

## ЦИТИРАНИЯ НА НАУЧНИ ТРУДОВЕ (БЕЗ АВТОЦИТАТИ)

на чл.-кор. Георги Михов

[C.1]. Levkov, C., **G. Michov**, R. Ivanov, I. Daskalov. [\*Subtraction of 50 Hz Interference from the Electrocardiogram\*](#). Medical & Biological Engineering & Computing 22, pp. 371-373 IFMBE July 1984.

1. Пунджев, В. (1986). Алгоритъм за разпознаване на основните електрокардиографски вълни, XXI Научна сесия „Ден на радиото 86“, т. II, стр.165-171.
2. Доцински, И. (1986). Методи и устройства за анализ на кардиологични сигнали. Дисертация за „доктор на техническите науки“, София.
3. Христов, И. (2005) Премахване на смущения, разпознаване на вълни и измерване на параметри в електрокардиографски сигнали“. Дисертация за „доктор на техническите науки“.
4. Christov, I.I., Dotsinsky, I.A. (1988): New approach to the digital elimination of 50 Hz interference from the electrocardiogram. Medical and Biological Engineering and Computing, 26 (4), pp. 431-434. DOI: 10.1007/BF02442305.
5. Пунджев, В. (1988). Автоматичен анализ на сигнала в микропроцесорни електрокардиографи. Дисертация за „доктор“ (к.т.н.).
6. Христов, И. (1988). Възприемане, обработка и регистриране на електрокардиосигнали чрез микропроцесорни устройства. Дисертация за „доктор“ (к.т.н.).
7. Tai (1991) SLOPE - a real-time ECG data compressor. Med.&Biol. Eng.&Comp., 29 (2), pp. 175-179, DOI: 10.1007/BF02447104.
8. Tai, S.C. (1992): Six-band sub-band coder on ECG waveforms. Medical and Biological Engineering and Computing, 30 (2), pp. 187-192. Cited 11 times. DOI: 10.1007/BF02446129.
9. Tai, S.C. (1992): ECG data compression by corner detection. Medical and Biological Engineering and Computing, 30 (6), pp. 584-590. DOI: 10.1007/BF02446789.
10. Tai, S.C. (1993): AZTDIS - a two-phase real-time ECG data compressor. Journal of Biomedical Engineering, 15 (6), pp. 510-515. DOI: 10.1016/0141-5425(93)90067-9.
11. Yan, X.G. Dynamic Levkov-Christov subtraction of mains interference. (1993): Medical and Biological Engineering and Computing, 31 (6), pp. 635-638. DOI: 10.1007/BF02441814.
12. Anderson, J.M., Dempsey, G.J., Wright, G.T.H. Cullen, C. Crawley, M., Mcadams, E.T., Mclaughlin, J., Mackenzie, G. Adgey, A.A.J. (1994): Portable Cardiac Mapping Assessment of Acute Ischemic-Injury. Methods of Information In Medicine. 33 (1) pp. 72-75.
13. Доцински, И., И. Христов (1994). Един подход за получаване на многоканални електрокардиограми. Трета национална научно-приложна конференция с международно участие „Електронна техника ЕТ'94“, т. I., стр.11-15.
14. Lebedeva, S.V., Lebedev, V.V. (1995): A digital filter for suppressing power line noise in electrocardiographs. Biomedical Engineering, 29 (5), pp. 252-255. DOI: 10.1007/BF00557412.
15. Yoo, S.K., Kim, N.H., Song, J.S., Lee, T.H., Kim, K.M. (1997): Simple self-tuned notch filter in a bio-potential amplifier. Medical and Biological Engineering and Computing, 35 (2), pp. 151-154. DOI: 10.1007/BF02534147.
16. Sahambi, J.S., Tandon, S.N., Bhatt, R.K.P. (1997): Quantitative analysis of errors due to power-line interference and base-line drift in detection of onsets and offsets in ECG using wavelets. Medical and Biological Engineering and Computing, 35 (6), pp. 747-751. DOI: 10.1007/BF02510988.

17. Benabderahman (1997) Methodes de traitement de signaux multidimensionnels appliquees a l'extraction de micro-potentiels electrocardiographiques. These presente pour obtenir le titre de Docteur, Universite Joseph Fourier - Grenoble, France.
18. Sahambi, S., N. Tandon, R. Bhatt (1997). Quantitative analysis of errors, Med.& Biol. Eng.& Comp., November, pp. 747-751.
19. Kumaravel, N., Nithiyanandam, N. (1998): Genetic-algorithm cancellation of sinusoidal powerline interference in electrocardiograms. Medical and Biological Engineering and Computing, 36 (2), pp. 191-196. DOI: 10.1007/BF02510742.
20. Yongcheng, W., Y.Yuxing (1999). A New Digital Filter Method for Eliminating 50Hz Interference from the ECG. Chinese Journal of Medical Instrumentation, vol. 23, No.3, pp. 1-6.
21. Christov, I.I. (2000): Dynamic powerline interference subtraction from biosignals. Journal of Medical Engineering and Technology, 24 (4), pp. 169-172. DOI: 10.1080/03091900050163454.
22. Lawrence, M. (2001) Physiological Measurement. IPEM Grade A Training Scheme, June 2001 – December 2001.
23. Gothev A. (2003): 'Spline and wavelet based techniques for signal and image processing', Ph.D. Thesis, Tampere University of Technology, Publications 429.
24. Butler, K.E., Russell, R.D. (2003): Cancellation on Multiple Harmonic Noise Series in Geophysical Records. Geophysics, 68 (3), pp. 1083-1090, Jan. 8, Canada. DOI: 10.1190/1.1581080.
25. Mitov, I.P. (2004): A method for reduction of power line interference in the ECG. Medical Engineering and Physics, 26 (10), pp. 879-887. DOI: 10.1016/j.medengphy.2004.08.014.
26. Sörnmo, L., Laguna, P. (2005): Bioelectrical Signal Processing in Cardiac and Neurological Applications. eds: Sörnmo L, Laguna P, © Elsevier Inc., 688 p. DOI: 10.1016/B978-0-12-437552-9.X5000-4
27. Christov, I.I., Iliev, G.L. (2005) Public access defibrillation: Suppression of 16.7 Hz interference generated by the power supply of the railway systems. BioMedical Engineering Online, 4, art. no. 16, 8 p. DOI: 10.1186/1475-925X-4-16.
28. Dotsinsky, I. (2005): Suppression of AC railway power-line interference in ECG signals recorded by public access defibrillators. BioMedical Engineering Online, 4, art. no. 65, 23 p. DOI: 10.1186/1475-925X-4-65.
29. Dotsinsky, I., Stoyanov, (2005): T. Power-line interference cancellation in ECG signals. Biomedical Instrumentation and Technology, 39 (2), pp. 155-162.
30. Jekova, I., Krasteva, V. (2005): Subtraction of 16,7 Hz railroad net interference from the electrocardiogram: Application for automatic external defibrillators. Physiological Measurement, 26 (6), pp. 987-1003, DOI: 10.1088/0967-3334/26/6/009.
31. Pawan M, Gaikwad K (2005) Development of a portable ECG and pulse oximeter. Synopsis Report, Department of Electronics, Shivaji University, Kolhapur, India, pp. 1-11, 2005
32. Christov, I., G. Iliev (2005): Public access defibrillation: Suppression of 16.6 Hz interference generated by the power supply of the railway systems, Electrotechniques & Electronics E+E, 1-2, pp. 29-34.
33. Woo, J., Miller, C.A., Abbas, P.J., Hong, S.H., Kim, I.Y. (2006): Improved noise reduction in single fiber auditory neural responses using template subtraction. Journal of Neuroscience Methods, 155 (2), pp. 319-327, DOI: 10.1016/j.jneumeth.2006.01.015.
34. Hong Wanl, Rongshen Ful, Li Shil (2006) The elimination of 50 Hz power line interference from ECG using a variable step size LMS adaptive filtering algorithm. Life ScienceJournal, 3 (4), pp. 90-93,
35. Zheng, J.W., Wu, T.H., Fan, Y., Zhang, Z.B., Zhang, Y. (2007): Handheld devices make real-time telemedicine possible and affordable. 2007 IEEE/ICME International Conference on Complex Medical Engineering, CME 2007, art. no. 4381735, pp. 265-269. DOI: 10.1109/ICCME.2007.4381735.

36. Lan Rui-fen, Hu Guang-shu (2008) Design of simple integral coefficient notch filter to remove power-line interference in high sampling rate. *Space Medicine & Medical Engineering*, 21, (2).
37. Bansal, D., Khan, M., Salhan, A.K. (2009): A computer based wireless system for online acquisition, monitoring and digital processing of ECG waveforms. *Computers in Biology and Medicine*, 39 (4), pp. 361-367, DOI: 10.1016/j.compbiomed.2009.01.013.
38. Jatoth, R.K., Anoop, S.S.V.K.K., Prabhu, C.M. (2009): Biologically inspired evolutionary computing tools for the extraction of fetal electrocardiogram. *WSEAS Transactions on Signal Processing*, 5 (3), pp. 106-115.
39. Lin, W.-H., Wong, M.Y.-M., Pu, L.-N., Zhang, Y.-T. (2010): Comparison of median filter and discrete dyadic wavelet transform for noise cancellation in electrocardiogram. 2010 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC'10, art. no. 5627195, pp. 2395-2398. DOI: 10.1109/IEMBS.2010.5627195.
40. Dai Huhe, Jiang Shouda, Wei Chang'an (2010) A Novel Suppression Algorithm of Power Line Interference in ECG Signal. *Proceedings - 2010 1st International Conference on Pervasive Computing, Signal Processing and Applications, PCSPA 2010*, art. no. 5636083, 17-19 Sept, Harbin, China, pp. 657-660, DOI: 10.1109/PCSPA.2010.164. .
41. Wu Xian-Wen, Wang Feng (2010) Digital Filter for Electrocardiogram Preprocessing Based on Microprocessor. *Chinese Journal of Biomedical Engineering* 19, (1).
42. Sharmila, K., Krishna, E.H., Reddy, K.N., Reddy, K.A. (2011): Application of multiscale principal component analysis (MSPCA) for enhancement of ECG signals. *Conference Record - IEEE Instrumentation and Measurement Technology Conference*, art. no. 5944301, pp. 1540-1544. DOI: 10.1109/IMTC.2011.5944301.
43. Kansal M, Kumar V, Arora D, Saini HS (2011) Designing & implementation of digital filter for removal of power supply noise, *International Journal of Soft Computing and Engineering*, 1, (4), pp. 241-246.
44. Kansal M, (2011) Implementation of IIR filter for removal of power supply noise from ECG. *Int. J. of Mathematical Archive*, 2, (10), pp. 1833-1840.
45. Ming Li (2012): Approximating Ideal Filters by Systems of Fractional Order. *Computational and Mathematical Methods in Medicine*, art. no. 365054, ISSN: 1748670X, 6 pages, DOI: 10.1155/2012/365054.
46. Kenttä T, Tikkanen J, Wichmann V, Junttila J, Huijuri HV (2012) Automatic detection, localization and classification of early repolarization in standard 12-leads electrocardiography. *European Society of Cardiology conference*, 25-29 August, Munich, Germany, poster.
47. Amiri, M., Afzali, M., Vahdat, B.V. (2012): Comparison of different electrocardiogram signal power line denoising methods based on SNR improvement. 2012 19th Iranian Conference of Biomedical Engineering, ICBME 2012, art. no. 6519677, pp. 159-162. DOI: 10.1109/ICBME.2012.6519677.
48. Liu, J., Xie, F., Zhou, Y., Zou, Q., Wu, J. (2013): A wearable health monitoring system with multi-parameters. *Proceedings of the 2013 6th International Conference on Biomedical Engineering and Informatics, BMEI 2013*, art. no. 6746958, pp. 332-336. DOI: 10.1109/BMEI.2013.6746958.
49. Liu, J., Zhou, Y. (2013): Design of a novel portable ECG monitor for heart health. *Proceedings - 6th International Symposium on Computational Intelligence and Design, ISCID 2013*, 2, art. no. 6804877, pp. 257-260. DOI: 10.1109/ISCID.2013.178.
50. Li, N., Hao, S., Tang, H., Jin, Y., Li, F. (2013): Calibration device for multi-parameter simulator. *Proceedings of 2013 IEEE 11th International Conference on Electronic Measurement and Instruments, ICEMI 2013*, 1, art. no. 6743109, 16-18 August, Harbin, China, pp. 506-509, DOI: 10.1109/ICEMI.2013.6743109.

51. Manosueb, A., Koseeyaporn, J., Wardkein, P. (2014): PLI cancellation in ECG signal based on adaptive filter by using wiener-Hopf equation for providing initial condition. *Computational and Mathematical Methods in Medicine*, 2014, art. No. 471409, DOI: 10.1155/2014/471409.
52. Connolly, A.T., Muralidharan, A., Hendrix, C., Johnson, L., Gupta, R., Stanslaski, S., Denison, T., Baker, K.B., Vitek, J.L., Johnson, M.D. (2015): Local field potential recordings in a non-human primate model of Parkinsons disease using the Activa PC plus S neurostimulator. *Journal of Neural Engineering*, 12 (6), art. No. 066012, DOI: 10.1088/1741-2560/12/6/066012,
53. Bortolan, G., Christov, I., Simova, I., Dotsinsky, I. (2015): Noise processing in exercise ECG stress test for the analysis and the clinical characterization of QRS and T wave alternans. *Biomedical Signal Processing and Control*, 18, pp.378-385, DOI: 10.1016/j.bspc.2015.02.003,
54. Tadeáš Odstrčilík (2015) Analýza a zpracování EKG. MS thesis, Czech Technical University in Prague. 78 pages.
55. Kenttä, T., Porthan, K., Tikkanen, J.T., Väänänen, H., Oikarinen, L., Viitasalo, M., Karanko, H., Laaksonen, M., Huikuri, H.V. (2015): Sensitivity and Specificity of Automated Detection of Early Repolarization in Standard 12-Lead Electrocardiography. *Annals of Noninvasive Electrocardiology*, 20 (4), pp. 355-361. DOI: 10.1111/anec.12226,
56. Wang, J., Lv, Y., Dong, H., Wu, T., Bao, T., Feng, J. (2016): An improved algorithm for removing the power-line interference from ECG signals in high sampling rate. *Chinese Journal of Biomedical Engineering*, 35 (6), pp. 744-748. DOI: 10.3969/j.issn.0258-8021.2016.06.015.
57. Wang Jiming, Lv Yingying, Dong Han, Wu Tao, Bao Tao, Feng Jingyi (2016) An improved algorithm for removing the power-line interference from ECG signals in high sampling rate, *Chinese J. of Biomedical Engineering*, 35, (6), pp. 744-748.
58. Huamani, R.R., Talavera, J.R., Mendoza, E.A.S., Davila, N.M., Supo, E. (2017): Implementation of a real-time 60 Hz interference cancellation algorithm for ECG signals based on ARM cortex M4 and ADS1298. *Proceedings of the 2017 IEEE 24th International Congress on Electronics, Electrical Engineering and Computing, INTERCON 2017*, art. No. 8079725, DOI: 10.1109/INTERCON.2017.8079725., .
59. Vranić, I., Vranić, I., Antić, B., Stojanović, G., Al-Salami, H. (2019) Influence of the main filter on QRS-amplitude and duration in human electrocardiogram. *Measurement Science Review*, 19 (1), pp. 29-34 .
60. Bhoi, A.K., Sherpa, K.S., Khandelwal, B. (2019) Comparative analysis of filters for cancellation of power-line-interference of ECG signal. *International Journal Bioautomation*, 23 (3), pp. 259-282 .
61. Rawal, K., Sethi, G., Saini, B.S., Saini, I. (2019) HRV: A powerful tool in medical diagnosis. *Global Developments in Healthcare and Medical Tourism*, pp. 236-264 .
62. Paul, S., Kulshreshtha, S.K. (2019) Global Developments in Healthcare and Medical Tourism. *Global Developments in Healthcare and Medical Tourism*, pp. 1-341 .
63. Li, H. (2020) A Novel Dual-Slope Based Electrocardiogram Peak Detection Method for Wearable Devices. *Proceedings of 2020 IEEE 3rd International Conference on Information Systems and Computer Aided Education, ICISCAE 2020*, art. no. 9236911, pp. 327-331 .
64. Xie, Y., Qu, Z., Lu, M., Yin, W., Xu, H., Zhu, S., Tang, J., Chen, L., Ran, Q., Zhang, Y. (2020) Novel Wearable Sensors for Biomechanical Movement Monitoring Based on Electromagnetic Sensing Techniques. *IEEE Sensors Journal*, 20 (2), art. no. 8847612, pp. 1019-1027 .
65. Leski, J.M. (2021) Robust nonlinear aggregation operator for ECG powerline interference reduction. *Biomedical Signal Processing and Control*, 69, art. no. 102675. .
66. Dobrev, D.P., Alnasser, E., Neycheva, T.D. (2021) Application of Active Biased Integrators for Biosignal Processing. *2021 30th International Scientific Conference Electronics, ET 2021 - Proceedings*. .
67. Dobrev, D.P., Neycheva, T.D. (2022) High-quality biopotential acquisition without a reference electrode: power-line interference reduction by adaptive impedance balancing in a mixed analog–digital design. *Medical and Biological Engineering and Computing*, 60 (6), pp. 1801-1814. .

[C.3]. **Mihov, G.**, I. Dotsinsky. T. Georgieva (2005). [\*Subtraction Procedure for Power-Line Interference Removing from ECG: Improvement for Non-Multiple Sampling\*](#). Journal of Medical Engineering & Technology, 29, No 5, pp. 238-243.

68. Christov I. (2006): 'Power-line interference elimination from ECG: dynamic evaluation of the linearity criterion', Electrotechnika & Electronica E+E, 7-8, pp. 34-39.

69. Chawla M. P. S. (2007): 'Parameterization and R-peak error estimations of ECG signals using independent component analysis', Computational and Mathematical Methods in Medicine, 8, Issue 4, pp. 263 – 285.

70. Chavan, M.S., Agarwala, Ra., Uplane, M.D. (2008). Design and implementation of digital FIR equiripple notch filter on ECG signal for removal of power line interference. WSEAS Transactions on Signal Processing, 2008.

71. Kaur M, Singh B (2009) Powerline interference reduction in ECG using combination of MA method and IIR notch. International Journal of Recent Trends in Engineering, 2, (6), pp. 125-129.

72. Kaur M, Arora AS (2010) Combination method for powerline interference reduction in ECG. International Journal of Computer Applications, 1, (14), pp. 12-17.

73. Shrivastavaa A, G.R. Sinha (2010) A novel approach of ECG diagnosis and prediction of critical diseases for cardiac patients. International Journal of Image Processing, 4, (5), pp. 1-5, online.

74. Hu X, Xiao Z, Liu C (2010) Reduction arithmetic for power line interference from ecg based on estimating sinusoidal parameters. 3rd Int. Conf. on Biomedical Engineering and Informatics BMEI 2010, 16-18 October, Yantai, China, art. No 5640006, 2, pp. 2089-2092.

75. B. Pradeep Kumar and S. Balambigai (2012). A Survey on ECG De-Noising Techniques. Bonfring International Journal of Advance Image Processing, vol. 2, Special Issue 1, Part 1, February 2012.

76. Lee DH, Rabbi A, Choi J, Fazel-Rezai R (2012): Development of a Mobile Phone Based e-Health Monitoring Application. International Journal of Advanced Computer Science and Applications, 3, No. 3, pp. 38-43.

77. Maniruzzaman, Md., Billah, K.Md.S., Biswas, U., Gain, B. (2012). Least-mean-square algorithm based adaptive filters for removing power line interference from ECG signal. 2012 International Conference on Informatics, Electronics and Vision, ICIEV 2012, pp. 737-740

78. Țarălungă, D.-D., Ungureanu, G.-M., Gussi, I., Strungaru, R., Wolf, W. (2014). Fetal ECG extraction from abdominal signals: A review on suppression of fundamental power line interference component and its harmonics. Computational and Mathematical Methods in Medicine (Open Access), 239060, DOI: 10.1155/2014/239060.

79. Wasimuddin Muhammad, Gupta Navarun (2014): Design and implementation of Least Mean Square adaptive filter on fetal electrocardiography, 1 Conference of the American Society for Engineering Education (ASEE Zone 1), 3-5 April 2014, 5 pages, Bridgeport, CT, USA, Publisher IEEE, DOI: 10.1109/ASEEZone1.2014.6820650, ISBN: 978-1-4799-5232-5.

80. Huamani, R., Talavera, J.R., Mendoza, E.A.S., Davila, N.M., Supo, E. (2017): Implementation of a Real-Time 60 Hz Interference Cancellation Algorithm for ECG Signals Based on ARM Cortex M4 and ADS1298. IEEE 24th International Conference on Electronics, Electrical Engineering and Computing (INTERCON), Aug 15-18, Cusco, Peru, art. no. 8079725, DOI: 10.1109/INTERCON.2017.8079725.

81. Rizwan, A., Zoha, A., Mabrouk, I.B., Sabbour, H.M., Al-Sumaiti, A.S., Alomainy, A., Imran, M.A., Abbasi, Q.H. (2021) A Review on the State of the Art in Atrial Fibrillation Detection Enabled by Machine Learning. IEEE Reviews in Biomedical Engineering, 14, art. no. 9016113, pp. 219-239

82. Srivastava, T., Virk, S., Kumar, A., Ganguli, S. (2021) The role of electronic filters in biomedical applications: A brief survey. *Electronic Devices, Circuits, and Systems for Biomedical Applications: Challenges and Intelligent Approach*, pp. 309-324.

83. Bhardwaj, A., Budaraju, D., Venkatesh, P., Chowdhury, D., Kumar, R.P., Pal, K., Sivaraman, J., Neelapu, B.C. (2023) A Holistic Overview of Artificial Intelligence in Detection, Classification and Prediction of Atrial Fibrillation Using Electrocardiogram: A Systematic Review and Meta-analysis. *Archives of Computational Methods in Engineering*, 30 (7), pp. 4063-4079.

84. Mir, H.Y., Singh, O. (2024) Powerline interference reduction in ECG signals using variable notch filter designed via variational mode decomposition. *Analog Integrated Circuits and Signal Processing*, 118 (2), pp. 317-328.

[C.4]. Levkov, Ch., **G. Mihov**, R. Ivanov, **Ivan K. Daskalov**, I. Christov, I. Dotsinsky (2005). *Removal of power-line interference from the ECG: a review of the subtraction procedure*. *BioMedical Engineering OnLine*, 2005, 4:50. (<http://www.biomedical-engineering-online.com/content/4/1/50>).

85. Dobrev, D., T. Neycheva, N. Mudrov (2005): Simple two electrode biosignal amplifier, *Medical & Biological Engineering & Computing*, 43 (6), pp. 725-730. DOI: 10.1007/BF02430949

86. Tomoyuki Kamitani, Naohiro Toda (2006) Power-line Interference Removability of Adaptive Digital Filters. Institute of Electronics, Information and Communication Engineering, Technical Report, pp. 1-5.

87. Tomoyuki Kamitani, Naohiro Toda (2006) Alternative Noise Elimination by Adaptive Digital Filter in Biopotential Measurements. Graduate School of Information Science and Technology, Aichi Prefectural University, Technical Report, pp. 1-4.

88. Zheng JW, Zhang ZB, Wu TH, Zhang Y (2007) A wearable mobihealth care system supporting real-time diagnosis and alarm. *Medical and Biological Engineering and Computing*, 45 (9) pp. 877-885, DOI: 10.1007/s11517-007-0221-y.

89. Cushion TJ (2007) Notch Filtering Electromyography Signal. Individual Research Project Report, Electronic & Computer Science, University of Southampton, pp. 1-8.

90. Nelson Carlos Medeiros de Vasconcellos (2007) Topografia da coerência espectral dos potenciais eletroencefalográficos relacionados a eventos musculares. Dissertação, Universidade Federal Fluminense, Niterói, Brasil, 230 pages.

91. Gonzalez-Landaeta R, Casas Ó, Pallàs-Areny R (2007) Bathroom scales as patient interfaces for home health care. 1st Int. Conf. on Advancements of Medicine and Health Care through Technology, MediTech2007, 27-29th September, Cluj-Napoca, Romania, pp. 173-176.

92. Różanowski K, Sondej T, Radomski T, Piotrowski Z (2007) Wielozadaniowy system monitorowania sygnałów fizjologicznych i środowiskowych. *Elektronika: konstrukcje, technologie, zastosowania* 48, (9), pp. 85-91.

93. Yacoub, S., K. Raoof (2008): Power line interference rejection from surface electromyography signal using an adaptive algorithm. *ITBM-RBM*, © 2008 Elsevier Masson SAS, 29 (4), pp. 231-238, DOI:10.1016/j.rbmet.2007.09.002.

94. Yacoub S, Raoof K (2008): 'Noise removal from surface respiratory EMG signal', *World Academy of Science, Engineering and Technology*, 38, pp. 643-650.

95. Yacoub S, Raoof K (2008): Noise removal from surface respiratory EMG signal, *International Journal of Computer, Information, and Systems Science, and Engineering* 2, (4), pp. 226-233.

96. Dobrev D, Neycheva T, Mudrov N (2008): Bootstrapped two-electrode biosignal amplifier, *Med. Biolog. Eng. Comput.*, 46 (6), pp. 613-619, DOI: 10.1007/s11517-008-0312-4.

97. Curione M, Cammaro C, Cardarelli G, Di Bona S, Montesani T, Travasci L, Colandre M, Colott M, Ciancamerl M, Rong G (2008) QRS area monitoring during stress test: a novel index to separate normal to ischaemic patients? *Archives of Medical Science*, 4, (1), pp. 51-56.

98. Dobrev D, Neycheva T, Mudrov N (2008) Digital lock-in techniques for adaptive power-line interference extraction. *Physiological Measurement*, 29 (7), pp. 803-816. DOI: 10.1007/s11517-008-0312-4.
99. Chavan MS, Agarwala RA, Uplane MD (2008) Suppression of baseline wander and power line interference in ECG using digital IIR filter. *International Journal of Circuits, Systems and Signal Processing*, 2, (2), pp. 356-365.
100. Chavan MS, Agarwala RA, Uplane MD (2008) Rectangular window for interference reduction in ECG. 7th WSEAS International Conference on Signal Processing Istanbul, Turkey, May 27-30, pp. 110-114.
101. Chavan MS, Agarwala RA, Uplane MD (2008) Suppression of noise in the ECG signal using digital IIR filter. *Proceedings of the 8th WSEAS International Conference on Multimedia systems and signal processing*, Hangzhou, China, pp. 335-343.
102. Szilágyi SM, Szilágyi L, Görög LK, Luca CT, Cozma D, Ivanica G, Benyó Z (2008) An enhanced accessory pathway localization method for efficient treatment of Wolff-Parkinson-White syndrome. *Progress in Pattern Recognition, Image Analysis and Applications - Lecture Notes in Computer Science*, 13th Iberoamerican Congress on Progress in Pattern Recognition, Image Analysis and Applications, Havana, CUBA, Vol. 5197, pp. 269-276.
103. Zhidong, Z. Chan, M. (2008) A novel cancellation method of powerline interference in ECG signal based on EMD and adaptive filter, *International Conference on Communication Technology, ICCT*, 10-12 November, Bangkok, Thailand, pp. 517-520.
104. Jérôme Dumont (2008) Fouille de dynamiques multivariées, application à des données temporelles en cardiologie. *Dissertation pour obtenir le grade de Docteur de l'université de Rennes 1*, No d'ordre: 3682, 150 pages.
105. Lan Rui-fen, Hu Guang-shu (2008) Design of simple integral coefficient notch filter to remove power-line interference in high sampling rate. *Space Medicine & Medical Engineering*, 21, (2).
106. Tabakov, S., Iliev, I., Krasteva, V. (2008). Online digital filter and QRS detector applicable in low resource ECG monitoring systems. *Annals of Biomedical Engineering*, 36 (11), 1805-1815, DOI: 10.1007/s10439-008-9553-5.
107. Pasquariello G, Cesarelli M, Bifulco P, Fratini A, La Gatta A, Romano M (2009) Characterisation of baseline oscillation in congenital nystagmus eye movement recordings. *Biomedical Signal Processing and Control*, 4 (2), pp. 102-107, DOI: 10.1016/j.bspc.2009.01.003
108. Querellou E, Meyran D, Petitjean F, Le Dreff P, Maurin O. (2009): Ventricular fibrillation diagnosed with trans-thoracic echocardiography. *Resuscitation*, 80 Issue: 10 Pages: 1211-1213, DOI: 10.1016/j.resuscitation.2009.06.033.
109. Davie W. J., M. J. Fowler, E. Koumoundouros (2009). ECG interference suppressed using a harmonic generator. *Australasian Physical and Engineering Sciences in Medicine*, 32, (3), pp. 159-164.
110. Kaur M, Singh B (2009) Powerline interference reduction in ECG using combination of MA method and IIR notch. *International Journal of Recent Trends in Engineering*, 2, (6), pp. 125-129.
111. Chaudhuri S, Pawar TD, Duttagupta S, (2009) *Ambulation Analysis in Wearable ECG*, © Springer, ISBN: 978-1-4419-0723-3, 153 pages
112. Suranai Pongpon Sri (2009). An approach based on wavelet decomposition and neural network for ECG noise reduction. *Thesis, Faculty of California Polytechnic State University*, 189 pages.
113. Guanghao Shen, Erping Luo, Lihua Lu, Qiaoling Xu, Xiaoming Wu (2009) New Method of Designing Digital Notch Filter of Mains Frequency. 3rd Int. Conf. on Bioinformatics and Biomedical Engineering, 11-13 June, Beijing, China, DOI 10.1109/ICBBE.2009.5163103, CD-version, 3 pages.



114. Истомина ТВ, Кривоногов ЛЮ, Лавреев АА (2009) Информационные методы повышения надежности кардиоанализаторов на основе помехоустойчивой обработки электрокардиосигнала. Симпозиум „Надежность и качество“, стр. 76-80.
115. Dobrev DP, Neycheva TD, Mudrov NT (2009) High-Q comb filter for mains interference suppression. *Annual Journal of Electronics*, 3, (1), pp. 47-49.
116. Dobrev DP, Neycheva TD, Mudrov NT (2009) Simple high-Q comb filter for mains interference and baseline drift suppression. *Annual Journal of Electronics*, 3, (1), pp. 50-52.
117. Hu Wei Wei, Chang-Red (2010) Frequency interference cancellation algorithm based on sinusoidal parameter estimation. *Journal of Biomedical Engineering*, 6, 1243-1246
118. Vale-Cardoso AS, Guimarães HN (2010). The effect of 50/60 Hz notch filter application on human and rat ECG recordings. *Physiological Measurements*, 31 (1), pp. 45-58.
119. Husn-Hsien Chang, Moura JMF (2010) Biomedical Signal Processing. Invited chapter in: *Biomedical Engineering and Design Handbook*, Ed: Myer Kutz, 2nd Edition, Volume 1, McGraw Hill, Chapter 22, pp. 559-579.
120. Aschero G, Gizdulich P (2010) Denoising of surface EMG with a modified Wiener filtering approach. *Journal of Electromyography and Kinesiology* 20, (2), pp. 366-373.
121. Amann A, Klotz A, Niederklapfer T, Kupferthaler A, Werther T, Granegger M, Lederer W, Baubin M, Lingnau W (2010) Reduction of CPR artifacts in the ventricular fibrillation ECG by coherent line removal. *BioMedical Engineering OnLine*, 9 (2), pp. 1-12, DOI: 10.1186/1475-925X-9-2
122. Kaur M, Arora AS (2010) Combination method for powerline interference reduction in ECG. *International Journal of Computer Applications*, 1, (14), pp. 12-17.
123. Momot A, Momot M (2010) Adaptive Time-Varying Frequency Characteristic Filtering of ECG Signal. In: *Information Technologies in Biomedicine: Advances in Soft Computing*, Eds: Pietka E, Kawa J, © Springer, 69, pp. 273-282.
124. Miguel Alfonso Altuve Paredes (2010) Adaptación de un método de detección de latidos y de segmentación del electrocardiograma al neonato prematuro para caracterizar episodios de apnea-bradicardia. Assoc. Prof. promotion work, División de Ciencias y Tecnologías Administrativas e Industriales, Departamento de Tecnología Industrial, Universidad Simón Bolívar, 48 pages,
125. Hu X, Xiao Z, Liu C (2010) Reduction arithmetic for power line interference from ecg based on estimating sinusoidal parameters. 3rd Int. Conf. on Biomedical Engineering and Informatics, 16-18 October, Yantai, China, art. No 5640006, 2, pp. 2089-2092.
126. Bahoura, M., Ezzaidi, H (2010) FPGA-implementation of wavelet-based denoising technique to remove power-line interference from ECG signal. *Int. Conf. on Information Technology Applications in Biomedicine*, 2-5 November, Corfu, Greece, ISBN: 978-142446560-6, DOI: 10.1109/ITAB. 5687709, 2010.
127. Badreldin IS, El-Kholy DS, El-Wakil AA (2010) A modified adaptive noise canceler for electrocardiography with no power-line reference. 5th Cairo International Biomedical Engineering Conference, CIBEC 2010, 16-18 December, Cairo, Egypt, pp.13-16.
128. Jeon-Hong-Gyu, Joik-Se-Ong, Gwon-Hyeok-Sung. (2010) Denoising algorithm of non-multiple powerline interference for QRS complex using subtraction method. *Int. Techn. Conf. on Circuits Systems, Computers and Communications*, 4-7 July, Pattaya, Thailand, pp. 1093-1094.
129. Lee M, Shyu K, Lee P, Huang C, Chiu Y (2011) Hardware implementation of EMD using DSP and FPGA for on-line signal processing, *IEEE Transactions on Industrial Electronics*, 58 (6), pp. 2473-2481, DOI: 10.1109/TIE.2010.2060454.
130. Trigano T, Isserles U, Ritov Y (2011) Semiparametric curve alignment and shift density estimation for biological data. *IEEE Transactions in Signal Processing*, 59, (5), pp. 1970-1984.
131. Anita P., Talele K.T. (2011) ECG feature extraction using wavelet based derivative approach. *Technology Systems and Management*, 145 (2), pp. 239-247. DOI: 10.1007/978-3-642-20209-4\_34.



132. Chinchkhede KD, Yadav GS, Hirekhan SR, Solanke DR (2011) On the implementation of FIR filter with various windows for enhancement of ECG signal. *International Journal of Engineering Science and Technology*, 3, (3), pp. 2031-2040.
133. Lehmann C, Reinstädter J, Khawaja A (2011) Detection of power-line interferences in ECG signal using frequency-domain analysis. *Computing in Cardiology*, 38, pp. 821-824.
134. Miklós SS, Szilágyi L, Görög LK, Luca CT, Cozma D, Ivanica G, Benyó Z (2011) An enhanced method for accessory pathway localization in case of Wolff-Parkinson-White syndrome. *Acta Physiologica Hungarica*, 98, (3), pp. 347-358.
135. Tavares C, Martins RC, Laranjo S, Rocha I (2011) Computational tools for assessing cardiovascular variability. 1st Portuguese Meeting in Bioengineering, 1-4 March, Lisbon, Portugal, pp. 1-6, DOI: 10.1109/ENBENG.2011.6026082.
136. Olli Heikkinen (2011) Development and validation of an ambulatory heart rate variability measurement system. MS thesis. Department of Applied Physics, University of Eastern Finland, Kuopio, 64 pages.
137. Jeon-Hong-Gyu, Joik-Se-Ong, Gwon-Hyeok-Sung. (2011) Adaptive subtraction method for removing variable powerline interference of ECG. *J. of Korean Institute of Information and Communication Sciences*, 15, (2), pp. 447-454.
138. Naohiro Toda (2011) A Cancellation method of periodic interference in pulse-like signals using adaptive filter and its application to flash ERGs. *Electronics Information and Communication Engineering*, vol J94-D, (10), pp. 1685-1695, ISSN: 0915-1915.
139. Neuza Filipa Martins Nunes (2011) Algorithms for time series clustering applied to biomedical signals. MS thesis, New University of Lisbon, 75 pages.
140. Szilágyi, S.M., Szilágyi, L., Gorog, L.K., Luca, C.T., Cozma, D., Ivanica, G., Benyó, Z. (2011): An enhanced method for accessory pathway localization in case of Wolff-Parkinson-White syndrome. 98 (3) pp. 347-358, DOI: 10.1556/APhysiol.98.2011.3.12.
141. Johannesen L, Galeotti L (2012) Automatic ECG quality scoring methodology: mimicking human annotators. *Physiological Measurement*, 33 (9), pp.1479-1489, DOI: 10.1088/0967-3334/33/9/1479.
142. Yu, W., Han, Q., Ma, J., Xie, P. Yu, W., Han, Q., Ma, J., Xie, P. (2012): A new method for biomedical signal processing with EMD and ICA approach. *Advanced Materials Research*, 546-547, pp. 548-552. DOI: 10.4028/www.scientific.net/AMR.546-547.548.
143. Zhou, Z., Yang, K. (2012) *Journal of Computers (Finland)*, 7 (11), pp. 2821-2828. DOI: 10.4304/jcp.7.11.2821-2828.
144. Jagtap, S.K., Uplane, M.D. (2012): The impact of digital filtering to ECG analysis: Butterworth filter application. *Proceedings - 2012 International Conference on Communication, Information and Computing Technology, ICCICT 2012*, art. no. 6398145, DOI: 10.1109/ICCICT.2012.6398145.
145. Shen, Y.H., Zheng, J.W., Zhang, Z.B., Li, C.M. (2012): Design and Implementation of a Wearable, Multiparameter Physiological Monitoring System for the Study of Human Heat Stress, Cold Stress, and Thermal Comfort. *Instrumentation Science & Technology*. 40 (4), pp. 290-304 DOI: 10.1080/10739149.2012.673193.
146. Wu Chung-Hao (2012). A signal processing approach to Post-ACS patients risk stratification using ECG. Thesis, Institute of Electronic Engineering, National Taiwan University, 76 pages.
147. Albert D, Satchwell BR, Barnett KN (2012) Wireless, ultrasonic personal health monitoring system. US patent No US 8301232 B2.
148. Hernandez, A.I., Dumont, J. Altuve, M. Beuchee, A. Carrault, G. (2012): Evolutionary Optimization of ECG Feature Extraction Methods: Applications to the Monitoring of Adult Myocardial Ischemia and Neonatal Apnea Bradycardia Events. Eds: Gacek A; Pedrycz W., pp. 237-273, Book DOI: 10.1007/978-0-85729-868-3\_11.

149. Haberman M.A., Spinelli E.M. (2012): A multichannel EEG acquisition scheme based on single ended amplifiers and digital DRL. *IEEE Transactions on Biomedical Circuits and Systems*, 6, (6), pp. 614-618, DOI: 10.1109/TBCAS.2012.2190733,
150. Wei Yu, Qiang Han, Jing Jing Ma, Pei Xie (2012) A new method for biomedical signal processing with EMD and ICA approach. *Advanced Materials Research*, vol. 546 – 547, *Electrical Insulating Materials and Electrical Engineering*, pp. 548-552, ISSN: 1022-6680.
151. Vale-Cardoso AS, Moreira MG, Guimarães HN (2012). An introduction to hardware and methods for biopotential measurements: A review. *Recent Patents on Biomedical Engineering*, 5, (2), pp. 105-113, ISSN: 1874-7647.
152. Țarălungă D., Strungaru R., Ungureanu M., Wolf W. (2012): Abdominal signals: Different concepts for reliable FECG recordings. *UPB Scientific Bulletin, Series C: Electrical Engineering*, 74, (3), pp. 201-218, ISSN: 1454234X.
153. Fasano A, Villani V (2012): Joint denoising and narrowband artifact rejection for ECG signals. *Computing in Cardiology*, 39, pp. 49-52, ISSN 0276-6574.
154. Yi-min Hsu (2012) Research and implementation of portable wireless ECG device. MS thesis, National Taiwan University of Science and Technology, 77 pages
155. Tudosa I, Adochiei N (2012) LMS algorithm derivatives used in real-time filtering of ECG signals: A study case on performance evaluation. *Int. Conf on Electrical and Power Engineering*, 25-27 Oct., Iasi, Romania, pp. 565-570.
156. Li, G.J., Zeng, X.P., Zhou, X.N., Zhou, Y., Liu, G.J., Zhou, X.C. (2012). Robust suppression of nonstationary power-line interference in electrocardiogram signals. *Physiological Measurement*, 33 (7) pp. 1151-1169, DOI: 10.1088/0967-3334/33/7/1151.
157. Li, G., Zeng, X., Zhang, S., Zhou, X., Zhou, X. (2013): A robust nonstationary powerline interference suppressor for ECG signals based on masking signal-aided EMD. *Information (Japan)*, 16 (9 B), pp. 6961-6973. DOI: 10.1088/0967-3334/33/7/1151.
158. Galiana-Merino JJ, Ruiz-Fernandez D, Martinez-Espla JJ (2013) Power line interference filtering on surface electromyography based on the stationary wavelet packet transform. *Computer Methods and Programs in Biomedicine*, 111 (2), pp. 338-346 DOI: 10.1016/j.cmpb.2013.04.022.
159. Suchetha, M., Kumaravel, N. (2013). Empirical mode decomposition-based subtraction techniques for 50 hz interference reduction from electrocardiogram. *IETE Journal of Research*, 59 (1), pp. 55-62, DOI: 10.4103/0377-2063.110631.
160. Suchetha, M., Kumaravel, N. (2013). Empirical mode decomposition based filtering techniques for power line interference reduction in electrocardiogram using various adaptive structures and subtraction methods. *Biomedical Signal Processing and Control*, 8 (6), pp. 575-585, DOI: 10.1016/j.bspc.2013.05.001.
161. Bansal D (2013) Computer based model to filter real time acquired human carotid pulse. *Signal Processing: An International Journal*, 7, (1), pp. 42-51;
162. Bansal D (2013) Design of 50 Hz notch filter circuits for better detection of online ECG. *Int. J. of Biomedical Engineering and Technology*, 13, pp. 30-48. DOI: 10.1504/IJBET.2013.057712.
163. Zivanovic, M., González-Izal, M. (2013). Simultaneous powerline interference and baseline wander removal from ECG and EMG signals by sinusoidal modeling. *Medical Engineering and Physics*, 35 (10), pp. 1431-1441, DOI: 10.1016/j.medengphy.2013.03.015.
164. Lev Koyrakh (2013) System and method for filtering electrophysiological signals US patent: US 8,620,978 B2
165. Albert D, Satchwell BR, Barnett N (2013) Heart monitoring system usable with a smartphone or computer. US patent US8509882 B2.
166. Vourvopoulos, A. (2013) Brain-controlled virtual environments: an evaluation study of Brain computer interfaces for serious game interaction. MS thesis, Coventry University, UK, 125 pages.

167. Agustín José Calleja Gómez (2013) Detección QRS mediante filtrado digital. Slides presentation, 107 slides.
168. Zhou, X., Zhang, Y. (2013). A hybrid approach to the simultaneous eliminating of power-line interference and associated ringing artifacts in electrocardiograms. *BioMedical Engineering Online (Open Access)*, 12, art. No 42, DOI: 10.1186/1475-925X-12-42.
169. Hernández AI, Dumont J, Altuve M, Beuchée A., Carrault G (2014) Evolutionary optimization of ECG feature extraction methods: Applications to the monitoring of adult myocardial ischemia and neonatal apnea bradycardia events. Chapter 11, pp. 237-273. In: *ECG signal processing, classification and interpretation: A comprehensive framework of computational intelligence*, Eds: Gacek A, Pedrycz W, © Springer, 278 pages.
170. Bhasin A, Jain A, Ghosh T (2014) Spectral analysis of ECG signal for detection of power line interference. *Int. J. for Research in Applied Science & Engineering Technology*, 2, (11), pp. 200-202.
171. David Albert (2014) Cardiac performance monitoring system for use with mobile communications devices. US patent No US8700137 B2, <https://www.google.com/patents/US8700137>
172. Huang Yi-Hao (2014) Automated sleep stage recognition and OSA detection system. PhD thesis, Institute of Electronic Engineering, National Taiwan University, 94 pages, <http://www.airitilibrary.com/Publication/alDetailedMesh?docid=U0001-1808201413010300>
173. Kumaragamage C.L., Lithgow B.J., Moussavi Z. (2014) Development of an ultra low noise, miniature signal conditioning device for vestibular evoked response recordings, *BioMedical Engineering OnLine* 2014, 13:6, doi:10.1186/1475-925X-13-6
174. Taralunga D-D, Ungureanu G-M, Gussi I, Strungaru R, Wolf W. (2014): Fetal ECG extraction from abdominal signals: A review on suppression of fundamental power line interference component and its harmonics. *Computational and Mathematical Methods in Medicine*, pages 15, art. No 239060 DOI: 10.1155/2014/239060.
175. Keshtkaran MR, Yang Z (2014). A fast, robust algorithm for power line interference cancellation in neural recording, *Journal of Neural Engineering*, 11 (2), 18 pages, art. No 026017 DOI: 10.1088/1741-2560/11/2/026017,
176. Marzencki M, Kajbafzadeh B, Khosrow-Khavar F, Tavakolian K, Kaminska B, Menon C (2014) Diastolic timed vibrator: Noninvasive pre-hospitalization treatment of acute coronary ischemia. *IEEE Transactions on Biomedical Circuits and Systems*, 8, (3), pp. 313-324.
177. Coventry BS, Thomas CW (2014) Time-frequency equivalence in removing sinusoidal interference from electrocardiograms. *Int. J. of Biomedical Science and Engineering*, 2, (4), pp. 27-32.
178. Luke Nyhof (2014) Biomedical signal filtering for noisy environments, PhD thesis, Centre for Intelligence Systems Research, Deakin University, Australia.
179. Awadhesh Pachauri (2014) Feature extraction, modeling and synthesis of ECG from arterial blood pressure and central venous pressure signals by signal processing techniques, PhD Thesis, Department of electronic and communication engineering, School of Engineering, Tezpur University, Napaam, Tezpur, Assam, India, 245 pages.
180. Jagannath, D.J., Selvakumar, A.I. (2014): Issues and research on foetal electrocardiogram signal elicitation. *Biomedical Signal Processing and Control*, 10, pp. 224-244 DOI: 10.1016/j.bspc.2013.11.001.
181. Țarălungă, D.-D., Ungureanu, G.-M., Gussi, I., Strungaru, R., Wolf, W. (2014). Fetal ECG extraction from abdominal signals: A review on suppression of fundamental power line interference component and its harmonics. *Computational and Mathematical Methods in Medicine (Open Access)*, 239060, 2014.
182. Mateo J, Sánchez-Morla EM, Santos JL (2015) A new method for removal of powerline interference in ECG and EEG recordings *Computers & Electrical Engineering*. 45, pp. 235-248, doi:10.1016/j.compeleceng.2014.12.006
183. Valchinov E, Antoniou A, Rotas K, Pallikarakis N (2015) Wearable ECG System for Health and Sports Monitoring, 4 pages, 4th International Conference on Wireless Mobile Commu-

nication and Healthcare - "Transforming Healthcare Through Innovations in Mobile and Wireless Technologies", MOBIHEALTH 2014

184. Benatti S, Milosevic B, Tomasini M, Farella E, Schonle P, Bunjaku P (2015) Multiple biopotentials acquisition system for wearable applications. *Int. Conf. Biomedical Electronics and Devices*, 12-15 Jan., Lisbon, Portugal, pp. 260-268.

185. Taralunga DD, Gussi I, Strungaru R (2015) Fetal ECG enhancement: Adaptive power line interference cancellation based on Hilbert Huang Transform. *Biomedical Signal Processing and Control*, 19, pp. 77-84. DOI: 10.1016/j.bspc.2015.03.009.

186. Chakchai So-In, Phaudphut C, Rujirakul K (2015) Real-time ECG noise reduction with QRS complex detection for mobile health services. *Arabian Journal of Science and Engineering*, 40 (9), pp. 2503-2514, DOI: 10.1007/s13369-015-1658-1.

187. Akwei-Sekyere S. (2015): Powerline noise elimination in biomedical signals via blind source separation and wavelet analysis. *PEERJ*, Vol. 3, art. No e1086, DOI: 10.7717/peerj.10863,

188. Li TJ, Li TH (2015) PLL-based adaptive power line interference canceller for ECG signal. In: *Multimedia, Communication and Computing Application*, ed. Ally Leung, pp. 307-310.

189. Bhoi AK, Sherpa KS, Phurailatpam D, Tamang JS (2015) Multidimensional approaches for noise cancellation of ECG signal. *International Conference on Communication and Signal Processing*, 2-4 April, Melmaruvathur, India, pp. 60-64.

190. Dev R, Singh AK (2015) Distortion analysis of EMG signal using LabVIEW as an effective tool. *Int. J. of Biomedical Engineering and Technology*, 19, (2), pp. 187-204, DOI: 10.1504/IJBET.2015.072936.

191. Dobrev DP, Neycheva TD (2015) Adaptive incremental estimation filter for AC noise in electrocardiograms. *Annual Journal of Electronics*, pp. 14-17.

192. Dobrev DP, Neycheva TD (2015) Software PLL for power-line interference synchronization: Implementation and results, *Annual Journal of Electronics*, 9, pp. 18-21.

193. Kumar LA, Vigneswaran C (2016) *Electronics in textiles and clothing: Design, products and applications*. Book (415 pages), CRC Press, Taylor and Francis Group, pp 375-412

194. Fasano A, Villani V (2015) Fast and effective estimation of narrowband components for bioelectrical signals. *37th Annual International Conference of The IEEE Engineering In Medicine And Biology Society*, Milan, Italy, pp. 7841-7844.

195. Hurezeanu B, Tarălungă D, Strungaru R, Gussi I, Wolf V, Ungur M (2015) Robust fetal heart beat detection by applying stationary wavelet transform. *Scientific Bulletin University Politehnica of Bucharest*, 7, (4), pp. 273-284.

196. Wang W (2015). The tracking and reconstructing for sharp spikes of biomedical signals: An exploration for applications of tracking-differentiators. *8th International Conference on Biomedical Engineering and Informatics*, 14-16 Oct, Shenyang, China, pp. 245-249.

197. Abdul Samad Noraini (2015) Signal interference to electroencephalogram and electrocardiogram signal. MS thesis, Universiti Teknologi Malaysia, 98 pages.

198. Tan, B., Lin, J., Li, W., Cai, K. (2015). A discriminant method of blind source separation based on FECG correlations. *5th International Conference on Information Science and Technology, ICIST 2015*, pp. 269-275.

199. Bhaskar PC, Uplane MD (2015) FPGA based digital FIR multilevel filtering for ECG denoising. *Int. Conf. on Information Processing*, 16-19 Dec., Pune, India, pp. 733-738.

200. Limaye MH, Deshmukh MV (2016) ECG noise sources and various noise removal techniques: A survey. *Int. J. of Application or Innovation in Engineering & Management*, 5, (2), pp. 86-92.

201. Aggarwal N, Singh BA (2016) Review of techniques for foetal electrocardiogram extraction. *Communications on Applied Electronics*, 4, (9), pp. 41-47.

202. Pereira, F., Carvalho, V., Soares, F., Machado, J., Bezerra, K., Silva, R., Matos, D. (2016): Development of a Medical Care Terminal for Efficient Monitoring of Bedridden Subjects. *J. of Engineering*, vol. 2016, 9 pages, art. No UNSP 3591059, DOI: 10.1155/2016/3591059

203. Galloway CDC, Albert DE (2016) Electrocardiogram signal detection. US Patent US9254095 B2.
204. Albert DE, Wade J (2016) Systems and methods for processing and analyzing medical data. US Patent US9254092 B2.
205. Albert DE (2016). Two electrode apparatus and methods for twelve lead ECG. US Patent US9351654 B2.
206. Galloway CDC, Valys AV, Hughes NP, Albert DE (2016) Devices and methods for real-time denoising of electrocardiograms. US Patent US9247911 B2.
207. Sharma T, Sharma KK (2016) Power line interference removal from ECG signals using wavelet transform based component-retrieval. Int. Conf. on Advances in Computing, Communications and Informatics, 21-24 Sept., Jaipur, India, pp. 95-101.
208. Ahmed W, Khalid S (2016) ECG signal processing for recognition of cardiovascular diseases: A survey. Sixth International Conference on Innovative Computing Technology, 24-26 Aug., Dublin, Ireland, pp. 677-682.
209. Wang Jiming, Lv Yingying, Dong Han, Wu Tao, Bao Tao, Feng Jingyi (2016) An improved algorithm for removing the power-line interference from ECG signals in high sampling rate, Chinese J. of Biomedical Engineering, 35, (6), pp. 744-748, .
210. Daluwatte, C., Johannesen, L., Galeotti, L., Vicente, J., Strauss, D.G., Scully, C.G. (2016). Assessing ECG signal quality indices to discriminate ECGs with artefacts from pathologically different arrhythmic ECGs, Physiological Measurement, 37 (8) pp. 1370-1382, DOI: 10.1088/0967-3334/37/8/1370.
211. Tomasini, M., Benatti, S., Milosevic, B., Farella, E., Benini, L. (2016) Power Line Interference Removal for High-Quality Continuous Biosignal Monitoring with Low-Power Wearable Devices. IEEE Sensors Journal, 16 (10), pp. 3887-3895, DOI: 10.1109/JSEN.2016.2536363.
212. Simov, D. (2016): Electrocardiographic changes in certain cardiovascular physiological and pathological settings. Impact on coronary artery bypass grafting. (2016) International Journal Bioautomation, 20 (1), pp. 43-68.
213. Dobrev, D.P., Neycheva, T.D., (2016): Automatic common mode electrode-amplifier impedance balance with SPLN synchronization. IEEE 25th International Scientific Conference on Electronics (ET). Sozopol, BULGARIA, WOS:000390766000019.
214. Dobrev, D.P., Neycheva, T.D., (2016): Automatic current driven electrode-amplifier impedance balance with SPLN synchronization. IEEE 25th International Scientific Conference on Electronics (ET). Sozopol, BULGARIA, WOS:000390766000018.
215. de Waal, C.G., Kraaijenga, J.V., Hutten, G.J., de Jongh, F.H., van Kaam, A.H. (2017) Breath detection by transcutaneous electromyography of the diaphragm and the Graseby capsule in preterm infants. Pediatric Pulmonology, 52 (12), pp. 1578-1582. DOI: 10.1002/ppul.23895.
216. Ravikanth, L., Jayas, D.S., White, N.D.G., Fields, P.G., Sun, D.W. (2017): Extraction of Spectral Information from Hyperspectral Data and Application of Hyperspectral Imaging for Food and Agricultural Products. 10 (1), pp. 1-33, DOI: 10.1007/s11947-016-1817-8.
217. Pei, S.C., Lu, W.Y., Guo, B.Y. (2017): Pole-Zero Assignment of All-Pass-Based Notch Filters. IEEE Transactions on Circuits and Systems II-Express Briefs. 64 (4), pp. 477-481, DOI: 10.1109/TCSII.2016.2589973.
218. Zivanovic M, Niegowski M, Lecumberri P, Gómez, M (2017) A low-rank matrix factorization approach for joint harmonic and baseline noise suppression in biopotential signals. Computer Methods and Programs in Biomedicine, Vol. 141, pp. 59-71, DOI: 10.1016/j.cmpb.2017.01.008
219. Spinelli E, Guerrero FN (2017) The biological amplifier. In: Further Understanding of the Human Machine: The Road to Bioengineering, Ed: Max Valentinuzzi, pp. 463-500.
220. Levin M, Bar-tal M (2017) Multi-channel ECG measurement. US patent 9591981 B2.
221. Essay UK (2017) Emotion recognition based on EEG signal.

222. Ugranli HG, Yildirim M, Kaçar F (2017) Design of low power DT MOS based FCS and its notch filter application for ECG signals. *Int. J. of Computational and Experimental Science and Engineering*, 3, (1), pp. 29-32.
223. Yue Qiu, Feng Xiao, Haibin Shen (2017) Elimination of power line interference from ECG signals using recurrent neural networks. 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, South Korea, pp. 2296-2299.
224. Bhoi AK, Sherpa, KS, Khandelwal B (2017) Baseline drift removal of ECG signal: Comparative analysis of filtering techniques. *Biomedical Engineering: Concepts, Methodologies, Tools, and Applications*, pp. 379-396.
225. Jiang, Y.B., Ji, N., Wang, H., Liu, X.Y., Geng, Y.J., Li, P. Chen, S.X., Li, G.L. (2017): Comparison of Different Shielding Methods in Acquisition of Physiological Signals. 39th Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society, 11-15 July, Jeju Island, South Korea, pp. 2325-2328.
226. Kocon S, Okoniewski P, Piskorowski J (2017) Experimental results of stable time-varying multi-notch filter. 22nd International Conference on Methods and Models in Automation and Robotics, Miedzyzdroje, Poland, pp. 243-247.
227. Kahankova R, Jaros R, Martinek R, Jezewski J, Wen H, Jezewski M, Kawala-Janik A (2017). Non-adaptive methods of fetal ECG signal processing. *Advances in Electrical and Electronic Engineering*, 15, (3), pp. 476-490, DOI: 10.15598/aeec.v15i3.2196.
228. Salmanvandi M, Einalou Z (2017) Separation of twin fetal ECG from maternal ECG using empirical mode decomposition techniques. *Biomedical Engineering: Applications, Basis and Communications*, 29, (06), 12 pages, art. No. 1750042, DOI: 10.4015/S1016237217500429. **Scopus**)
229. Vishnu P, Ramalingam CS. (2017): On the connection between matrix notch filter and maximum likelihood estimation of sinusoidal parameters. 11th International Conference on Signal Processing and Communication Systems, Australia, pp.1-6.
230. Huamani, R., Talavera, JR., Mendoza, EAS., Davila, NM., Supo, E. (2017): Implementation of a Real-Time 60 Hz Interference Cancellation Algorithm for ECG Signals Based on ARM Cortex M4 and ADS1298. IEEE 24th International Conference on Electronics, Electrical Engineering and Computing (INTERCON), Cusco, PERU.
231. Asgari, S., Mehrnia, A. (2017). A novel low-complexity digital filter design for wearable ECG devices. *PLOS ONE* 12 (4) art. No. e0175139, DOI: 10.1371/journal.pone.0175139.
232. Lacirignola, F., Pasero, E. (2017): Hardware Design of a Wearable ECG-Sensor Strategies implementation for improving CMRR and reducing noise. IEEE European Conference on Circuit Theory and Design (ECCTD), Catania, ITALY, ISBN: 978-1-5386-3974-0.
233. Gupta V, Mittal M (2018) KNN and PCA classifier with Autoregressive modelling during different ECG signal interpretation. 6th International Conference on Smart Computing and Communications - Procedia Computer Science, Natl Inst Technol, Kurukshetra, INDIA, 125, pp. 18-24.
234. Parente FR, Di Giovanni S, Ferri G, Stornelli V, Pennazza G, Santonico M. (2018): An analog bootstrapped biosignal read-out circuit with common-mode impedance two-electrode compensation. *IEEE Sensors Journal*, 18 (7), pp. 2861-2869, DOI: 10.1109/JSEN.2018.2799849.
235. Jiang Y, Samuel O.W., Liu, X., Wang, X., Idowu, P.O., Li, P., Chen, F., Zhu, M., Geng, Y., Wu, F., Chen, S., Li, G. (2018). Effective biopotential signal acquisition: Comparison of different shielded drive technologies. *Applied Sciences*, 8, (2), art. No. 276, DOI: 10.3390/app8020276.
236. Freudzon L, Akhtar S, London MJ, Barash PG (2018) Electrocardiographic Monitoring. pp. 168-177, In: Kaplan's Essentials of Cardiac Anesthesia, Editor: Kaplan JA, second edition, 800 pages, © Elsevier.
237. Prime D, Rowlands D, O'keefe S, Dionisio S (2018) Considerations in performing and analyzing the responses of cortico-cortical evoked potentials in stereo-EEG. *Epilepsia*, 59, (1), pp. 16-26, DOI: 10.1111/epi.13939.

238. Yadav, O.P., Ray, S. (2018) Efficient ECG Approximation Using Chebyshev Polynomials. *Proceedings of the International Conference on Inventive Research in Computing Applications, ICIRCA 2018*, art. no. 8597372, pp. 1110-1115.
239. García, M., Martínez-Iniesta, M., Ródenas, J., Rieta, J.J., Alcaraz, R. (2018) A novel wavelet-based filtering strategy to remove powerline interference from electrocardiograms with atrial fibrillation. *Physiological Measurement*, 39 (11), art. no. 115006,
240. Meng, S., Du, Z., Yuan, L., Wang, S., Han, R., Wang, X. (2018) Membership function-weighted non-linear fitting method for optical-sensing modeling and reconstruction. *Sensors (Switzerland)*, 18 (11), art. no. 3762,
241. Jaros, R., Martinek, R., Kahankova, R. (2018) Non-adaptive methods for fetal ECG signal processing: A review and appraisal. *Sensors (Switzerland)*, 18 (11), art. no. 3648,
242. Cosoli, S., Grcic, B., de Vos, S., Hetzel, Y. (2018) Improving data quality for the Australian high frequency ocean radar network through real-time and delayed-mode quality-control procedures. *Remote Sensing*, 10 (9), art. no. 1476
243. Liu, W., Fang, X., Chen, Q., Li, Y., Li, T. (2018) Reliability analysis of an integrated device of ECG, PPG and pressure pulse wave for cardiovascular disease. *Microelectronics Reliability*, 87, pp. 183-187.
244. Appathurai, A., Jerusalin Carol, J., Raja, C., Kumar, S.N., Daniel, A.V., Jasmine Gnana Malar, A., Fred, A.L., Krishnamoorthy, S. (2019) A study on ECG signal characterization and practical implementation of some ECG characterization techniques. *Measurement: Journal of the International Measurement Confederation*, 147, art. no. 106384
245. Warke, N., Nair, J.M., Vaidya, P.P. (2019) Common mode voltage removal using new balancing technique for extraction of low level differential signals embedded in large common mode voltages. *International Journal of Engineering and Advanced Technology*, 9 (1), pp. 5533-5538.
246. Martínez-Iniesta, M., Ródenas, J., Rieta, J.J., Alcaraz, R. (2019) The stationary wavelet transform as an efficient reductor of powerline interference for atrial bipolar electrograms in cardiac electrophysiology. *Physiological Measurement*, 40 (7), art. no. 075003,
247. Okoniewski, P., Piskowski, J. (2019) Short transient parameter-varying IIR filter based on analog oscillatory system. *Applied Sciences (Switzerland)*, 9 (10), art. no. 2013
248. Hayes, M., Mitchell, B., Bonnett, B., Frampton, M., Heffernan, B. (2019) Tank-tests of a prototype electromagnetic groundwater flowmeter. *I2MTC 2019 - 2019 IEEE International Instrumentation and Measurement Technology Conference, Proceedings, 2019-May*, art. no. 8827068,
249. Wu, S.-C., Chen, P.-T., Hsieh, J.-H. (2019) Spatiotemporal features of electrocardiogram for biometric recognition. *Multidimensional Systems and Signal Processing*, 30 (2), pp. 989-1007.,
250. Huamani, R., Talavera, J.R., Davila, N.M. (2019) Benchmarks and profiling of the WRF model within the Hydro-Meteorological Observatory of the Province of Cordoba. *2018 IEEE Biennial Congress of Argentina, ARGENCON 2018*, art. no. 8646044,
251. Bhoi, A.K., Sherpa, K.S., Khandelwal, B. (2019) Comparative analysis of filters for cancellation of power-line-interference of ECG signal. *International Journal Bioautomation*, 23 (3), pp. 259-282.
252. Yadav, O.P., Ray, S. (2019) Piecewise Modeling of ECG Signals Using Chebyshev Polynomials. *Advances in Intelligent Systems and Computing*, 711, pp. 287-296.
253. Simao, M., Mendes, N., Gibaru, O., Neto, P. A (2019) Review on Electromyography Decoding and Pattern Recognition for Human-Machine Interaction. *IEEE Access*, 7, art. no. 8672131, pp. 39564-39582.
254. Chatterjee, S., Thakur, R.S., Yadav, R.N., Gupta, L., Raghuvanshi, D.K. Review of noise removal techniques in ECG signals (2020) *IET Signal Processing*, 14 (9), pp. 569-590.
255. Izan, N.F., Salleh, S.H., Ting, C.-M., Noman, F., Sh-Hussain, H., Poznanski, R.R., Latif, A.Z.A. (2020) Clinical interpretations of the effectiveness of changes in body position during aerobic fitness after neurologic injury. *Journal of Integrative Neuroscience*, 19 (3), pp. 479-487.



256. Abdollahpoor, R., Lotfivand, N. (2020) Fully Adaptive Denoising of ECG Signals Using Empirical Mode Decomposition with the Modified Indirect Subtraction and the Adaptive Window Techniques. *Circuits, Systems, and Signal Processing*, 39 (8), pp. 4021-4046.
257. Srivastava, A., Yadav Cht, K.T., Tiwari, R., Venkateswaran, K. (2020) A Brief Study on Noise Reduction Approaches Used in Electrocardiogram. *Proceedings of the 2nd International Conference on Inventive Research in Computing Applications, ICIRCA 2020*, art. no. 9183188, pp. 1023-1027.
258. Yazdanpanah, H., Diniz, P.S.R., Lima, M.V.S. (2020) Feature Adaptive Filtering: Exploiting Hidden Sparsity. *IEEE Transactions on Circuits and Systems I: Regular Papers*, 67 (7), art. no. 9024231, pp. 2358-2371.
259. Herraiz, A.H., Martínez-Rodrigo, A., Bertomeu-González, V., Quesada, A., Rieta, J.J., Alcaraz, R. (2020) A deep learning approach for featureless robust quality assessment of intermittent atrial fibrillation recordings from portable and wearable devices. *Entropy*, 22 (7), art. no. 733,
260. Bui, N.T., Phan, D.T., Nguyen, T.P., Hoang, G., Choi, J., Bui, Q.C., Oh, J. (2020) Real-Time Filtering and ECG Signal Processing Based on Dual-Core Digital Signal Controller System. *IEEE Sensors Journal*, 20 (12), art. no. 9003254, pp. 6492-6503.
261. Wang, L., Zhang, F., Lu, K., Abdulaziz, M., Li, C., Zhang, C., Chen, J., Li, Y. (2020) Nano-copper enhanced flexible device for simultaneous measurement of human respiratory and electro-cardiac activities. *Journal of Nanobiotechnology*, 18 (1), art. no. 82,
262. Hamood, S.A., Al-Hilali, A.A., Jumaa, L.F. (2020) Heart irregularities detection based ECG signals. *Medico-Legal Update*, 20 (2), pp. 752-758.
263. Bui, N.T., Nguyen, T.M.T., Park, S., Choi, J., Vo, T.M.T., Kang, Y.-H., Kim, B.-G., Oh, J. Design of a nearly linear-phase IIR filter and JPEG compression ECG signal in real-time system (2021) *Biomedical Signal Processing and Control*, 67, art. no. 102431,
264. Fu, Z., Hong, S., Zhang, R., Du, S. Artificial-intelligence-enhanced mobile system for cardiovascular health management (2021) *Sensors (Switzerland)*, 21 (3), art. no. 773, pp. 1-16.
265. Slimane, A.B., Zaid, A. Real-Time fast fourier transform-based notch filter for single-frequency noise cancellation: Application to electrocardiogram signal denoising (2021) *Journal of Medical Signals and Sensors*, 11 (1), pp. 52-61.
266. Rizwan, A., Zoha, A., Mabrouk, I.B., Sabbour, H.M., Al-Sumaiti, A.S., Alomainy, A., Imran, M.A., Abbasi, Q.H. A Review on the State of the Art in Atrial Fibrillation Detection Enabled by Machine Learning (2021) *IEEE Reviews in Biomedical Engineering*, 14, art. no. 9016113, pp. 219-239.
267. Aqil, M., Jbari, A., Bourouhou, A. (2021) Comparison of ECG Baseline Wander Removal Techniques and Improvement Based on Moving Average of Wavelet Approximation Coefficients. *International Journal Bioautomation*, 25 (2), pp. 183-204.
268. Ahmed, Y.K., Zubair, A.R. (2021) Performance evaluation of wavelet de-noising schemes for suppression of power line noise in electrocardiogram signals. *Nigerian Journal of Technological Development*, 18 (2), pp. 144-151.
269. Zschorlich, V.R., Qi, F., Wolff, N. (2021) Comparing different filter-parameter for pre-processing of brain-stimulation evoked motor potentials. *Brain Sciences*, 11 (9), art. no. 1118.
270. Janwadkar, S., Dhavse, R. Strategic (2021) Design and Optimization of Vedic Low Pass FIR Filter for ECG Signals. *Lecture Notes in Electrical Engineering*, 748, pp. 1-15.
271. Rehman, I.U., Raza, H., Razzaq, N., Zaidi, T. (2021) Parallel Distributed Framework for State Space Adaptive Filter for Removal of PLI from Cardiac Signals. *International Journal Bioautomation*, 25 (3), pp. 249-270.
272. Kozłowski, M., Singh, S., Ramage, G., Rodriguez-Villegas, E. (2021) Effects of denoising strategies on R-wave detection in ECG analysis. *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS*, pp. 373-376.

273. Srivastava, T., Virk, S., Kumar, A., Ganguli, S. . (2021) The role of electronic filters in biomedical applications: A brief survey. *Electronic Devices, Circuits, and Systems for Biomedical Applications: Challenges and Intelligent Approach*, pp. 309-324.
274. Bui, N.-T., Byun, G.-S. (2021) The comparison features of ECG signal with different sampling frequencies and filter methods for real-time measurement. *Symmetry*, 13 (8), art. no. 1461.
275. Leski, J.M. (2021) Robust nonlinear aggregation operator for ECG powerline interference reduction. *Biomedical Signal Processing and Control*, 69, art. no. 102675.
276. Chen, Q., Kastratovic, S., Eid, M., Ha, S. (2021) A non-contact compact portable ecg monitoring system. *Electronics (Switzerland)*, 10 (18), art. no. 2279.
277. Dobrev, D.P., Alnasser, E., Neycheva, T.D. (2021) Application of Active Biased Integrators for Biosignal Processing. 2021 30th International Scientific Conference Electronics, ET 2021 - Proceedings.
278. Velvizhi, V.A., Priya, E. (2022) A Preprocessing Techniques for Seismocardiogram Signals in Removing Artifacts. *Lecture Notes in Electrical Engineering*, 792, pp. 845-853.
279. Jeong, J.-W., Lee, W., Kim, Y.-J. (2022) A real-time wearable physiological monitoring system for home-based healthcare applications. *Sensors*, 22 (1), art. no. 104.
280. Amin, M., Ullah, K., Asif, M., Waheed, A., Haq, S.U., Zareei, M., Biswal, R.R. (2022) ECG-Based Driver's Stress Detection Using Deep Transfer Learning and Fuzzy Logic Approaches. *IEEE Access*, 10, pp. 29788-29809.
281. Wei, Y., Yang, L., Yang, Z. (2022) Improvements of ECG design for portable monitors based on classic 3-amplifier model. *Proceedings of SPIE - The International Society for Optical Engineering*, 12165, art. no. 121651R.
282. Inban, P., Punchalard, R., Benjangkaprasert, C. (2022) An Improved RLS-based Interference Cancellation. *Proceedings of the 2022 International Electrical Engineering Congress, iEECON 2022*.
283. Kheirati Roonizi, A., Selesnick, I.W. (2022) A Kalman Filter Framework for Simultaneous LTI Filtering and Total Variation Denoising. *IEEE Transactions on Signal Processing*, 70, pp. 4543-4554.
284. Neycheva, T.D., Dobrev, D.P. (2022) Design of Fractional Filters for Power-line Interference Suppression in ECG Signals. 2022 31st International Scientific Conference Electronics, ET 2022 - Proceedings.
285. Lakshmi, P.V., Musala, S., Srinivasulu, A. (2022) Implantable Cardio Technologies: A Review of Integrated Low Noise Amplifiers. *Wearable and Neuronic Antennas for Medical and Wireless Applications*, pp. 11-35.
286. Krishna Chaitanya, M., Sharma, L.D. (2022) Electrocardiogram signal filtering using circulant singular spectrum analysis and cascaded Savitzky-Golay filter. *Biomedical Signal Processing and Control*, 75, art. no. 103583.
287. Dobrev, D.P., Neycheva, T.D. (2022) High-quality biopotential acquisition without a reference electrode: power-line interference reduction by adaptive impedance balancing in a mixed analog-digital design. *Medical and Biological Engineering and Computing*, 60 (6), pp. 1801-1814.
288. Neycheva, T., Dobrev, D., Krasteva, V. (2022) Common-Mode Driven Synchronous Filtering of the Powerline Interference in ECG. *Applied Sciences (Switzerland)*, 12 (22), art. no. 11328.
289. Li, C., Wu, Y., Lin, H., Li, J., Zhang, F., Yang, Y. (2022) ECG Denoising Method Based on an Improved VMD Algorithm. *IEEE Sensors Journal*, 22 (23), pp. 22725-22733.
290. Stankus, V., Navickas, P., Slušnienė, A., Laucevičienė, I., Stankus, A., Laucevičius, A. (2022) A Novel Adaptive Noise Elimination Algorithm in Long RR Interval Sequences for Heart Rate Variability Analysis. *Sensors*, 22 (23), art. no. 9213.
291. Naga Sandhya Devi, G., Mittal, V.K. Enhancing ECG Signal in Noisy Environment: A Review (2023) *Lecture Notes in Computational Vision and Biomechanics*, 37, pp. 427-437.
292. Ng, C.L., Reaz, M.B.I., Crespo, M.L., Cicuttin, A., Bin Shapiai, M.I., Bin Md Ali, S.H., Binti Kamal, N., Chowdhury, M.E.H. (2023) A Flexible Capacitive Electromyography Biomedical

- Sensor for Wearable Healthcare Applications. IEEE Transactions on Instrumentation and Measurement, 72, art. no. 4007213.
293. Ng, C.L., Bin Ibne Reaz, M., Bin Md Ali, S.H., Crespo, M.L., Cicuttin, A., Hoque Chowdhury, M.E., Kiranyaz, S., Kamal, N.B. (2023) Powerline interference suppression of a textile-insulated capacitive biomedical sensor using digital filters. Measurement: Journal of the International Measurement Confederation, 207, art. no. 112425
  294. Mistry, S., Gouripeddi, R., Reno, C.M., Abdelrahman, S., Fisher, S.J., Facelli, J.C. (2023) Detecting hypoglycemia-induced electrocardiogram changes in a rodent model of type 1 diabetes using shape-based clustering. PLoS ONE, 18 (5 May), art. no. e0284622.
  295. Bhardwaj, A., Budaraju, D., Venkatesh, P., Chowdhury, D., Kumar, R.P., Pal, K., Sivaraman, J., Neelapu, B.C. (2023) A Holistic Overview of Artificial Intelligence in Detection, Classification and Prediction of Atrial Fibrillation Using Electrocardiogram: A Systematic Review and Meta-analysis. Archives of Computational Methods in Engineering, 30 (7), pp. 4063-4079.
  296. Zope, S.P., Chaudhari, N., Patil, N., Pawar, U. (2023) PulseGuard: Intelligent Arrhythmia Detection and Classification through ECG Signal Analysis. International Journal of Intelligent Systems and Applications in Engineering, 11 (4), pp. 603-613.
  297. Li, K., Guo, Z., Bai, Y., Tang, D., Huang, M., Luo, H. (2023) Real-time notch filtering based on the modified subspace-based high-resolution frequency estimator. Transactions of the Institute of Measurement and Control, 45 (14), pp. 2822-2831.
  298. Khan Mamun, M.M.R., Elfouly, T. AI-Enabled (2023) Electrocardiogram Analysis for Disease Diagnosis. Applied System Innovation, 6 (5), art. no. 95.
  299. Azzouz, A., Bengherbia, B., Wira, P., Alaoui, N., Souahlia, A. . (2023) The Effectiveness of Optimal Discrete Wavelet Transform Parameters Obtained Using the Genetic Algorithm for ECG Signal Denoising. Revue d'Intelligence Artificielle, 37 (6), pp. 1387-1396.
  300. Lilda, S.D., Jayaparvathy, R. (2024) Machine Learning Techniques in ECG Data Analysis for Medical Applications. Handbook of AI-Based Models in Healthcare and Medicine: Approaches, Theories, and Applications, pp. 226-246.
  301. Galdos, J., Lopez, N., Medina, A., Huarca, J., Huarca, J., Sulla, E. (2024) Comparison DND Evaluation of LMS-Derived Algorithms Applied on ECG Signals Contaminated with Motion Artifact During Physical Activities. Applied Computer Science, 20 (1), pp. 157-172.
  302. Gupta, V., Saxena, N.K., Kanungo, A., Diwania, S., Kumar, P., Gupta, V. (2024) ECG signal analysis using autoregressive modelling with and without baseline wander. International Journal of System Assurance Engineering and Management, 15 (3), pp. 1119-1146.
- [C.5]. **Mihov, G.**, I. Dotsinsky (2008). [\*Power-line interference elimination from ECG in case of non-multiplicity between the sampling rate and the power-line frequency\*](#). Biomedical Signal Processing & Control. 3, No 3, doi:10.1016/j.bspc.2008.04.006, ISSN 1746-8094, October, pp.334-340, 2008.
303. Rahman, M.Z.U., Ahamed Shaik, R., Reddy, D.V.R.K. (2010). Baseline wander and Power line interference elimination from Cardiac signals using Error Nonlinearity LMS algorithm. International Conference on Systems in Medicine and Biology, ICSMB 2010 – Proceedings, 5735375, pp. 217-220, DOI: 10.1109/ICSMB.2010.5735375.
  304. Hu X, Xiao Z, Liu C (2010) Reduction arithmetic for power line interference from ecg based on estimating sinusoidal parameters. 3rd Int. Conf. on Biomedical Engineering and Informatics, 16-18 October, Yantai, China, BMEI 2010, 5, art. no. 5640006, pp. 2089-2092. DOI: 10.1109/BMEI.2010.5640006.
  305. Dai Huhe, Jiang Shouda, Wei Chang'an (2010) A Novel Suppression Algorithm of Power Line Interference in ECG Signal. First Int. Conf. on Pervasive Computing, Signal Processing and Applications PCSPA 2010, 17-19 Sept, Harbin, China, pp. 657-660, DOI: 10.1109/PCSPA.2010.164.

306. Muhammad Zia Ur Rahman, Rafi Ahamed Shaik, DV Rama Koti Reddy (2011): Efficient sign based normalized adaptive filtering techniques for cancelation of artifacts in ECG signals: Application to wireless biotelemetry, *Signal Processing*, 91 (2), pp. 225-239, doi: 10.1016/j.sigpro.2010.07.002.
307. Adochiei, N.I., David, V., Tudosa, I. (2011). Methods of electromagnetic interference reduction in electrocardiographic signal acquisition. *Environmental Engineering and Management Journal*, 10 (4), pp. 553-559.
308. Zia-Ur-Rahman, M., D.V.R.K. Reddy, Y. Sangeetha. (2011). Stationary and non-stationary noise removal from cardiac signals using a Constrained Stability Least Mean Square algorithm. 2011 International Conference on Communications and Signal Processing (ICCSP). 10-12 Feb. 2011, Kerala, India, art. no. 5739366, pp. 485-488. DOI: 10.1109/ICCSP.2011.5739366.
309. Hegde VN, Deekshit R, Satyanarayana PS (2011): 'Comparison of characterizing and data analysis methods for detecting abnormalities in ECG', Internet (AH-ICI), Second Asian Himalayas International Conference on Internet, 4-6 Nov2011, Kathmundu, Nepal, Print ISBN: 978-1-4577-1087-2, art. no. 6113950, pages 5, DOI: 10.1109/AHICI.2011.6113950.
310. Basha NJ, Rahman MZ-U, Rao RM (2011): Noise Removal from Electrocardiogram Signals using Leaky and Normalized version of Adaptive Noise Canceller, *Int J Computer Science & Communication Networks*, 1(1), page 81-84.
311. Rahman MZU, Shaik RA, Reddy DVRK (2012): Efficient and simplified adaptive noise cancelers for ECG sensor based remote health monitoring, *IEEE Sensors Journal*, 12 (3), art. no. 5709965, pp. 566-573, DOI: 10.1109/JSEN.2011.2111453.
312. Adochiei, N.I., Dorffner, G., David, V. (2012). Heart rate variability monitoring due to 50 Hz electromagnetic field exposure and statistical processing. *EPE 2012 - Proceedings of the 2012 International Conference and Exposition on Electrical and Power Engineering*, art. no. 6463591, pp. 610-613. DOI: 10.1109/ICEPE.2012.6463591.
313. Chen, L., Zhang, L., Guo, Y. (2012). Power line interference removal method based on unifying model blind separation algorithm. *Applied Mechanics and Materials*, 201-202, pp. 454-457. DOI: 10.4028/www.scientific.net/AMM.201-202.454.
314. Anitha Boge, V. Vijaya, Prof. K. Kishan Rao (2012). Clearing Artifacts using a Constrained Stability Least Mean Square Algorithm from Cardiac Signals. *International Journal of Scientific & Engineering Research*, Volume 3, Issue 11, November-2012, ISSN 2229-5518, IJSER © 2012.
315. Fathima S, Yasmin GVS, Karthik M, Rahman ZU, Lay-Ekuakille A (2012): 'Efficient Artifact Elimination in Cardiac Signals using Variable Step Size Adaptive Noise Cancellers', *Journal of Measurement Technologies and Instrumentation Engineering*. 2 (1) pp. 35-51, doi:10.4018/ijmtie.2012010103
316. Rahman, M.Z.U., Karthik, G.V.S., Fathima, S.Y., Lay-Ekuakille, A. (2013). An efficient cardiac signal enhancement using time-frequency realization of leaky adaptive noise cancelers for remote health monitoring systems. *Measurement: Journal of the International Measurement Confederation*, 46 (10), pp. 3815-3835. DOI: 10.1016/j.measurement.2013.07.009.
317. Karthik, G.V.S., Sugumar, S.J. (2013). High resolution cardiac signal extraction using novel adaptive noise cancellers. *Proceedings - 2013 IEEE International Multi Conference on Automation, Computing, Control, Communication and Compressed Sensing, iMac4s*, art. no. 6526474, pp. 564-568. DOI: 10.1109/iMac4s.2013.6526474.
318. Gowri, T., Swomya, I., Rahman, Z.U., Dodda, R.K.R. (2014). Adaptive powerline interference removal from cardiac signals using Leaky based normalized higher order filtering techniques. *Proceedings - 1st International Conference on Artificial Intelligence, Modelling and Simulation, AIMS 2013*, art. no. 6959932, pp. 294-298. DOI: 10.1109/AIMS.2013.54.
319. Sharma, A. (2014). Efficient use of bi-orthogonal wavelet transform for caridac signals. *Research Journal of Applied Sciences*, 9 (7), pp. 429-435. DOI: 10.3923/rjasci.2014.429.435.

320. Tan, X., Chen, X., Hu, X., Ren, R., Zhou, B., Fang, Z., Xia, S. (2014). EMD-based electrocardiogram delineation for a wearable low-power ECG monitoring device. *Canadian Journal of Electrical and Computer Engineering - Revue Canadienne De Genie Electrique Et Informatique, Engineering*, 37 (4), art. no. 6994942, pp. 212-221. DOI: 10.1109/CJECE.2014.2316852.
321. Arpit Sharma, Sandeep Toshniwal (2014). Efficient Use of Bi-Orthogonal Wavelet Transform for Cardiac Signals. *International Journal of Advanced Research in Computer and Communication Engineering* Vol. 3, Issue 2, February 2014, pp. 5329-5332. ISSN (Online): 2278-1021, ISSN (Print): 2319-5940.
322. Arpit Sharma, Sandeep Toshniwal, Richa Sharma (2014): Noise Reduction Technique for ECG Signals Using Adaptive Filters. *International Journal of Recent Research and Review*, Vol. VII, Issue 2, June 2014, ISSN 2277 8322.
323. Monpur Ashwin, Chunduri.VMNaren Simha (2014): Performance Analysis of Different LMS Algorithms for Health Monitoring ECG Sensor *International Journal of Scientific & Engineering Research*, Volume 5, Issue 3, March-2014, ISSN 2229-5518.
324. Radhika P, Ashwin M, Simha (2014). CVMN: Performance Analysis of Different LMS Algorithms for Health Monitoring ECG Sensor, *International Journal of Scientific and Engineering Research*, pp. 1376-1382, 2014, ISSN 2229-5518.
325. Sharma, A. (2015). Efficient Use of Biorthogonal Wavelet Transform for Cardiac Signals. *International Journal of Computer Science and Network Security*, 15 (2), pp. 64-67.
326. H. Naseri, M.R. Homaeinezhad (2015) Electrocardiogram signal quality assessment using an artificially reconstructed target lead, *Computer Methods in Biomechanics and Biomedical Engineering*, 18 (10), pp. 1126-1141, DOI:10.1080/10255842.2013.875163.
327. Mugdha, A.C., Rawnaque, F.S., Ahmed, M.U. (2015). A study of recursive least squares (RLS) adaptive filter algorithm in noise removal from ECG signals, 4th International Conference on Informatics, Electronics and Vision, ICIEV 2015, art. no. 7333998, DOI: 10.1109/ICIEV.2015.7333998.
328. Manivel K, Samson Ravindran R (2015): 'Noise Removal for Baseline Wander and Power Line in Electrocardiograph Signals', *International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering (An ISO 3297: 2007 Certified Organization)* Vol. 4, Issue 2, ISSN (Print): 2320 3765, ISSN (Online): 2278 8875
329. Sharma, A. (2016). Efficient Use of Biorthogonal Wavelet Transform for Cardiac Signals. *International Journal of Computer Science and Network Security*, 16 (2), pp. 101-104.
330. Khaliq A, Waseem A, Munir MF, Ahmad R (2016): 'Comparison of adaptive noise cancelers for ECG signals in wireless biotelemetry system', *International Conference on Intelligent Systems Engineering*, ICISE 2016, art. no. 7475117, pp. 181-184. DOI: 10.1109/INTELSE.2016.7475117
331. Sharma, A. (2016). Efficient Use of Biorthogonal Wavelet Transform for Cardiac Signals. *International Journal of Computer Science and Network Security*, Vol.16 No.2, February 2016, pp.101-104.
332. Sasikala, S., Murugesan, G. (2017): Efficient digit serial architecture for sign based least mean square adaptive filter for denoising of artefacts in ECG signals. *International Journal of Biomedical Engineering and Technology*, 23 (2-4), pp. 335-344. DOI: 10.1504/IJBET.2017.082672.
333. Huamani, R.R., Talavera, J.R., Mendoza, E.A.S., Davila, N.M., Supo, E. (2017): Implementation of a real-time 60 Hz interference cancellation algorithm for ECG signals based on ARM cortex M4 and ADS1298. *Proceedings of the 2017 IEEE 24th International Congress on Electronics, Electrical Engineering and Computing*, INTERCON 2017, art. no. 8079725, DOI: 10.1109/INTERCON.2017.8079725.
334. Bahaz, M., Benzid, R. (2018): Efficient algorithm for baseline wander and powerline noise removal from ECG signals based on discrete Fourier series. *Australasian Physical and Engineering Sciences in Medicine*, 41 (1), pp. 143-160. DOI: 10.1007/s13246-018-0623-1.

335. Nagal, R., Kumar, P., Bansal, P. (2019) Noise reduction from ECG signal using error normalized step size least mean square algorithm (ENSS) with wavelet transform. *Advances in Intelligent Systems and Computing*, 731, pp. 163-171.
  336. Rana, M.M., Akter, T., Abdelhadi, A. (2020) Variable Step Size-Least Mean Squared Algorithm for ECG Signal Denoising Considering Baseline Wander Noise and Cyber Attacks. *International Conference on Advanced Communication Technology, ICACT*, 2020, art. no. 9061264, pp. 272-275.
  337. Amini, S., Mozaffari Tazehkand, B. (2022) Design of feedback-structured IIR notch filter with transient suppression using gain variation. *Biomedical Signal Processing and Control*, 71, art. no. 103075.
  338. Neycheva, T., Dobrev, D., Krasteva, V. (2022) Common-Mode Driven Synchronous Filtering of the Powerline Interference in ECG. *Applied Sciences (Switzerland)*, 12 (22), art. no. 11328.
- [C.6]. Dotsinsky, I., **G. Mihov** (2008). [\*Tremor suppression in ECG\*](#). *BioMedical Engineering OnLine* 2008, 7:29 doi: 10.1186/1475-925X-7-29, 2008.
339. Gowri, T., Swomya, I., Rahman, Z.U., Dodda, R.K.R. (2013) Adaptive powerline interference removal from cardiac signals using Leaky based normalized higher order filtering techniques. *Proceedings - 1st International Conference on Artificial Intelligence, Modelling and Simulation, AIMS* 2013, art. no. 6959932, pp. 294 - 298.
  340. Bortolan, G., Christov I. (2014). Dynamic Filtration of High-Frequency Noise in ECG Signal, *Computing in cardiology*, 41 (January), 7043236, pp. 1089-1092.
  341. C.L. Kumaragamage, B.J. Lithgow, Z. Moussavi (2014) Development of an ultra low noise, miniature signal conditioning device for vestibular evoked response recordings, *BioMedical Engineering OnLine* 2014, 13:6, DOI:10.1186/1475-925X-13-6.
  342. Kumar, A., Singh, M. (2015) Optimal selection of wavelet function and decomposition level for removal of ECG signal artifacts. *Journal of Medical Imaging and Health Informatics*, 5 (1), pp. 138-146.
  343. Zhang, Qingxue; Zhou, Dian; Zeng, Xuan. (2016). A novel machine learning-enabled framework for instantaneous heart rate monitoring from motion-artifact-corrupted electrocardiogram signals. *Physiological Measurement*, 37 (11), pp. 1945-1967, Nov. 2016.
  344. Zhang, Q., D. Zhou, X. Zeng (2017). Highly wearable cuff-less blood pressure and heart rate monitoring with single-arm electrocardiogram and photoplethysmogram signals. *BioMedical Engineering OnLine*, 16 (1), art. no. 23, . DOI: 10.1186/s12938-017-0317-z.
  345. Christov I., Neucheva T., Schmid R., Stoyanov T., Abächerli R. (2017) Pseudo-real-time low-pass filter in ECG, self-adjustable to the frequency spectra of the waves. *Med. Biol. Eng. Comput.*, 55 (9), pp. 1579-1588. DOI: 10.1007/s11517-017-1625-y.
  346. Sasikala, S., Murugesan, G. (2017) Efficient digit serial architecture for sign based least mean square adaptive filter for denoising of artefacts in ECG signals. *International Journal of Bio-medical Engineering and Technology*, 23 (2-4) pp. 335 - 344.
  347. Lastre-Dominguez C, Shmaliy YS, Ibarra-Manzano O, Morales-Mendoza LJ. (2017): 'Unbiased FIR denoising of ECG signals', 14th International Conference on Electrical Engineering, Computing Science and Automatic Control, CCE 2017, art. no. 8108834. DOI: 10.1109/ICEEE.2017.8108834
  348. Lastre-Dominguez, C., Shmaliy, Y.S., Ibarra-Manzano, O., Vazquez-Olguin, M., Munoz-Minjarez, J. (2018) ECG Signals Denoising in State Space using UFIR Filtering for Features Extraction. 2018 15th International Conference on Electrical Engineering, Computing Science and Automatic Control, CCE 2018, art. no. 8533909,
  349. Lastre-Domínguez, C., Shmaliy, Y.S., Ibarra-Manzano, O., Munoz-Minjares, J., Morales-Mendoza, L.J. (2019) ECG Signal Denoising and Features Extraction Using Unbiased FIR Smoothing. *BioMed Research International*, 2019, art. no. 2608547.



350. Lastre-Dominguez, C., Shmaliy, Y.S., Ibarra-Manzano, O., Vazquez-Olguin, M. Denoising and features extraction of ECG signals in state space using unbiased FIR smoothing (2019) IEEE Access, 7, art. no. 8873580, pp. 152166-152178.
  351. Tulyakova, N., Trofymchuk, O. (2020) Locally Adaptive Filtering of Non-Stationary Noise in Long-Term Electrocardiographic Signals [Локально-адаптивная фильтрация нестационарного шума в длительных электрокардиографических сигналах]. Radioelectronic and Computer Systems, (4), pp. 16-33.
  352. Christov, I., Gotchev, A., Bortolan, G., Neycheva, T., Raikova, R., Schmid, R. (2020) Separation of the Electromyographic from the Electrocardiographic Signals and Vice Versa. A Topical Review of the Dynamic Procedure. International Journal Bioautomation, 24 (3), pp. 289-317.
  353. Bentes, P.C.L., Nadal, J. (2021) A telediagnosis assistance system for multiple-lead electrocardiography. Physical and Engineering Sciences in Medicine,
  354. Alibrandi, L., Tognetti, R., Domenech, O., Croce, M., Giuntoli, M., Grosso, G., Vezzosi, T. (2024) Smartphone-based six-lead ECG: A new device for electrocardiographic recording in dogs. Veterinary Journal, 303, art. no. 106043.
- [C.7]. Dotsinsky, I., **G. Mihov** (2010) [\*Simple approach for tremor suppression in electrocardiograms\*](#), Bioautomation, 14(2), pp. 129-136.
355. Shreya Das, Monisha Chakraborty (2011): 'QRS Detection Algorithm Using Savitzky-Golay Filter', Proc. of Int. Joint Colloquium on Emerging Technologies in Computer Electrical and Mechanical 2011, pp. 56-59, DOI: 02.CEM.2011.01,
  356. Chakraborty M, Das S (2012): Determination of Signal to Noise Ratio of Electrocardiograms Filtered by Band Pass and Savitzky-Golay Filters, Procedia Technology, 4, pp. 830-833,
  357. Bortolan, G., Christov, I. (2014): Dynamic Filtration of High-Frequency Noise in ECG Signal. 41st Computing in Cardiology Conference (CINC), Sep. 07-10, 2014, Cambridge, MA, Vol. 41 pp. 1089-1092.
  358. Hashemi, A., Rahimpour, M., Merati, M.R. (2015): Dynamic Gaussian Filter for Muscle Noise Reduction in ECG Signal. 23rd Iranian Conference on Electrical Engineering (ICEE), pp. 120-124.
  359. Zhang, Q.X., Zhou, D.A., Zeng, X. (2016): A novel machine learning-enabled framework for instantaneous heart rate monitoring from motion-artifact-corrupted electrocardiogram signals. Physiological Measurement, 37 (11), pp. 1945-1967 DOI: 10.1088/0967-3334/37/11/1945.
  360. Q Zhang, D Zhou, X Zeng (2017). Highly wearable cuff-less blood pressure and heart rate monitoring with single-arm electrocardiogram and photoplethysmogram signals. BioMedical Engineering OnLine, 2017.
  361. Tulyakova N (2017) Locally-adaptive Myriad filters for processing ECG signals in real time. Int. J. of Bioautomation, 27, (1), pp. 5-18.
- [C.8]. **Mihov, G.** (2013). [\*Complex filters for the subtraction procedure for power-line interference removal from ECG\*](#). Int. J. Reasoning-based Intelligent Systems, Vol. 5, No. 3, ISSN: 1755-0556, pp. 146-153, 2013.
362. Bhogeshwar, S.S., Soni, M.K., Bansal, D (2014). To verify and compare denoising of ECG signal using various denoising algorithms of IIR and FIR filters. International Journal of Biomedical Engineering and Technology, 6 (3), pp. 244-267, 2014.
  363. Huamani, R.R., Talavera, J.R., Mendoza, E.A.S., Davila, N.M., Supo, E. (2017). Implementation of a real-time 60 Hz interference cancellation algorithm for ECG signals based on ARM cortex M4 and ADS1298. Proceedings of the 2017 IEEE 24th International Congress on Electronics, Electrical Engineering and Computing, INTERCON 2017, art. no. 8079725.



364. Bhogeshwar, S.S., Soni, M.K., Bansal, D. (2019) Study of structural complexity of optimal order digital filters for de-noising ECG signal. International Journal of Biomedical Engineering and Technology, 29 (2), pp. 101-133.

365. Dulf, E.-H., Berciu, A.-G., Munteanu, R.A., Kovacs, L. (2021) Advantages of Prefilters in Stroke Diagnosis from EEG Signals. 2021 9th E-Health and Bioengineering Conference, EHB 2021.

[C.9]. Panov, G., A. Popov, **G. Mihov** (2016). [A SAR ADC with current steering DAC and voltage input](#). Analog Integrated Circuits and Signal Processing 89 (2), ISSN: 09251030, pp. 411-415, 2016.

366. Qureshi, W.A., Bonizzoni, E., Maloberti, F. (2017). Feasibility study of an ultra high speed current-mode SAR ADC. Proceedings - 2017 1st New Generation of CAS, NGCAS 2017, art. no. 8052272, pp. 73-76.

[C.10]. **Mihov, G.** (2018). [Subtraction Procedure for Power-line Interference Removal from ECG signals with High Sampling Rate](#). Int. J. BIOautomation, 22 (2), ISSN: 1314-2321 (on-line) 1314-1902 (print), pp. 147-158, doi: 10.7546/ijba.2018.22.2.147-158.

367. Du, D. Experimental study on neural feedback in embedded system teaching processing based on ERP signal analysis (2019) International Journal of Emerging Technologies in Learning, 14 (12), pp. 109-120.

368. Liu, Y., Jiang, C. Recognition of Shooter's Emotions under Stress Based on Affective Computing (2019) IEEE Access, 7, art. no. 8712452, pp. 62338-62343.

369. Rizwan, A., Zoha, A., Mabrouk, I.B., Sabbour, H.M., Al-Sumaiti, A.S., Alomainy, A., Imran, M.A., Abbasi, Q.H. A Review on the State of the Art in Atrial Fibrillation Detection Enabled by Machine Learning (2021) IEEE Reviews in Biomedical Engineering, 14, art. no. 9016113, pp. 219-239.

370. Rehman, I.U., Raza, H., Razzaq, N., Zaidi, T. (2021) Parallel Distributed Framework for State Space Adaptive Filter for Removal of PLI from Cardiac Signals. International Journal Bioautomation, 25 (3), pp. 249-270.

371. Dotsinsky, I. (2021) An Approach to Successful Power-line Interference Suppression in ECG Signals. International Journal Bioautomation, 26 (1), pp. 83-92.

372. Singh, R.S., Gelmecha, D.J., Mishra, S., Dengia, G., Sinha, D.K. (2022) A Novel Machine Learning Approach for Detection of Coronary Artery Disease Using Reduced Non-linear and Chaos Features. International Journal Bioautomation, 26 (3), pp. 273-296.

[C.28]. Георгиева, Ц., **Г. Михов**, И. Доцински. (2003) [Цифров субтракционен режекторен филтър](#). сп. „Електротехника и Електроника“, бр. 7-9, ISSN 0861-4717, София, стр. 11-18.

373. Христов, И. (2005) Премахване на смущения, разпознаване на вълни и измерване на параметри в електрокардиографски сигнали. Дисертация за „доктор на техническите науки“. БАН, СНС по Електронна и Компютърна Техника.

[Д.2]. **Mihov, G.** (1996). [Elimination of Mains Interference from the ECG in Non-Synchronized Sampling: A Theoretical Approach](#). 13-th biennial international conference BIOSIGNAL'96, Analysis of biomedical Signals and images, vol.13, ISBN 80-214-0768-9, Brno, Czech Republic, pp.189-191, 1996.

374. Христов, И. (2005) Премахване на смущения, разпознаване на вълни и измерване на параметри в електрокардиографски сигнали. Дисертация за „доктор на техническите науки“. БАН, СНС по Електронна и Компютърна Техника.

[Д.9]. **Mihov, G.**, E. Dimitrov, S. Jilov, A. Kostadinov (2002), [Composing of Different Local Area](#)

[\*Networks for Industrial Controllers on Common Physical Layer\*](#). XXXVII International Scientific Conference on Information, Communication and Energy Systems and Technologies Icest '2002, vol. 2, Nish, Yugoslavia, October 1-4, pp. 406-409.

375. Овчаров, С., П. Якимов (2005). Инструментален интерфейс за изграждане на индустриална мрежа. Електротехника и електроника Е+Е, кн. 3-4, София, стр. 10-14.

[Д.12]. Nenov, N., T. Rouzhekov, **G. Mihov**, E. Dimitrov (2003). [\*Strength Sensor for Dynamic Wheel Load Measuring of Railway Carriages\*](#). 26th International Spring Seminar on Electronics Technology. ISBN 0-7803-8002-9, High Tatras, Slovakia, May 8-11, pp.260-265, 2003.

376. Li, Y., Liu, J., Wang, K., Lin, J., Wang, C. (2011). Continuous measurement method of wheel/rail contact force based on neural network. ICTE 2011 - Proceedings of the 3rd International Conference on Transportation Engineering, 2011.

377. Li, Y.-F., Liu, J.-X., Wang, K.-Y., Lin, J.-H., Wang, C.-F. (2011). Wheel/rail force continuous exporting algorithm of instrumented rail. Jiaotong Yunshu Gongcheng Xuebao/Journal of Traffic and Transportation Engineering, 11 (4), pp. 36-40, (Open Access) 2011.

[Д.13]. Mollov, S., **G. Mihov**, R. Ivanov, S. Jilov (2003). [\*Smart Bidirectional USB-to-RS485 Bridge Converter\*](#). Sixth National Conference with International Participation ETAI'2003, Ohrid, Macedonia, pp. E42-E47.

378. Овчаров, С., П. Якимов (2005). Инструментален интерфейс за изграждане на индустриална мрежа. Електротехника и електроника Е+Е, кн. 3-4, София, стр. 10-14.

[Д.18]. Nenov, N., E. Dimitrov, **G. Mihov**, T. Rouzhekov (2005). [\*Sensor for Measuring Load on Wheels of Running Railway Vehicle\*](#). 28th International Spring Seminar on Electronics Technology. ISBN 0-7803-9324-4, Wiener Neustadt, Austria, May 19-22, pp. 24-28, 2005.

379. Li, Y.-F., Liu, J.-X., Wang, K.-Y., Lin, J.-H., Wang, C.-F. (2011): Wheel/rail force continuous exporting algorithm of instrumented rail, Jiaotong Yunshu Gongcheng Xuebao/Journal of Traffic and Transportation Engineering, 11 (4), pp. 36-40.

380. D'Adamio, P., Escalona, J., Galardi, E., Meli, E., Pugi, L., Rindi, A. (2016): Real time modelling of a railway multibody vehicle: Application and validation on a scaled railway vehicle Civil-Comp Proceedings, 110,

[Д.20]. Nenov, N., E. Dimitrov, **G. Mihov**, T. Ruzhekov (2006). [\*Electronic System of Measuring Locomotive Wheel Load and Defining Operation Necessary to Minimize Existing Differences\*](#). 29th International Spring Seminar on Electronics Technology. ISBN 1-4244-0550-5, St. Marienthal, Germany, May 10-14, pp. 219-224, 2006.

381. Han, K., Pan, D.-F. (2012). Hybrid modeling method for adjusting distribution of locomotive secondary spring loads. Zhongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Central South University (Science and Technology), 43 (1), pp. 378-383, 2012.

382. Pan, D.-F., Wang, M.-G., Zhu, Y.-N., Han, K. (2013). An optimization algorithm for locomotive secondary spring load adjustment based on artificial immune. Journal of Central South University, 2013,

383. Bao, T.-Z., Han, K., Pan, D.-F. (2018): Method for secondary spring load equalization of railway vehicles with two-stage spring suspension: Modeling and optimal regulation. Journal of Central South University, 25 (4), pp. 936-948, DOI: 10.1007/s11771-018-3795-7.

384. Xiao, Y.-Q., Pan, D.-F. The spring load adjustment method for six-axle high-power locomotives (2020) Journal of Low Frequency Noise Vibration and Active Control, 39 (3), pp. 729-748.

385. Meng, J., Meng, G., Li, D. Optimization of Wheel Weight Distribution for EMU Vehicles Based on the SA-GA Hybrid Algorithm [基于SA-GA混合算法的动车组车辆轮重分配优化] (2021) Applied Mathematics and Mechanics, 42 (4), pp. 363-372.
386. Xiao, Y., Wu, Y. (2023) The Static Adjustment Method of Secondary Suspension Load for Six-Axle Locomotives via Modified Mayfly Optimization Algorithm. IEEE Transactions on Intelligent Transportation Systems, 24 (9), pp. 9165-9174.
- [Д.21] Dimitrov, E., N. Nenov, **G. Mihov**, T. Ruzhekov (2006). [\*System of Measuring Static Load of Locomotive Wheels and Methods of Decreasing Load Differences\*](#). International Railway Symposium, Ankara-Istanbul, December 13-15, pp.916-923, 2006.
387. Bao, T.-Z., Han, K., Pan, D.-F. (2018): Method for secondary spring load equalization of railway vehicles with two-stage spring suspension: Modeling and optimal regulation. Journal of Central South University, 25 (4), pp. 936-948, DOI: 10.1007/s11771-018-3795-7.
- [Д.25]. Nenov, N., E. Dimitrov, **G. Mihov**, T. Ruzhekov, P. Piskulev (2008). [\*A Study on Sensors for Measuring Load of Railway Vehicle Wheels in Motion\*](#). 31th International Spring Seminar on Electronics Technology. ISBN 978-1-4244-3973-7, Budapest, Hungary, May 7-11, pp. 550-555, 2008.
388. Ngigi, R.W., Pislaru, C., Ball, A., Gu, F. (2012). Modern techniques for condition monitoring of railway vehicle dynamics. Journal of Physics: Conference Series, 364 (1), art. no. 012016, . DOI: 10.1088/1742-6596/364/1/012016
389. Doleček, R., Černý, O. (2013). The conception of the experimental rail vehicle. Archives of Materials Science and Engineering, Open Access, 2013.
390. Doleček, R., Černý, O. (2013). Mutual influence between measuring devices and traction drives powered by battery. Proceedings of 23rd International Conference, RADIOELEKTRONIKA 2013, art. no. 6530884, pp. 31-34. DOI: 10.1109/RadioElek.2013.6530884
391. Doleček, R., Černý, O., Lench, V. (2014). The GPS application for the control of the rail vehicle 24th International Conference Radioelektronika, RADIOELEKTRONIKA 2014 - Proceedings, art. no. 6828409, DOI: 10.1109/Radioelek.2014.6828409.
392. Doleček, R., Černý, O., Nemec, Z (2015). The sophisticated routing control of the bogie Proceedings of the Biennial Baltic Electronics Conference, BEC, 2015-November, art. no. 7320599, pp. 233-236. DOI: 10.1109/BEC.2014.7320599.
393. Hodge, V.J., O'Keefe, S., Weeks, M., Moulds, A. (2015) Wireless sensor networks for condition monitoring in the railway industry: A survey. IEEE Transactions on Intelligent Transportation Systems, 16 (3), art. no.6963375, pp. 1088-1106, DOI: 10.1109/TITS.2014.2366512.
394. Liu, D.R., Lu, Z.J., Cao, T.P., Li, T. (2017): A real-time posture monitoring method for rail vehicle bodies based on machine vision. Vehicle System Dynamics, Vol. 55 (6), pp. 853-874 DOI: 10.1080/00423114.2017.1284339.
395. Bao, T.Z., Han, K., Pan, D.F. (2018): Method for secondary spring load equalization of railway vehicles with two-stage spring suspension: Modeling and optimal regulation. Journal of Central South University, Vol. 25 (4), pp. 936-948, DOI: 10.1007/s11771-018-3795-7.
396. Chakraborty, T., Nurain, N., Tairin, S., Khan, T.A., Noor, J., Islam, M.R., Al Islam, A.B.M.A. (2019) A new network paradigm for low-cost and lightweight real-time communication between train and rail track to detect missing and faulty rail blocks. Journal of Network and Computer Applications, 131, pp. 40-54.
397. Nurain, N., Tairin, S., Khan, T.A., Ishraq, S., Islam, A.B.M.A.A. (2019) Power attack: An imminent security threat in real-time system for detecting missing rail blocks in developing countries. Computers and Security, 84, pp. 35-52.
398. Tolani, M., Sunny, Singh, R.K. (2021) Energy Efficient Beacon-Enabled IEEE 802.15.4 Guaranteed Time Slot-Based Adaptive Duty Cycle Algorithm for Wireless Sensor Network. Journal of Circuits, Systems and Computers, art. no. 2150256,

[Д.28]. Nenov, N., E. Dimitrov, V. Manoev, **G. Mihov** (2009). [\*Small Local Network for Information System of Measuring Railway Vehicle Wheel Load\*](#). IEEE 32-nd International Spring Seminar on Electronics Technology ISSE2009. ISBN 978-1-4244-4260-7, Brno, Czech Republic, May 13-17, pp. 703-706, 2009.

399. Bao, T.-Z., Han, K., Pan, D.-F. (2018) Method for secondary spring load equalization of railway vehicles with two-stage spring suspension: Modeling and optimal regulation. Journal of Central South University, 25 (4), pp. 936-948.

[Д.31]. **Mihov, G.** (2011). [\*Subtraction Procedure for Removing Powerline Interference from ECG: Dynamic threshold linearity criterion for interference suppression\*](#). The 4th International Conference on BioMedical Engineering and Informatics BMEI2011, ISBN 978-86-85195-59-4, Shanghai, China, October 15-17, 2011, pp. 865-868, 2011.

400. Boehm, A., Yu, X., Leonhardt, S., Teichmann, D. (2017). Correction of the unobtrusive ECG using system identification. Electronics (Switzerland), 6 (4), art. no. 94, .DOI: 10.3390/electronics6040094

401. Liu, J., Chen, J., Jiang, H., Jia, W., Lin, Q., Wang, Z. Activity Recognition in Wearable ECG Monitoring Aided by Accelerometer Data (2018) Proceedings - IEEE International Symposium on Circuits and Systems, 2018-May, art. no. 8351076,

402. Gan, C., Zhong, Y., Wang, Z., Wang, H., Lu, L., Liu, H., Luo, X. Optimization Design of Submodule Cascade Sequence in Biomedical Circuits (2019) 11th International Conference on Advanced Computational Intelligence, ICACI 2019, art. no. 8778460, pp. 244-249.

[Д.73]. **Mihov, G.**, I. Tashev (1996). [\*Industrial Controller for Discrete Manufacture\*](#). Fifth National Scientific Conference with International Participation ELECTRONICS ET'96, b. I, Sozopol, September, 27-29, pp.31-36.

403. Лесичков, И. (2001). Изследване на интерфейси между сензори и вградени микропроцесорни системи. Дисертация за „доктор“, София.

[Д.98]. Kostadinov, A., **G. Mihov** (2004). [\*Reconfigurability – a new feature of the hardware\*](#). IEEE International Spring Seminar on Electronics Technology 27<sup>th</sup>. ISSE2004, ISBN 0-7803-8422-9, ISSN 0861-0797, Bankya - Sofia, May 13-16, pp.457-460, 2004.

404. Jones, E., Sprinkle, J. (2011): AutoVHDL: A domain-specific modeling language for the auto-generation of VHDL core wrappers. SPLASH'11 Workshops - Compilation Proceedings of the Co-Located Workshops: DSM'11, TMC'11, AGERE'11, AOOPEs'11, NEAT'11, and VMIL'11, pp. 71-76.

[Д.99]. **Mihov, G.**, E. Dimitrov, N. Nenov (2004). [\*Temperature Errors Compensation of Force Sensor for Railway Carriages Wheel Load Measuring\*](#). IEEE International Spring Seminar on Electronics Technology 27<sup>th</sup>. ISSE 2004, ISBN 0-7803-8422-9, ISSN 0861-0797, Bankya - Sofia, May 13-16, pp.486-490, 2004.

405. Moon, B.-J., Kim, D.-H., Park, C.-K. (2009). Fuzzy model-based fault detection method of EPB system for varying temperature. Journal of Institute of Control, Robotics and Systems, 2009.

406. Moon, B.J., Jung, H.G., Lee, S.G., Kim, D.H. (2014). Parallel model based fault detection algorithm for electronic parking brake system. International Journal of Automotive Technology, 2014.

407. Gavrilencov, S.I. (2019) Method of simulating temperature effect on sensitivity of strain gauge force sensor in non-uniform temperature field. AIP Conference Proceedings, 2171, art. no. 110020.



[Д.100]. Levkov, Ch., **G. Mihov**, R. Ivanov, Ivan K. Daskalov, I. Christov, I. Dotsinsky (2004). [\*Subtraction Method for Powerline Interference Removing from ECG\*](#). The Thirteenth International Scientific and Applied Science Conference ELECTRONICS ET2004, Book 1, ISBN 954-438-445-6, Sozopol, September 22-24, pp.3-14, 2004.

408. Verulkar NM, Zope PH, Suralkar SR (2012) Filtering techniques for reduction of power line interference in electrocardiogram signals. Int. J. of Engineering, 1, (9), pp. 1-7, ISSN: 2278-0181.

[Д.120]. Badarov, D., R. Ivanov, **G. Mihov** (2016). [\*Low noise power supply for precision Analog-to-Digital Converters in battery monitoring systems\*](#). IEEE XXV International Scientific Conference ELECTRONICS ET2016, Sozopol, September 12-14, 2016, ISBN 978-1-5090-2882-5, pp. 36-39, 2016.

409. Oruganti, S., Gilhotra, Y., Pandey, N., Pandey, R. (2018) New topologies for OTRA based programmable precision half-wave and full-wave rectifiers. 2017 Recent Developments in Control, Automation and Power Engineering, RDCAPE 2017, pp. 327-331.

[Д.122]. **Mihov, G.**, D. Badarov (2017). [\*Testing of digital filters for power-line interference removal from ECG signals\*](#). IEEE XXVI International Scientific Conference ELECTRONICS ET2017, Sozopol, September 13-15, 2017, ISBN 978-1-5386-1752-6, pp. 1-6, 2017.

410. Rehman, I.U., Raza, H., Razzaq, N., Zaidi, T. (2021) Parallel Distributed Framework for State Space Adaptive Filter for Removal of PLI from Cardiac Signals. International Journal Bioautomation, 25 (3), pp. 249-270.

411. Nikolova, E., Ganev, B., Gieva, E. (2021) Wearable Intelligent Textile Suits for Telemetry Monitoring in Pediatrics. 2021 30th International Scientific Conference Electronics, ET 2021 - Proceedings,

[Д.125]. Badarov, D., **G. Mihov** (2018). [\*Stability Study of the Digital Phase Locked Loop Implemented on Xilinx FPGA\*](#). Proc. XXVII International Scientific Conference Electronics - ET2018, September 13 - 15, 2018, Sozopol, Bulgaria, ISBN: 978-1-5386-6692-0, 2018.

412. Spandana, V., Paidimarry, C.S. A Novel Design of Hilbert Huang Based All Digital Phase Locked Loop Using FPGA (2023) International Journal of Electrical and Electronic Engineering and Telecommunications, 12 (4), pp. 235-244.

[Д.127]. Badarov, D., **G. Mihov** (2018). [\*Stability Study of the Digital Phase Locked Loop Implemented on Xilinx FPGA\*](#). Proc. XXVII International Scientific Conference Electronics - ET2018, September 13 - 15, 2018, Sozopol, Bulgaria, ISBN: 978-1-5386-6692-0, 2018

413. Almasoud, A., Abbas, M., Aboelola, M., Alghaihab, A. (2022) FPGA Based DCO With Fine Control Correlation Calibration Technique. Proceedings of the International Conference on Electrical Engineering and Informatics, 2022-October, pp. 157-161.

[Д.128]. **Mihov, G.**, D. Badarov (2019). [\*Investigation of digital Procedure for Mains Frequency Measurement\*](#). Proc. XXVIII International Scientific Conference Electronics - ET2019, September 12 - 14, 2019, Sozopol, Bulgaria, ISBN: 978-1-7281-5774-9, 2019.

414. Kabakchiev, A., Evstatiev, B., Trifonov, D. Design of an Electronic System for Regeneration of Potential-Induced Degradation (PID) in PV Installations (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

415. Valov, N., Evstatiev, B., Mladenova, T., Hinkov, V., Mihailov, N. System for String Monitoring in small Experimental PV Plants (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

[Д.130]. **Mihov, G.**, D. Badarov (2020). [\*Methodology for Measuring the Frequency of Powerline Interferences\*](#). Proc. XI National Conference with International Participation "Electronica 2020", May 14 - 15, 2020, Sofia, Bulgaria, ISBN: 978-1-7281-7531-7, 2020.

416. Kabakchiev, A., Evstatiev, B., Trifonov, D. Design of an Electronic System for Regeneration of Potential-Induced Degradation (PID) in PV Installations (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

417. Valov, N., Evstatiev, B., Mladenova, T., Hinkov, V., Mihailov, N. System for String Monitoring in small Experimental PV Plants (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

[Д.132]. **Mihov, G.**, D. Badarov (2020). [\*Application of a Reduced Band-pass Filter in the Extraction of Power-line Interference from ECG Signals\*](#). Proc. XXIX International Scientific Conference Electronics - ET2020, September 16 - 18, 2020, Sozopol, Bulgaria, ISBN: 978-1-7281-7426-6, 2020.

418. Sai Bharadwaj, B., Chennupati, S.K. PLI cancellation in ECG signal using intrinsic time scale decomposition with adaptive gain control (2023) Journal of Engineering, Design and Technology, 21 (6), pp. 1725-1745.

419. Kandić, E., Pokvić, L.G. Filters for Electrocardiogram Signal Processing: A Review (2024) IFMBE Proceedings, 93, pp. 204-217.

420. Song, C.H., Kim, J.S., Kim, J.M., Pan, S. Stress Classification Using ECGs Based on a Multi-Dimensional Feature Fusion of LSTM and Xception (2024) IEEE Access, 12, pp. 19077-19086.

421. Bhanja, N., Dhara, S.K., Khampariya, P. A design of machine learning-based adaptive signal processing strategy for ECG signal analysis (2024) Multimedia Tools and Applications,

[Д.133]. Badarov, D., **G. Mihov** (2020). [\*All-Digital Phase Locked Loop with Single Reference Frequency Oscillator\*](#). Proc. XXIX International Scientific Conference Electronics - ET2020, September 16 - 18, 2020, Sozopol, Bulgaria, ISBN: 978-1-7281-7426-6, 2020.

422. Spandana, V., Paidimarry, C.S. A Novel Design of Hilbert Huang Based All Digital Phase Locked Loop Using FPGA (2023) International Journal of Electrical and Electronic Engineering and Telecommunications, 12 (4), pp. 235-244.

[Д.134]. **Mihov, G.**, D. Badarov (2021). [\*Band-stop Filter Tuning for Power-line Interference Rejection in ECG Signals\*](#). Proc. 12th National Conference with International Participation "Electronica 2021", May 27 - 28, 2021, Sofia, Bulgaria, ISBN: 978-0-7381-1372-2, 2021.

423. Manukova, A. Application of the Innovative System for e-Health Care and Prevention by the Evaluation and Analysis of ECG Signals (2024) TEM Journal, 13 (1), pp. 131-143.

424. Valov, N., Evstatiev, B., Mladenova, T., Hinkov, V., Mihailov, N. System for String Monitoring in small Experimental PV Plants (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

[Д.136]. **Mihov, G.**, D. Badarov (2021). [\*Combined Filter for Rejection of 1st and 3rd Powerline Interference Harmonic from ECG signals\*](#). Proc. XXX International Scientific Conference Electronics - ET2021, September 15 - 17, 2021, Sozopol, Bulgaria ISBN: 978-1-6654-4518-4, 2021.

425. Borodzhieva, A., Zaharieva, S. Design of Digital Phase Filters Using MATLAB (2023) 2023 18th Conference on Electrical Machines, Drives and Power Systems, ELMA 2023 - Proceedings,

426. Manukova, A. Application of the Innovative System for e-Health Care and Prevention by the Evaluation and Analysis of ECG Signals (2024) TEM Journal, 13 (1), pp. 131-143.

[Д.137]. Badarov, D., **G. Mihov**, I. Iliev (2021). [\*Development of Analog Front-end for Capacitive ECG Signal Acquisition. Proc. XXX International Scientific Conference Electronics - ET2021\*](#), September 15 - 17, 2021, Sozopol, Bulgaria, ISBN: 978-0-7381-1372-2, 2021. –

427. Iliev, I.T., Tabakov, S.D., Tomchev, N.N. An Adjustable Amplifier for Capacitive ECG Registration (2022) 2022 31st International Scientific Conference Electronics, ET 2022 - Proceedings,

428. Camós-Vidal, R., Rosell-Ferrer, J. Ultra-High Input Impedance Buffer for Dry or Capacitive Electrodes: Design and Characterization for Industry (2023) IEEE Access, 11, pp. 68316-68323. 13 (1), pp. 131-143.

[Д.139]. Badarov, D., **G. Mihov** (2022). [\*GPS Disciplined Numerically Controlled Oscillator Based on Xilinx FPGA\*](#). Proc. 13th National Conference with International Participation “Electronica 2022”, May 19 - 20, 2022, Sofia, Bulgaria, ISBN: 978-1-6654-8100-7, 2022.

429. Dorn, C., Kurin, T., Gabsteiger, J., Lurz, F., Hagelauer, A. Low-Cost, High-Stability Arbitrary Clock Source Using Software GNSS Drift Correction (2023) 4th IEEE MTT-S Latin America Microwave Conference, LAMC 2023 - Proceedings, pp. 61-64.

[Д.140]. **Mihov, G.**, D. Badarov (2022). [\*Improved Adaptive Approach for Suppression of 1<sup>st</sup> and 3<sup>th</sup> Harmonic of Mains Interference in ECG Signals\*](#). Proc. XXXI International Scientific Conference Electronics - ET2022, September 13 - 15, 2022, Sozopol, Bulgaria ISBN: 978-1-6654-9878-4, 2022.

430. Manukova, A. Application of the Innovative System for e-Health Care and Prevention by the Evaluation and Analysis of ECG Signals (2024) TEM Journal, 13 (1), pp. 131-143.

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