation using Born approximation, Journal of Non-destructive and Evaluation, Taylor & Francis, vol.24, issue 3, pp.289-300, 2009.
21. M.A. Ansari and R.S. Anand,"Context Based Medical Image Compression for Ultrasound Images with Contextual Set Partitioning in Hierarchical Trees Algorithm", Elsevier Science: Int. Journal Advances in Engineering Software, Vol. 40, No.7, pp. 487-496, July 2009.
22. Alaknanda, R.S. Anand and Pradeep Kumar,"Flaw detection in radiographic weldment images using morphological watershed segmentation technique, Elsevier Science, NDT & E International, Vol.42, Issue 1, pp.2-8, January 2009.
23. A. Kumar, G. K. Singh, and R. S. Anand, "Design of Quadrature Mirror Filter Bank using Constrained Optimization", Int. J. of Signal and Imaging Systems Engineering (IJSISE) (Inderscience), Vol. 2, No. 3, pp. 126-132, 2009.
24. Anil Kumar, G. K. Singh,and R.S. Anand, "Design of Quadrature Mirror Filter Bank using Particle Swarm optimization, International Journal of Recent Trends in Engineering, Vol. 1, No. 3, pp,213-217, May 2009.
25. Narendra D. Londhe, R.S. Anand, "Second harmonic field generation from a phased array transducer and its beam optimization," Int. J. Recent Trends in Engineering, vol. 2, pp. 101-105, 2009.
26. Narendra D. Londhe, R.S. Anand, "Linear wave propogation in biomedical tissues," Journal of Biomechanics: Special issue, pp-104-108, 2009.
27. A. Kumar, G. K. Singh, and R. S. Anand, "An Improved Method for Designing Quadrature Mirror filter Banks via Unconstrained Optimization", Journal of Mathematics Modeling and Algorithms (Springer), Vol. 9, No. 1, pp. 99-111, 2010.
28. A. Kumar, G. K. Singh, and R. S. Anand, "A simple Method for Designing Quadrature Mirror filter Banks via Quadratic constrained Optimization", International Journal of Mathematics Modeling and Numerical Optimization (Inderscience), Vol. 1, No. 4, pp. 274-288, 2010.
29. Bhutada G.G., Anand R.S. and Saxena, S.C.,"Fast Adaptive Learning Algorithm for Sub-Band Adaptive Thresholding Function in Image Denoising" Journal of Computational Intelligence Study, (Inderscience special issue on Hybrid computing), vol.1, issue 3, pp.227-241,2010.
30. Londhe N.D. And Anand R.S.,"Investigation of ultrasonic shock wave propagation and superharmonic field generation in human soft tissues", International Jl. Of Mathematical Modelling and Numerical Optimization, (Inderscience), Vol.1, No.4, 2010. pp.316-329.
31. D. K. Rajoriya, R.S. Anand, and R. P. Maheshwari, "Hindi paired word recognition using probabilistic neural network," *Int. J. Computational Intelligence Studies*, Vol. 1, No. 3, pp.291–308, 2010.

32. Dinesh Kumar Rajoriya, R.S. Anand, R.P. Maheshwari "Hindi paired word recognition using probabilistic neural network" International journal of computational intelligence, vol.1, No. 3, pp. 291-308, 2010.
33. Narendra D. Londhe, R.S. Anand, "Investigation of ultrasonic shock wave propagation and superharmonic field generation in human soft tissue," Int. J. Mathematical Modelling and Numerical Optimisation, vol. 1, pp. 316-329, 2010.
34. G.G. Bhutada, R.S. Anand, S.C. Saxena, "Fast adaptive learning algorithm for sub-band adaptive thresholding function in image denoising," Int. J. of Computational Intelligence Studies, vol. 1, pp.227 – 241, 2010.
35. Abhishek Sharma, Anamika Dubey, A.N. Jagannath and R.S. Anand,"Pose variant face recognition based on hybrid global linear regression",Journal of Neural Computing and Applications(Springer), Vol.19,Issue 3, pp.1227-1235, 2010.
36. Narendra D. Londhe, R.S. Anand, "Investigation of linear and nonlinear frequency modulated excitation effects on tissue harmonic imaging," Journal of Acoustics, vol. 30, pp. 227-240, 2011.
37. Narendra D. Londhe, R.S. Anand, "Numerical Investigation of Superharmonic Imaging Using Chirp Excitation," Journal of Medical Ultrasoun, vol. 19, pp. 81-86, 2011.
38. Narendra D. Londhe, R.S. Anand, "Simulation study of the superharmonic field generated from a phase array transducer," Journal of Acoustics, vol. 30, pp. 371-378, 2011.
39. G.G. Bhutada, R.S. Anand, S.C. Saxena, "Edge preserved image enhancement using adaptive fusion of images denoised by wavelet and curvelet transform," Digital Signal Processing, vol. 21, pp. 118–130, 2011.
40. Simon M.P., Bhutada G.G.and Anand R.S.,"A Comparative analysis of diffusion based and wavelet based approaches for despeckling of ultrasound medical images", International Journal Biomedical Engineering and Technology(Inderscience), vol.7, no.2, pp.174-193, 2011.
41. G.G. Bhutada, R.S. Anand, S.C. Saxena, "Image enhancement by wavelet-based thresholding neural network with adaptive learning rate," vol. 5, pp. 573–582, 2011.
42. Bhutada G.G., Anand R.S. and Saxena, S.C., "Image Enhancement by Wavelet Based Thresholding Neural Network with Adaptive Learning Rate" IET journal of image processing,vol.5, no.7,pp573-582, 2011.
43. A. Kumar, G. K. Singh, and R. S. Anand, "A Closed Form Design Method for the Two Channel Quadrature Mirror Filter Banks", Signal Image and Video Processing (Springer), vol.5, no.9, pp.121-131, 2011.
44. Vijay R.Rathod, R.S. Anand "A Novel Method for Detection and Quantification of Incomplete Penetration Type Flaws in Weldments", Journal of X Ray Science and Technology, vol.19, pp.1–14, 2011
45. Vijay R.Rathod, R.S. Anand "A Comparative Evaluation of Different Segmentation Techniques to Detect the Flaws in Weldments by Radiography", Insight Journal Non-Destructive Testing and Condition Monitoring, vol.53, no.10, pp.1-10, October 2011.
46. Vijay R.Rathod, R.S. Anand "NDE Weld Defect Detection and Feature Extraction using Segmentation Approach", International Journal of Advanced Intelligence

Paradigms (IJAIP), vol. 3, No.3, pp. 286-304, 2011.
47. Vijay R.Rathod, R.S. Anand “Analysis of Radio graphical Weld Images Using Image Processing” in Special Issue on: “Image and Data Compression Applications”. International Journal of Signal and Imaging Systems Engineering (IJSISE), Vol.4, No.4, pp.228-237, 2011.
48. M. Arif and R.S. Anand, "Effect of noise on speech compression in run length encoding scheme", Special issue on image and data compression applications, International Journal of Signal and Imaging Systems Engineering (IJSISE), Inderscience, Vol.4, No.4, pp.246-254,2011.
49. M. Arif and R.S. Anand, "Enhancement of perfromance parameters of speech signal using model order reduction approach", International Journal of Speech Technology(Springer),Vol.14,No.4,pp.269-375,2011.
50. Dinesh Kumar Rajoriya, R.S. Anand, R.P. Maheshwari “whole word template technique for pattern classification of spoken Hindi paired words” International journal of computing Science & Communication Technologies, vol. 2, No. 3, 2011.
51. Dinesh Kumar Rajoriya, R.S. Anand, R.P. Maheshwari “Wavelet-probabilistic neural network-based intelligent system approach for spoken Hindi paired word classification” International journal of Innovative Computing and Applications classification(IJICA), vol.3, issue3,pp.152-159,2011.
52. Dinesh Kumar Rajoriya, R.S. Anand, R.P. Maheshwari “Enhanced recognition rate of spoken Hindi paired word using probabilistic neural network approach” International journal of Information and communication technology, vol. 3, No. 2, pp.148-159,2011
53. M. Arif and R.S. Anand,"Turning point algorithm for speech signal compression", International Journal of Speech Technology(Springer),Vol.15,No.4,pp.513-522, 2012.
54. Vijay R.Rathod, R.S. Anand “Comparative Analysis of NDE methods with Image Processing”, Nondestructive Testing and Evaluation, (Taylor and Francis), iFirst article, pp.1-22, 2012.
55. Vijay R.Rathod, R.S. Anand “A Comparative Study of Different Segmentation Techniques for Detection of Flaws in NDE Weld Images” Journal of Non Destructive Evaluation, (Springer), vol.31,no. 1,pp.1-16,2012.
56. G.G. Bhutada, R.S. Anand, S.C. Saxena, “PSO-based learning of sub-band adaptive thresholding function for image denoising,” Journal of signal, image and video processing, vol. 6, pp. 1-7, 2012.
57. Bhutada G.G., Anand R.S. and Saxena, S.C., “PSO Based Learning of Sub-band Adaptive Thresholding Function for Image Denoising”, International journal of signal, image and video processing(Springer), vol.6,no.1, pp.1-7, 2012.
58. Narendra D. Londhe, R.S. Anand, “Numerical parametric study of superharmonic field properties in nonlinear ultrasound wave propagation in human soft tissues,” Acta Acustica United with Acustica,vol. 98, pp.1-9, 2012.
59. Narendra D. Londhe, R.S. Anand, “Numerical investigation of non-linear propagation of amplitude-modulated ultrasound pulses in human soft tissues and superharmonic beam optimization,” Int. J. Biomedical Engineering and Technology, Vol. 8, No. 1, pp. 82-98, 2012.

60. Vijay R.Rathod, R.S. Anand "Analysis and Interpretation of Weld Flaws Using ANN." in Special Issue on: "Digital Signal & Image and Processing Applications". International Journal of Signal and Imaging Systems Engineering (IJSISE), (Accepted for publication in fourth coming issue).

National Journals

1. S. Verma, R.S. Anand, V. Hirna, Bhim Singh and R.B. Saxena Development of single phase brushless self-excited synchronous generator, *Jl. of Institution of Engineers(India),*Vol. 67, pp.235-238, June 1987.
2. R.S. Anand, H.K.Verma and V. Kumar, "An ultrasonic multiflaw location indicator*, Jl. of Institution of Engineers(India),* Part ET4, 1990, pp.93-96.
3. R.S. Anand and V. Kumar,"A microprocessor based ultrasonic multiflaw location indicator", Jl. of Pure and Applied Ultrasonics(India), Vol.13, 1991, pp.13-17.
4. R.S. Anand and V. Kumar,"A novel technique for detection and localization of ultrasonic echoes", Jl. of Pure and Applied Ultrasonics(India), Vol.14, No.1, 1992, pp.26-29.
5. R.S. Anand, V. Kumar & D.S. Chitore,"Characteristics and implications of ultrasonic transducers", Jl. of Institution of Engineers(India), Part EL1, Vol.73, 1992, pp.25-30.
6. S. Barman and R.S. Anand, "An algorithm for simulating ECG signals", Jl. of Institution of Electronics and Telecommunication Engineers(I), Vol.17, No.6, pp.355-360,Nov.-Dec. 2000.
7. R.S. Anand and V. Kumar, "A linear area estimation technique for detection of echoes in ultrasound signals"*, Jl. of Institution of engineers(I),* July 2001.
8. Alaknanda, R.S. Anand and Pradeep Kumar,"Detection of flaws in weldment images using region growing segmentation technique, Indian Welding Journal, Vol.38, No.6, Nov. 2005, pp.
9. Alaknanda, R.S. Anand and Pradeep Kumar,"A comparative study of region growing and morphological edge detection segmentation techniques to detect the flaws in weldments, Indian Welding Journal, Vol.39, No.2, Apr. 2006, pp.36-40.
10. V. Shrimali, R.S. Anand and V. Kumar,"Current trends in segmentation of medical ultrasound B-mode images, IETE Technical Review, Vol.26, Issue 1, pp.8-17, January-February 2009.
11. Narendra D. Londhe, R.S. Anand, "Ultrasonic shock wave propagation and generation of harmonics in biological tissues", Journal of Pure and Applied Ultrasonics, Vol.33, pp.77-87, 2011.

International Conferences

1. R.S. Anand, V. Kumar & D.S. Chitore "A digital signal processing approach for echo detection in ultrasonic pulse-echo data, Int. conf. on Ultrasonics(ICU-90), New Delhi, Dec. 1990.
2. R.S. Anand and V. Kumar, "An Efficient and reliable detection of QRS-segment in ECG signals", *Proceedings of IEEE Regional Conference on Biomedical Engineering,* February 1995, New Delhi, India, pp.2.56-2.57.

3. C.M. Dudhe and R.S. Anand, "A microprocessor based human cardiac signal monitoring, *Proceedings of International Conference on Instrumentation (ICI-1996),* August 1996, Bangalore, India, pp.378-382.
4. R.S. Anand and S. Mondal, "A microprocessor based monitoring of EMG signals, *Proceedings of International Conference on Computer Applications in Electrical Engineering : Recent Advances (CERA-97),* September 1997, Roorkee, India.
5. R.S. Anand and V. Kumar, "An algorithm for ultrasound signal simulation", *Proceedings of Internatinal Conference and Exhibition on Ultrasonics(ICEU-99)*, December 1999, New Delhi, India.
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