

Binary signals in impedance spectroscopy

Min, Mart; Ojarand, Jaan; Märtens, Olev; Paavle, Toivo; Land, Raul; Annus, Paul; Rist, Marek; Reidla, Marko; Parve, Toomas

Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Conference 2012 / p. 134-137 : ill

Chirp pulse excitation in the impedance spectroscopy of dynamic subjects - signal modelling in time and frequency domain

Min, Mart; Land, Raul; Annus, Paul; Ojarand, Jaan Lecture notes on impedance spectroscopy : measurement, modeling and applications. Vol. 1 2011 / p. 79-82 <https://www.taylorfrancis.com/chapters/edit/10.1201/b11339-17/chirp-pulse-excitation-impedance-spectroscopy-dynamic-subjects%E2%80%94signal-modelling-time-frequency-domain-min-land-annus-ojarand>

Compact multichannel device for differential impedance spectroscopy of microfluidic sensors [Online resource]

Ojarand, Jaan; Ehrminger, Robin Benjamin; Min, Mart; Koel, Ants BEC 2018 : 2018 16th Biennial Baltic Electronics Conference (BEC) : proceedings of the 16th Biennial Baltic Electronics Conference, October 8-10, 2018 2018 / 4 p.: ill
<http://doi.org/10.1109/BEC.2018.8600955>

Comparison of excitation signals and methods for a wideband bioimpedance measurement

Ojarand, Jaan; Rist, Marek; Min, Mart I2MTC 2016 : 2016 IEEE International Instrumentation and Measurement Technology Conference : May 23-26, 2016, Taipei International Convention Center, Taipei, Taiwan : proceedings 2016 / p. 1291-1296 : ill
<https://doi.org/10.1109/I2MTC.2016.7520555>

Comparison of spectrally sparse excitation signals for fast bioimpedance spectroscopy : in the context of cytometry

Ojarand, Jaan; Land, Raul; Min, Mart MeMeA 2012 IEEE International Symposium on Medical Measurements and Applications : proceedings : May 18-19, 2012, Budapest, Hungary 2012 / 5 p. : ill <https://ieeexplore.ieee.org/document/6226631>

Controllable limiter of signal amplitudes for bioimpedance measurements

Ojarand, Jaan; Min, Mart EMBEC & NBC 2017 : joint conference of the European Medical and Biological Engineering Conference (EMBEC) and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics (NBC), Tampere, Finland, June 2017 2018 / p. 920-923 : ill https://doi.org/10.1007/978-981-10-5122-7_230

Crest factor optimization of the multisine waveform for bioimpedance spectroscopy

Ojarand, Jaan; Min, Mart; Annus, Paul Physiological measurement 2014 / p. 1019-1033 : ill

Current source considerations for broadband bioimpedance spectroscopy

Annus, Paul; Min, Mart; Rist, Marek; Ojarand, Jaan; Land, Raul Lecture notes on impedance spectroscopy : measurement, modeling and applications. Vol. 2 2012 / p. 63-73

Derivation of Bioimpedance Model Data Utilizing a Compact Analyzer and Two Capacitive Electrodes : A Forearm Example

Ojarand, Jaan; Priidel, Eiko; Min, Mart IEEE Transactions on Biomedical Circuits and Systems 2022 / p. 891-901

<https://doi.org/10.1109/TBCAS.2022.3206666> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Efficient excitation signals for the fast impedance spectroscopy

Ojarand, Jaan; Min, Mart Elektronika ir elektrotehnika = Electronics and electrical engineering 2014 / p. 144-149 : ill

Enhanced optimization of the wideband excitation signal for a bioimpedance measurement

Ojarand, Jaan; Rist, Marek; Min, Mart 2015 IEEE International Instrumentation and Measurement Technology Conference (I2MTC 2015) : May 11-14, 2015, Pisa, Italy : proceedings 2015 / p. 1801-1806 : ill <http://dx.doi.org/10.1109/I2MTC.2015.7151554>

FPGA-based 16-bit 20 MHz device for the inductive measurement of electrical bio-impedance

Priidel, Eiko; Pesti, Ksenija; Min, Mart; Ojarand, Jaan; Märtens, Olev 2021 IEEE International Instrumentation and Measurement Technology Conference (I2MTC 2021), May 17-20, 2021 : proceedings 2021 / 5 p. : ill <https://doi.org/10.1109/I2MTC50364.2021.9460073>

Front-end electronics for impedimetric microfluidic devices

Ojarand, Jaan; Giannitsis, Athanasios; Min, Mart; Land, Raul Bioelectronics, Biomedical, and Bioinspired Systems V; and Nanotechnology V : 18-20 April 2011, Prague, Czech Republic 2011 / p. 80680R-1 - 80680R-15 : ill

How many frequencies to use in electrical bioimpedance measurement?

Ojarand, Jaan; Land, Raul; Min, Mart; Rist, Marek International Workshop on Impedance Spectroscopy : IWIS 2016 : September 26-28, 2016, Technische Universität Chemnitz, Germany : abstract book 2016 / p. 24-25 : ill

How many frequencies to use in electrical bioimpedance measurements

Ojarand, Jaan; Land, Raul; Min, Mart; Rist, Marek Impedance spectroscopy : advanced applications : battery research, bioimpedance, system design 2018 / p. 161–168 : ill <http://doi.org/10.1515/9783110558920-016>

Limitation of signal amplitudes in bioimpedance spectroscopy

Lühiülevaade RFID standarditest

Kuusik, Alar; Ojarand, Jaan A & A 2007 / 4, lk. 47-53 https://artiklid.elnet.ee/record=b1020909*est

Magnetic induction sensor for the respiration monitoring

Ojarand, Jaan; Pille, Siim; **Min, Mart; Land, Raul; Oleitsuk, J.** The 10th International Conference on Bioelectromagnetism : proceedings 2015 / [4] p. : ill

Modular system for spectral analysis of time-variant impedances

Rist, Marek; Reidla, Marko; Land, Raul; Parve, Toomas; Märtens, Olev; Annus, Paul; Ojarand, Jaan; Min, Mart 6th European Conference of the International Federation for Medical and Biological Engineering : MBEC 2014, 7-11 September 2014, Dubrovnik, Croatia 2015 / p. 858-861 : ill

Multichannel electrical impedance spectroscopy analyzer with microfluidic sensors

Ojarand, Jaan; Min, Mart; Koel, Ants Sensors 2019 / art. 1891, 28 p. : ill <https://doi.org/10.3390/s19081891> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Multisine and binary multifrequency waveforms in impedance spectrum measurement : a comparative study

Annus, Paul; Min, Mart; Ojarand, Jaan; Paavle, Toivo; Land, Raul; Ellervee, Peeter; Parve, Toomas 5th European Conference of the International Federation for Medical and Biological Engineering : 14-18 September 2011, Budapest, Hungary 2012 / p. 1265-1268 https://link.springer.com/chapter/10.1007/978-3-642-23508-5_327

Nonlinear chirp pulse excitation for the fast impedance spectroscopy

Ojarand, Jaan; Annus, Paul; **Land, Raul; Parve, Toomas; Min, Mart** Elektronika ir elektrotehnika = Electronics and electrical engineering 2010 / 4, p. 73-76 : ill

On the selection of excitation signals for the fast spectroscopy of electrical bioimpedance

Ojarand, Jaan; Min, Mart Journal of electrical bioimpedance 2018 / p. 133-141 : ill <https://doi.org/10.2478/joeb-2018-0018> [Journal metrics at Scopus](#) [Article at Scopus](#)

Optimisation of multisine waveform for bio-impedance spectroscopy

Ojarand, Jaan; **Annus, Paul; Min, Mart** XVth International Conference on Electrical Bio-Impedance (ICEBI) and XIVth Conference on Electrical Impedance Tomography (EIT) : 22-25 April 2013, Heilbad Heiligenstadt : abstracts 2013 / p. 79 : ill

Optimization of multisine excitation for a bioimpedance measurement device

Ojarand, Jaan; Annus, Paul; Min, Mart; Gorev, Maksim; Ellervee, Peeter I2MTC 2014 IEEE International Instrumentation and Measurement Technology Conference : Instrumentation and Measurement for Sustainable Development : Radisson Montevideo Victoria Plaza Hotel & Conference Center, May 12-15, 2014, Montevideo, Uruguay : proceedings 2014 / p. 829-832 : ill

Optimized waveforms for synchronous signal processing

Annus, Paul; Min, Mart; Ojarand, Jaan Info- ja kommunikatsioonitehnoloogia doktorikooli IKTDK kolmanda aastakonverentsi artiklite kogumik : 25.-26. aprill 2008, Voore külalistemaja 2008 / p. 51-54 : ill

Phase-increment sampling in chirp signal based impedance measurements

Märtens, Olev; Min, Mart; Land, Raul; Ojarand, Jaan; Rist, Marek Sampling Theory and Applications 2017 : 12th International Conference : Tallinn, Estonia, July 3-7 : program and abstracts 2017 / p. 65

Phase-increment sampling in chirp signal based impedance measurements [Electronic resource]

Märtens, Olev; Min, Mart; Land, Raul; Ojarand, Jaan; Rist, Marek 2017 International Conference on Sampling Theory and Applications (SampTA) : 12th International Conference : Tallinn, Estonia, July 3-7 : [abstracts] 2017 / p. 66. [USB]

Phase-increment sampling in chirp signal based impedance measurements [Online resource]

Märtens, Olev; Min, Mart; Land, Raul; Ojarand, Jaan; Rist, Marek 2017 International Conference on Sampling Theory and Applications (SampTA) : 12th International Conference : Tallinn, Estonia, July 3-7 : [proceedings] 2017 / p. 604-608 : ill <https://doi.org/10.1109/SAMPTA.2017.8024393>

Shortened square wave waveforms in synchronous signal processing

Annus, Paul; Min, Mart; Ojarand, Jaan I2MTC 2008 : IEEE International Instrumentation and Measurement Technology Conference : May 12-15, 2008, Victoria, Canada 2008 / p. 1259-1262 : ill

Short-time chirp excitations for using in wideband characterization of objects: an overview

Paavle, Toivo; Min, Mart; Ojarand, Jaan; Parve, Toomas BEC 2010 : 2010 12th Biennial Baltic Electronics Conference : proceedings of the 12th Biennial Baltic Electronics Conference : Tallinn University of Technology, October 4-6, 2010, Tallinn, Estonia 2010 / p. 253-256 : ill

Simple and efficient excitation signals for fast impedance spectroscopy

Ojarand, Jaan; **Min, Mart** Elektronika ir elektrotehnika = Electronics and electrical engineering 2013 / p. 49-52 : ill

Simple signals for system identification

Annus, Paul; Land, Raul; **Min, Mart**; Ojarand, Jaan Fourier transform - signal processing 2012 / p. 257-276 : ill

Simplified signal processing for impedance spectroscopy with spectrally sparse sequences

Annus, Paul; Land, Raul; Reidla, Marko; Ojarand, Jaan; Mughal, Yar M.; **Min, Mart** XVth International Conference on Electrical Bio-Impedance (ICEBI) and XIVth Conference on Electrical Impedance Tomography (EIT) : 22-25 April 2013, Heilbad Heiligenstadt : abstracts 2013 / p. 76

Time-frequency analysis of biological matter using short-time chirp excitation

Min, Mart; Paavle, Toivo; Ojarand, Jaan 2011 20th European Conference on Circuit Theory and Design (ECCTD) : Linköping, Sweden, August 29-31, 2011 : proceedings 2011 / p. 298-301 : ill

Variation of cardiac and respiratory waveform on human thorax in the case of inductive coupling

Metshein, Margus; Annus, Paul; Land, Raul; Krivošei, Andrei; Ojarand, Jaan; Aabloo, Alvo; **Min, Mart** EMBEC & NBC 2017 : joint conference of the European Medical and Biological Engineering Conference (EMBEC) and the Nordic-Baltic Conference on Biomedical Engineering and Medical Physics (NBC), Tampere, Finland, June 2017 2018 / p. 671-674 : ill https://doi.org/10.1007/978-981-10-5122-7_168

Wideband excitation signals for fast impedance spectroscopy of biological objects = Lairiba ergutussignaalid bioloogiliste objektide kiiretoimelise bioimpedants-spektroskoopia jaoks

Ojarand, Jaan 2012 https://www.esther.ee/record=b2896512*est

Измерительно-вычислительный комплекс Е 102

Rebane, Raul-Vello; Ojarand, Jaan; **Rüstern, Ennu**; Martin, Kaarel Тезисы докладов республиканской научно-технической конференции, посвященной Дню радио. [1], Секция: Информационно-измерительная техника 1981 / с. 13-14 : ил https://www.esther.ee/record=b1310782*est