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Sustainability of Real Estate Portfolios: A Programme Management Tool for Assessment and Optimisation

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ABSTRACT

The rising demand for a lifecycle-oriented assessment of real estate is especially recognizable in the existing buildings sector. In order to achieve a high level of comparability, sustainable buildings certification has become an issue of high importance in strategic real estate management. This article provides an introduction to portfolio certification, including the latest developments in the field proposed by the German Sustainable Building Council (DGNB¹).

KEYWORDS: sustainability, optimisation, real estate, portfolio, certification

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Charge Pump Supply and Voltage Reference Considerations

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ABSTRACT

In the sub micrometer technologies, everything that is scalable needs to be scaled down (Toumazou et al, 2002). However, for some circuits is a real battle to follow this rule. This is the usual case of the analog circuits. One of those circuits is the charge pump. The purpose of this paper is to take a closer look not only on the supply lines, but also on some other signals that influence the proper behavior of a charge pump. Also, in this paper, there will be discussed some possible improvements that should be taken into account.

KEYWORDS: charge pump supply, voltage reference

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Reactive power flow in modern low-voltage electrical installations

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ABSTRACT

The paper presents the main electrical loads that require reactive power, evaluating also its value in different operating states of the industrial installation (permanent sinusoidal or distorted). Also, the effects of reactive power flow in the networks are quantitatively estimated and accordingly a series of specific power quality indicators (e.g. power factor, crest factor, total harmonic distortion) are highlighted. Different types of solutions dedicated to reduce the level of reactive power are also suggested. The proper design of the power factor correction systems is directly correlated with the consumer power quality parameters. A case-study will round up the work, underling the major importance of the reactive power flow in modern electric installations.

KEYWORDS: reactive power, power factor, power quality, harmonics

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Automation, digitization and digitalization and their implications for manufacturing processes

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ABSTRACT

Recent developments in manufacturing raised the importance of digital elements as well as fully automated processes on a strategy, planning and shop floor level. Although the number of publications in this field increases, many scholars and practitioners lack a differentiated use of the related terms of “digitization”, “digitalization” and “automation”. In this paper we offer analyses regarding differences and communalities of these terms as well as their implications on a shop floor level. We found that the term digitalization thereby finds its use mostly in the field of social science describing the social and cultural effects of digital elements. The terms digitization and automation on the other hand are well applicable on the field of manufacturing research. Although these two concepts influence manufacturing processes differently, we conclude that they have to be analysed in integrated manners as one requires the other.

KEYWORDS: Digitization, digitalization, automation, manufacturing

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The dynamic regime of the induction motors in electrical installations – electric drive solutions

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ABSTRACT

Due to their robustness and reliability, induction (asynchronous) motors are the electric loads with the highest incidence in any industrial electric installation (it is assumed that over 70% of total energy used in those facilities is dedicated to the electric motor drives). The paper quantitatively analysis the dynamic regime of such motors, that occurs at their energizing. The waveforms features of these inrush currents are predicted mainly by solving the associated differential equations that describe the transient phenomena. The modern electric drive solutions for the asynchronous motor that provides also inrush current limitation are also presented.

KEYWORDS: asynchronous motor, inrush current, transient state

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Statistical Applications for Mobile Devices

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ABSTRACT

A short analysis of some new developments in the area of the statistical applications for mobile devices, especially for mobile phones is a focus of interest. The strong competition induced by the globalisation imposed necessary developments of the quality, fixed by ISO 9001-2015. The huge availability of the mobile devices renders necessary new software efforts for applications, especially for Android. The paper presents mainly a short overview of a few practical applications, especially for the quality assurance, starting from the acceptance sampling conditions to the statistical process control and control charts. It can be considered a prior direction for education in the field of quality.

KEYWORDS: statistical applications, quality, mobile devices

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Innovative Learning using Natural User Interfaces

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ABSTRACT

The Natural User Interfaces are gaining momentum in the framework of Human Computer Interaction. They can be used naturally, unlike the other Human Computer Interfaces, which needs special training. Natural interfaces are intuitive and similar with the manner people interact with the world. This kind of interfaces started to be used in an extended way in real life, which makes them attractive as learning instruments and qualify them to targets for design and development in engineering. The paper presents the general ideas and devices in the domain, as well as our experience in the field and some predictions for its development.

KEYWORDS: Human Computer Interfaces, Natural Users Interfaces, Kinect, Leap Motion Controller

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Statistical Bias and Consistency of Questionnaires

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ABSTRACT

The study proposes a comprehensive description of a computer aided procedure for the analysis of the consistency and reliability of questionnaires. The paper details the conditions and meaning of a questionnaire using special Cronbach's alpha index. An important index of measurement quality is the degree to which a test score is consistent. The quality of the questionnaire as a whole is assessed by estimating its internal consistency (reliability) and is statistically associated with positive organizational performance. Surveys analysis is especially valuable in improving questions which will be used again in later tests. The numerical results were obtained on different software ways of data processing and were comparable.

KEYWORDS: Cronbach's alpha, questionnaire, consistency, reliability

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SMART GRIDS – CHALLENGES, OPPORTUNITIES AND BENEFITS TOWARDS LONG TERM INNOVATION AND SUSTAINABILITY

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ABSTRACT

The original aspects of this paper consists in the presentation of different evaluations and applications of challenges, opportunities and benefits towards long term Innovation and Sustainability in smart grids projects. New opportunities will be harnessed in order to solve some specific problems of the electrical distribution networks. Focus topic is the intelligent behavior of some network elements and their optimization.

KEYWORDS: innovation, sustainability, smart grids, energy efficiency

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**Innovation and Sustainability
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Human-centred Elements in Modern Enterprises

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ABSTRACT

In the light of the current events of the world we live in today, an upgrade to the industry – ‘the economic organ of the society’ (McGregor, 1968) – is needed. The industry possesses the fundamental know-how to make proper use of the physical sciences and technology for the material benefit of mankind. The paper analyses the potential use of human-centred elements deriving from Maslow’s hierarchy of needs in modern enterprises.

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Innovative organisation management dimensions yesterday and today: a comparison between scientific management and principles of virtual Organisations

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ABSTRACT

The work of Taylor gave new impulses to the way work was organized in enterprises in the beginning of the 20th century and it still has influence in some enterprises today. The model of virtual organizations made its way into the business world shortly before the beginning of the 21st century, encouraging more companies to work together in different projects in order to achieve greater results and to help each other learn and grow at the same time. The paper analyzes these two solutions in the perspective of the business environment today.

KEYWORDS: Taylorism, virtual Organisations.

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The virtual Enterprise

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ABSTRACT

The authors chose this subject because they find The Virtual Enterprise interesting and a model of a real life business. Even though the company is virtual, the products developed are very real. Such an enterprise is the end result of a collaboration between independent companies specialized in different fields (such as marketing, production, sales, logistics).

The most important requirement of this collaboration is intensive communication between the companies. It is also necessary for the members to work like a team and trust each other for a better cooperation. Depending on the nature of the project, the structure of the enterprise as well as the combination of companies may vary.

If you would like to find more information and details about The Virtual Enterprise you can read the following article.

KEYWORDS: virtual Organizations, virtual enterprise.

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