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Blaga, R., Sabadus, A., Stefu, N., Dughir, C., Paulescu, M., Badescu, V.
56606183900;57200038718;6507110311;35931993200;7801552221;7007088807;

A current perspective on the accuracy of incoming solar energy forecasting
(2019) Progress in Energy and Combustion Science, 70, pp. 119-144. Cited 5 times.

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[85055169225&doi=10.1016%2fj.pecs.2018.10.003&partnerID=40&md5=a52bddcc0e44f84dbbe203157eb92309](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-85055169225&doi=10.1016%2fj.pecs.2018.10.003&partnerID=40&md5=a52bddcc0e44f84dbbe203157eb92309)

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ABSTRACT: The state-of-the-art in the accuracy of solar resources forecasting is obtained by using results reported in 1705 accuracy tests reported in several geographic regions (North America, Europe, Asia, Australia). There is a tendency in literature to avoid reporting model performance assessments in places, or on time-horizons, where it is known that the models have low performance. Usual bias and spreading statistical indicators are useful tools but taking proper decision by managers of funding agencies and policy makers requires usage of additional error measures. Several classes of forecasting models have been compared: persistence, classical statistics, machine learning, cloud-motion tracking, numerical weather prediction and hybrid models (combining classical statistics with machine learning approach and/or exogenous inputs). Forecasting errors increase by increasing the time-horizon. Forecasting model performance depends on time-horizon and climate. Machine learning and hybrid models have the best performance for intra-hour performance in all climates. The best intra-hour forecasts are provided in all climates by machine learning and classical statistics models while the hybrid models perform well in tropical and snow climates. For day-ahead forecasts the hybrid models have very good performance in all climates. Generally, the hybrid models have the best performance. The accuracy of the forecasting models significantly increased in the last decade. The normalized MBE and RMSE have been reduced by two thirds and one third, respectively. © 2018 Elsevier Ltd

AUTHOR KEYWORDS: Forecasting accuracy; Normalized statistical indicators; Solar energy

DOCUMENT TYPE: Review

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Paulescu, M., Mares, O., Dughir, C., Paulescu, E.

7801552221;55966971900;35931993200;55325091500;

Nowcasting the output power of PV systems

(2018) E3S Web of Conferences, 61, art. no. 00010, . Cited 1 time.

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[85056693998&doi=10.1051%2fe3sconf%2f20186100010&partnerID=40&md5=63a0634da59dacea7afa18fabed22e8b](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-85056693998&doi=10.1051%2fe3sconf%2f20186100010&partnerID=40&md5=63a0634da59dacea7afa18fabed22e8b)

DOI: 10.1051/e3sconf/20186100010

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ABSTRACT: This paper presents an innovative procedure for nowcasting the energy production of PV systems. The procedure is relayed on a new version of two-state model

for forecasting solar irradiance at ground level and a simplified description of the PV system. The results of testing the proposed procedure against on field measured data are discussed. Generally, the proposed procedure demonstrates a better performance than the main competitor based on ARIMA forecasting of the clearness index. © The Authors, published by EDP Sciences, 2018.

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Paulescu, E., Iman, V., Dughir, C., Stefu, N., Paulescu, M.
55325091500;56063584800;35931993200;6507110311;7801552221;

A simplified but accurate UV index model

(2017) AIP Conference Proceedings, 1916, art. no. 040010, .

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[85038891310&doi=10.1063%2f1.5017449&partnerID=40&md5=c02954a4d14a72b5feebcc9ca23089bb](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-85038891310&doi=10.1063%2f1.5017449&partnerID=40&md5=c02954a4d14a72b5feebcc9ca23089bb)

DOI: 10.1063/1.5017449

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ABSTRACT: Since spectral measurements of UV solar irradiance are quite infrequent, this study aims to develop a parametric model for the UV solar irradiance, as basis for ultraviolet index (UVI) evaluation. The model parameterization is based on an innovative approach for embedding the biological action functions into the atmospheric transmittance. The resulting model consists of a set of algebraic equations that can be easily applied in practice for UVI estimation. Comparison with measured data shows a reasonable level of accuracy. © 2017 Author(s).

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SOURCE: Scopus

Nanu, S., Ionel, R., Dughir, C., Ionel, I.
56132331800;22979970800;35931993200;6602334631;

Automation of a prototype for cutting, sorting and bundling of SRC crops for planting purposes

(2017) Measurement: Journal of the International Measurement Confederation, 95, pp. 201-209.

[https://www2.scopus.com/inward/record.uri?eid=2-s2.0-](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84991696510&doi=10.1016%2fj.measurement.2016.10.006&partnerID=40&md5=c6764d8cbf9292f67b3574aca5378918)

[84991696510&doi=10.1016%2fj.measurement.2016.10.006&partnerID=40&md5=c6764d8cbf9292f67b3574aca5378918](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84991696510&doi=10.1016%2fj.measurement.2016.10.006&partnerID=40&md5=c6764d8cbf9292f67b3574aca5378918)

DOI: 10.1016/j.measurement.2016.10.006

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Department of Mechanical Machines and Transportation, The Faculty of Mechanics, University "Politehnica" Timișoara, Bd. Vasile Parvan, Nr. 2, Timișoara, 300223, Romania

ABSTRACT: This paper presents the design, implementation and testing of the automation component for a prototype machinery destined for cutting, sorting and bundling of harvested SRC crops for planting purposes. The device has been developed under the name Rod Picker and is the result of collaboration between six partners from four different countries. The Rod Picker project includes mechanical, automation, hydraulics and sensor measurement concepts. It operates according to conditions imposed by the beneficiaries -

Short Rotation Coppice (SRC) farm owners, agricultural machinery and energy crops species producers. Freshly harvested material is cut (obeying diameter and length restrictions), sorted and bundled into packages ready for distribution. The process is automated, requiring little intervention on behalf of the operator. The cutting accuracy and speed of execution are two features which underline the efficiency of this device when compared against manual rod processing methods. Measurement errors of under $\pm 2\%$ are obtained between what the machine indicates and the manually calculated length. Functionality tests performed over several weeks, in both laboratory and industrial conditions, confirm that this system was properly designed and implemented. Regarding the economical evaluation the conclusion is that working with this machinery can decrease overall processing costs approximately five times when compared to manual labor. © 2016
AUTHOR KEYWORDS: Automated processing; Biomass; Energy crops; Prototype cutting machinery; SRC plantations

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PUBLICATION STAGE: Final
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Dughir, C.
35931993200;

Power wire thickness influence on the multicopters flight time

(2016) 2016 12th International Symposium on Electronics and Telecommunications, ISETC 2016 - Conference Proceedings, art. no. 7781101, pp. 239-242.

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[85010465137&doi=10.1109%2fISETC.2016.7781101&partnerID=40&md5=15741b91badf88c323301724b3094665](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-85010465137&doi=10.1109%2fISETC.2016.7781101&partnerID=40&md5=15741b91badf88c323301724b3094665)

DOI: 10.1109/ISETC.2016.7781101

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ABSTRACT: a multicopter is a coaxial flight system using two or more spinning propellers. This paper is focused on how the weight and thickness of the multicopter power wires affects the flight time keeping in mind that the flight time is directly related to the weight of the multicopter. A high diameter wire can lower the energy loss but will increase the weight of the system resulting shorter flight time. The author had developed an application who analyze the multicopter configuration and give a graphical estimation of the best wire to use. © 2016 IEEE.

AUTHOR KEYWORDS: efficiency; flight time; multicopter; weight; wire thickness
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Dughir, C., Popovschi, A.M., Cojocariu, A.C., Topala, F.I., Negrutiu, M.L., Sinescu, C., De Sabata, A., Duma, V.-F.

35931993200;57189463418;56367657500;26028726900;35318155000;23028743100;6506739836;9839230700;

Complete denture base assessments using holograms: Dimensional alterations after different activation methods

(2016) Progress in Biomedical Optics and Imaging - Proceedings of SPIE, 9670, art. no. 967013, .

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[84971350896&doi=10.1117%2f12.2191886&partnerID=40&md5=303ebc70f8981dce45f1978b23714dd9](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84971350896&doi=10.1117%2f12.2191886&partnerID=40&md5=303ebc70f8981dce45f1978b23714dd9)

DOI: 10.1117/12.2191886

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ABSTRACT: Holography is a well-developed method with a large range of applications, including dentistry. This study uses holographic methods for the study of total dental prosthesis. The issue is that the transformation of wax denture base in polymethylacrylate causes dimensional alterations and retractions in the final dental constructs. These could cause the failure of the stability of the complete denture in the oral cavity. Thus, the aim of this study is to determine and to compare using holography, total prosthesis obtained using three different manufacturing methods: pressing, injection, and polymerization. Each of the three types of dentures thus produced were recorded over the previously wax complete base holographic plates. The dimensional alterations that appear after using the different activation methods were thus determined. The most significant modification was remarked in the custom press technology, while the smallest variations were detected in the injection alternative. © 2016 SPIE.

AUTHOR KEYWORDS: activation methods; dental constructs; dimensional alterations; Holographic methods; injection; optical metrology; polymerization; pressing; wax base complete dentures

DOCUMENT TYPE: Conference Paper

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Sinescu, C., Negrutiu, M.L., Manole, M., De Sabata, A., Rusu, L.-C., Stratul, S., Ducea, D., Dughir, C., Duma, V.-F.

23028743100;35318155000;55211792300;6506739836;24822741800;12759630600;23994849600;35931993200;9839230700;

Retractions of the gingival margins evaluated by holographic methods

(2015) Proceedings of SPIE - The International Society for Optical Engineering, 9508, art. no. 95080V, . Cited 2 times.

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[84943372286&doi=10.1117%2f12.2179010&partnerID=40&md5=f9ac6885e77bc1773c9705892bc8748f](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84943372286&doi=10.1117%2f12.2179010&partnerID=40&md5=f9ac6885e77bc1773c9705892bc8748f)

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ABSTRACT: The periodontal disease is one of the most common pathological states of the teeth and gums system. The issue is that its evaluation is a subjective one, i.e. it is based on the skills of the dental medical doctor. As for any clinical condition, a quantitative evaluation and monitoring in time of the retraction of the gingival margins is desired. This phenomenon was evaluated in this study with a holographic method by using a He-Ne laser with a power of 13 mW. The holographic system we have utilized-Adapted for dentistry applications-is described. Several patients were considered in a comparative study of their state of health-regarding their oral cavity. The impressions of the maxillary dental arch were taken from a patient during his/her first visit and after a period of six months. The hologram of the first model was superposed on the model cast after the second visit. The retractions of the gingival margins could be thus evaluated three-dimensionally in every point of interest. An evaluation of the retraction has thus been made. Conclusions can thus be drawn for the clinical evaluation of the health of the teeth and gums system of each patient. © COPYRIGHT SPIE. Downloading of the

abstract is permitted for personal use only.

AUTHOR KEYWORDS: Biomedical imaging; Dentistry; Gingival margins; He-Ne lasers; Holography; Optical metrology; Quantitative assessment

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Paulescu, M., Badescu, V., Dughir, C.

7801552221;7007088807;35931993200;

New procedure and field-tests to assess photovoltaic module performance

(2014) Energy, 70, pp. 49-57. Cited 15 times.

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[84901685924&doi=10.1016%2fj.energy.2014.03.085&partnerID=40&md5=a849e34d500c471fa0f0efa5c4e28903](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84901685924&doi=10.1016%2fj.energy.2014.03.085&partnerID=40&md5=a849e34d500c471fa0f0efa5c4e28903)

DOI: 10.1016/j.energy.2014.03.085

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ABSTRACT: The theoretical performance of a photovoltaic (PV) module is typically evaluated by using models based on equivalent circuits whose parameters are derived from data listed in manufacture's datasheet. Few manufactures provide detailed enough datasheets to allow using highly accurate models. In many cases simplified models have to be used due to missing information. This paper proposes a new procedure to evaluate PV modules performance. The procedure is based on the four-parameter model, which can be used with input data provided by most manufactures. Firstly, the parameters extraction in standard test conditions is discussed. Secondly, an algorithm for PV module performance estimation under real weather conditions is proposed. The procedure is validated on a commercial PV module. Estimations and field-test data are found to be in good agreement. The difference between the response time of the pyranometer (tens of seconds) and the response time of the PV module (almost instantaneous) is found to be an important source of errors. This aspect has not been previously discussed in literature with sufficient detail. The proposed procedure represents a feasible tool for calculating the performance of PV modules described by a limited set of data, operating in arbitrary weather conditions. © 2014 Elsevier Ltd.

AUTHOR KEYWORDS: Field-test; Modeling; Performance; PV module

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Ionel, I., Nanu, S., Tucu, D., Ionel, R., Dughir, C.

6602334631;56132331800;16029893400;22979970800;35931993200;

Novel solution for automated processing of harvested rods in src nurseries

(2014) Chemical Engineering Transactions, 37, pp. 853-858. Cited 1 time.

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[84899435492&doi=10.3303%2fCET1437143&partnerID=40&md5=c7dc62b17fa8a3fe5e1bfea648ddabd9](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84899435492&doi=10.3303%2fCET1437143&partnerID=40&md5=c7dc62b17fa8a3fe5e1bfea648ddabd9)

DOI: 10.3303/CET1437143

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ABSTRACT: The proposed paper describes the design of an industrial machine prototype (the ROD Picker) which will be used for rod processing in Short Rotation Coppice (SRC) farms. This device has been developed under the collaboration of six partners from four different countries: Egedal Maskinfabrik A/S - Denmark, Salix Energi Europa AB - Sweden, Lempe Gbr - Germany, TTZ Bremerhaven - Germany, TU Dresden - Germany and U.P. from Timisoara - Romania (information regarding the project is available at <http://rodpicker.eu/>). SRC farms are considered as having an increasingly important role in the agricultural development of efficient biomass production. Using fast growing trees species (willow, poplar or eucalyptus) bio-energy can be produced, thus contributing in two major directions of the EU strategy: tripling the use of renewable energy resources by 2020 and decreasing the impact of wood industry requirements on domestic forest resources. Consequently, increased attention has been focused on exploiting fast growing trees species. Processing of energy plants is currently a process in which the majority of the tasks are performed manually. This reflects on the overall performance of production. After harvesting of the wood material during winter months, cutting of plants at specific dimensions is done manually. With obvious limitations, this manual labor will be replaced by an automated process which integrates state of the art technology. The purpose is that of increasing wood biomass production efficiency. The ROD Picker prototype is innovative machinery designed for harvesting, cutting and packaging the wood material coming from SRC farms. Experimental results and extended functionality test confirm that the concept of this prototype has been properly constructed. Copyright © 2014, AIDIC Servizi S.r.l.

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Manole, M., Sinescu, C., Dughir, C., De Sabata, A., Negrutiu, M.-L., Bratu, C., Ardelean, L., Rusu, L.-C., Stratul, S., Rominu, M., Ducea, D.

55211792300;23028743100;35931993200;6506739836;35318155000;55201266900;24821496300;24822741800;12759630600;35318944300;23994849600;

Holographic methods for the evaluations of gingival margins retractions

(2012) Revista de Chimie, 63 (6), pp. 626-628. Cited 2 times.

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[84863684492&partnerID=40&md5=4430d6a4492a4a1ad9ba1c13fbaf09c5](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84863684492&partnerID=40&md5=4430d6a4492a4a1ad9ba1c13fbaf09c5)

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University of Politehnica from Timisoara, 2 Pta. Victoriei, 300006, Timisoara, Romania

ABSTRACT: The retraction of the gingival margins was evaluated by holographic methods using a He Ne laser with 1 mV. The impressions of the maxillary dental arch were taken from the patient in the first visit and then after six month. The hologram of the first model was superposed on the model cast of the second model. The retractions of the gingival margins could be evaluated three-dimensional on every point of interest.

AUTHOR KEYWORDS: Gingival margins; Holograms; Laser beam

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Jurca, T., Tulcan-Paulescu, E., Dughir, C., Lascu, M., Gravila, P., De Sabata, A., Luminosu, I., De Sabata, C., Paulescu, M.

39261725900;8517571100;35931993200;14060457300;57206401210;6506739836;6506029261;6508274428;7801552221;

Global solar irradiation modeling and measurements in Timisoara

(2011) AIP Conference Proceedings, 1387, pp. 253-258. Cited 1 time.

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[81755161305&doi=10.1063%2f1.3647083&partnerID=40&md5=0d02acc4bdfdad219645b0021e4f40d6](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-81755161305&doi=10.1063%2f1.3647083&partnerID=40&md5=0d02acc4bdfdad219645b0021e4f40d6)

DOI: 10.1063/1.3647083

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Faculty of Physics, West University of Timisoara, V. Parvan 4, 300223 Timisoara, Romania

ABSTRACT: Four global solar irradiation models are tested against data measured during 2009 at the Solar Radiation Monitoring Station, located in Timisoara, Romania, in order to recommend the most fitting for the region. The quality of the collected data is evaluated in comparison with long term averaged data provided by the NASA Surface Solar Energy service. © 2011 American Institute of Physics.

AUTHOR KEYWORDS: Measurements; Modeling; Solar irradiance; Solar irradiation

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Dughir, C.

35931993200;

Electrical power network disturbance detection and monitoring system

(2010) 2010 9th International Symposium on Electronics and Telecommunications, ISETC'10 - Conference Proceedings, art. no. 5679321, pp. 77-80. Cited 1 time.

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[79551564487&doi=10.1109%2fISETC.2010.5679321&partnerID=40&md5=d54a7d9bd06c16fe0a0a15c0104c7dff](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-79551564487&doi=10.1109%2fISETC.2010.5679321&partnerID=40&md5=d54a7d9bd06c16fe0a0a15c0104c7dff)

DOI: 10.1109/ISETC.2010.5679321

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ABSTRACT: In our days, almost all of the electrical equipment has been equipped with switching supplies which can cause disturbances in the electrical power network. In order to reduce or even eliminate this disturbances, an electrical power network monitoring is required. The disturbances presents in the system must be recorded and analyzed in order to take the right decision to eliminate them. © 2010 IEEE.

AUTHOR KEYWORDS: Disturbances; Electrical network; Power quality

DOCUMENT TYPE: Conference Paper

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SOURCE: Scopus

Paulescu, M., Dughir, C., Tulcan-Paulescu, E., Lascu, M., Gravila, P., Jurca, T.

7801552221;35931993200;8517571100;14060457300;57206401210;39261725900;

Solar radiation modeling and measurements in Timisoara, Romania: Data and model quality (2010) Environmental Engineering and Management Journal, 9 (8), pp. 1089-1095. Cited 27 times.

[https://www2.scopus.com/inward/record.uri?eid=2-s2.0-](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-78751548553&partnerID=40&md5=f3a5fc1a7d50ac4718b263082c31d78d)

[78751548553&partnerID=40&md5=f3a5fc1a7d50ac4718b263082c31d78d](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-78751548553&partnerID=40&md5=f3a5fc1a7d50ac4718b263082c31d78d)

AFFILIATIONS: West University of Timisoara, Department of Physics, 4 V. Parvan Blvd., 300223 Timisoara, Romania;

Politehnica University of Timisoara, Department of Electronics and Telecommunication, 2 V. Parvan Blvd., 300223 Timisoara, Romania

ABSTRACT: This paper introduces the first station in Romania (Eastern Europe) outfitted for systematic monitoring of solar irradiance on tilted surfaces. The resulted database is in many aspects unique for Romania, allowing for the first time to derive specific parameters like diffuse fraction or sunshine number. Also for the first time, the data collected on tilted surfaces can be used to test models reported in literature and to recommend the most fitting for the region, as is detailed in the paper.

AUTHOR KEYWORDS: Solar energy estimation; Solar irradiance monitoring; Tilted surfaces

DOCUMENT TYPE: Article

PUBLICATION STAGE: Final

SOURCE: Scopus

Belega, D., Dughir, C.

15135023800;35931993200;

Acquisition signals from electromagnetic field-meters using digital multimeters with event logging mode

(2009) 19th IMEKO World Congress 2009, 2, pp. 690-693.

<https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84871576352&partnerID=40&md5=be19b0068d4629328365c233cfd0b36d>

AFFILIATIONS: Faculty of Electronics and Telecommunications, Politehnica University of Timicoara, Timișoara, Romania

ABSTRACT: The portable digital multimeters (DMMs) frequently recommended to be used for data acquisition from electromagnetic field meters are the data logging DMMs. In this paper it is shown that it is better to use for this task the DMMs with event logging mode instead of the ones with the data logging mode. The advantages obtained using these DMMs are presented. The performed experimental results prove that the DMMs with event logging mode performed the best.

AUTHOR KEYWORDS: Data logging mode; Electromagnetic field measurement; Event logging mode

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Dughir, C., Groza, V., Vărtosu, A., Prosteian, G.

35931993200;35451404500;35932741600;14050846200;

Quality monitoring of electrical power distribution network using a low-power microcontroller

(2009) 2009 IEEE Electrical Power and Energy Conference, EPEC 2009, art. no. 5420934, . Cited 3 times.

<https://www2.scopus.com/inward/record.uri?eid=2-s2.0-77951467655&doi=10.1109%2fEPEC.2009.5420934&partnerID=40&md5=4fc3c676baaeaddcc2695a26ff620ca15>

DOI: 10.1109/EPEC.2009.5420934

AFFILIATIONS: Electronics and Telecommunications Faculty, Politehnica University of Timisoara, Romania;

University of Ottawa, Ottawa, ON, Canada;

Faculty of Management in Production and Transportation, Romania

ABSTRACT: This paper presents a system for monitoring the electrical disturbances which are present every day in electrical power distribution networks. A simple solution for detecting the disturbances using a low power microcontroller (MSP 430) was developed. The system was devised to work with 230V 50Hz electrical power networks in Europe. ©2009 IEEE.

AUTHOR KEYWORDS: Microcontrollers; Power distribution; Power systems

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Dughir, C.

35931993200;

Visual C++ complex mathematical signal generator

(2008) 16th IMEKO TC4 Int. Symp.: Exploring New Frontiers of Instrum. and Methods for Electrical and Electronic Measurements; 13th TC21 Int. Workshop on ADC Modelling and Testing - Joint Session, Proc., pp. 635-638.

<https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84883607247&partnerID=40&md5=60b366906bb06b26f3ec45fc32934715>

AFFILIATIONS: Politehnica University of Timisoara, Electronics and Telecommunications, V. Pârvan 2A, 30022, Timisoara, Romania

ABSTRACT: This paper present a complex mathematical signals generator that can generate a combination of mathematical signals at the output of a PC sound card. The user can describe complex mathematical functions to be generated. The signal generator proposed is very simple to use and don't require complex and expensive hardware to run.

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Gasparesc, G., Dughir, C.

35324501600;35931993200;

Algorithm for signal reconstruction after dynamic compression in a power quality monitoring system

(2007) 15th IMEKO Symposium on Novelties in Electrical Measurements and Instrumentation in Parallel with the 12th Workshop on ADC Modelling and Testing, 6 p.

[https://www2.scopus.com/inward/record.uri?eid=2-s2.0-](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84887356414&partnerID=40&md5=1584d1cb9f5ee858dc8e83db41260901)

[84887356414&partnerID=40&md5=1584d1cb9f5ee858dc8e83db41260901](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84887356414&partnerID=40&md5=1584d1cb9f5ee858dc8e83db41260901)

AFFILIATIONS: Politehnica University, Department of Measurements and Optical Electronics, Bd. V. Pârvan, Romania

ABSTRACT: This paper describe an adaptive algorithm for signals companding in the field of power quality monitoring systems, where the amplitude of signals disturbated with electromagnetic disturbances which affect the power supply quality can be very high, in last decades has increase the interest for ensure power quality and electromagnetic compatibility.

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Dughir, C., Ignea, A., Gasparesc, G., Vârtosu, A.

35931993200;15922529200;35324501600;35932741600;

Nonlinear voltage divider

(2007) 15th IMEKO Symposium on Novelties in Electrical Measurements and Instrumentation in Parallel with the 12th Workshop on ADC Modelling and Testing, 6 p. Cited 1 time.

[https://www2.scopus.com/inward/record.uri?eid=2-s2.0-](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84887327188&partnerID=40&md5=aba02f5e2dde01d42459e6dfcfdea7ba)

[84887327188&partnerID=40&md5=aba02f5e2dde01d42459e6dfcfdea7ba](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84887327188&partnerID=40&md5=aba02f5e2dde01d42459e6dfcfdea7ba)

AFFILIATIONS: Politehnica University of Timisoara, Electronics and Telecommunications, V. Pârvan 2A, 30022, Timisoara, Romania

ABSTRACT: This paper is focused on how to implement a nonlinear voltage divider used in the electrical power network disturbances measurement system preconditioning circuit. The voltages acquired from the electrical power network have amplitudes between 0.2 kV and 10 kV, values which are very high for an acquisition board. These amplitudes must be reduced to the values accepted by the acquisition boards: $\pm 10V$. If the signal from the electrical power network is divided with a linear voltage divider, the smaller variations around the nominal values of the voltage on the electrical power network can not be detected. This is the reason to prefer the use of a nonlinear voltage divider.

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Găspăresc, G., Dughir, C.

35324501600;35931993200;

Algorithm for signal reconstruction after dynamic compression in a power quality monitoring system

(2007) 15th IMEKO TC4 Symposium on Novelties in Electrical Measurements and Instrumentation, .

<https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84896608327&partnerID=40&md5=721fb195acfac8adbc6515c615bd7fbd>

AFFILIATIONS: Politehnica University, Department of Measurements and Optical Electronics, Bd. V. Pârvan Nr. 2, 300223 Timișoara, Romania

ABSTRACT: This paper describe an adaptive algorithm for signals companding in the field of power quality monitoring systems, where the amplitude of signals disturbed with electromagnetic disturbances which affect the power supply quality can be very high, in last decades has increase the interest for ensure power quality and electromagnetic compatibility.

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

SOURCE: Scopus

Dughir, C., Ignea, A., Gășpăresc, G., Vârtosu, A.

35931993200;15922529200;35324501600;35932741600;

Nonlinear voltage divider

(2007) 15th IMEKO TC4 Symposium on Novelties in Electrical Measurements and Instrumentation, .

[https://www2.scopus.com/inward/record.uri?eid=2-s2.0-](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84896627137&partnerID=40&md5=34adcc66446b94338bff98450edbb5d9)

[84896627137&partnerID=40&md5=34adcc66446b94338bff98450edbb5d9](https://www2.scopus.com/inward/record.uri?eid=2-s2.0-84896627137&partnerID=40&md5=34adcc66446b94338bff98450edbb5d9)

AFFILIATIONS: Politehnica University of Timisoara, Electronics and Telecommunications, V. Pârvan 2A, 30022, Timisoara, Romania

ABSTRACT: This paper is focused on how to implement a nonlinear voltage divider used in the electrical power network disturbances measurement system preconditioning circuit. The voltages acquired from the electrical power network have amplitudes between 0.2 kV and 10 kV, values which are very high for an acquisition board. These amplitudes must be reduced to the values accepted by the acquisition boards: $\pm 10V$. If the signal from the electrical power network is divided with a linear voltage divider, the smaller variations around the nominal values of the voltage on the electrical power network can not be detected. This is the reason to prefer the use of a nonlinear voltage divider.

DOCUMENT TYPE: Conference Paper

PUBLICATION STAGE: Final

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