

Binary signals in impedance spectroscopy

Min, Mart; Ojarand, Jaan; Märtsens, 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> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

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 [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Crest factor optimization of the multisine waveform for bioimpedance spectroscopy

Ojarand, Jaan; Min, Mart; Annus, Paul Physiological measurement 2014 / p. 1019-1033 : ill <https://doi.org/10.1088/0967-3334/35/6/1019> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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](#)

Detection of changes in tissue state with the aid of electromagnetic interaction = Koe seisundi muutuste detekteerimine elektromagnetilise vastastikmõju abil

Priidel, Eiko 2022 <https://doi.org/10.23658/taltech.51/2022> <https://digikogu.taltech.ee/et/Item/c0a10f6b-6b53-45d9-a031-7e5c409946d2> https://www.ester.ee/record=b5511742*est

Efficient excitation signals for the fast impedance spectroscopy

Ojarand, Jaan; Min, Mart Elektronika ir elektrotehnika = Electronics and electrical engineering 2014 / p. 144-149 : ill <https://doi.org/10.5755/j01.eee.20.5.7115> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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

Priidel, Eiko; Pesti, Ksenija; Min, Mart; Ojarand, Jaan; Märtsens, 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 <https://www.spiedigitallibrary.org/conference-proceedings-of-spie/8068/1/Front-end-electronics-for-impedimetric-microfluidic-devices/10.1117/12.886553.full>

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

Ojarand, Jaan; Rist, Marek; Min, Mart Book of abstracts : 16th International Conference on Electrical Bio-Impedance : 17th Conference on Electrical Impedance Tomography : ICEBI and EIT Stockholm, 19-23 June 2016 2016 / p. 68

Modular system for spectral analysis of time-variant impedances

Rist, Marek; Reidla, Marko; Land, Raul; Parve, Toomas; Märten, 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 https://doi.org/10.1007/978-3-319-11128-5_213 [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

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

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](#)

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 <https://doi.org/10.1109/I2MTC.2014.6860859> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

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

Märten, 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]

Märten, 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]

Märten, 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>

Recent advances in crest factor minimization of multisine

Ojarand, Jaan; Min, Mart Elektronika ir elektrotehnika = Electronics and electrical engineering 2017 / p. 59-62 : ill <https://doi.org/10.5755/j01.eie.23.2.18001> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

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 <https://doi.org/10.5755/j01.eie.19.2.3468> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Simple signals for system identification

Annus, Paul; Land, Raul; Min, Mart; Ojarand, Jaan Fourier transform - signal processing 2012 / p. 257-276 : ill https://cdn.intechopen.com/pdfs/35223/InTech-Simple_signals_for_system_identification.pdf

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 <https://ieeexplore.ieee.org/document/6043345>

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 [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

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

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