ACADEMIC ARTICLE WRITING AND ANALYSIS

Online course for Bachelor and Master Students

TOPIC 4

KEYWORDS IN ACADEMIC ARTICLE

KEYWORDS

FUNCTION: TO DRAW THE ATTENTION OF POTENTIAL READERS AND TO LOCATE AN ARTICLE IN ELECTRONIC DATABASE

1. allow readers to judge whether or not an article contains material relevant to their interests;
2. provide readers with suitable terms to use in web-based searches to locate other materials on the same or similar topics;
3. help indexers/editors group together related materials in, say, the end-of-year issues of a particular journal or a set of conference proceedings;
4. allow editors/researchers to document changes in a subject discipline;
5. link the specific issues of concern to issues at a higher level of abstraction.

EXAMPLES OF KEYWORDS

Pathways for Germany's Low-Carbon Energy Transformation Towards 2050

Hans-Karl Bartholdsen, Anna Eidens, Konstantin Löffler, Frederik Seehaus, Felix Wejda, Thorsten Burandt, Pao-Yu Oei, Claudia Kemfert and Christian von Hirschhausen
Energies 2019, 12(15), 2988; https://doi.org/10.3390/en12152988 (registering DOI)
Received: 2 July 2019 / Revised: 19 July 2019 / Accepted: 23 July 2019 / Published: 2 August 2019

Abstract
Like many other countries, Germany has defined goals to reduce its CO2-emissions following the Paris Agreement of the 21st Conference of the Parties (COP). The first successes in decarbonizing the electricity sector were already achieved under the German Energiewende. However, further steps in this direction, also concerning the heat and transport sectors, have stalled. This paper describes three possible pathways for the transformation of the German energy system until 2050. The scenarios take into account current climate politics on a global, European, and German level and also include different demand projections, technological trends and resource prices. The model includes the sectors power, heat, and transportation and works on a Federal State level. For the analysis, the linear cost-optimizing Global Energy System Model (GENeSYS-MOD) is used to calculate the cost-efficient paths and technology mixes. We find that a reduction of CO2 of more than 80% in the less ambitious scenario can be welfare enhancing compared to a scenario without any climate mitigating policies. Even higher decarbonization rates of 95% are feasible and needed to comply with international climate targets, yet related to high effort in transforming the subsector of process heat. The different pathways depicted in this paper render chances and risks of transforming the German energy system under various external influences.

Keywords: decarbonization; energy system modeling; GENeSYS-MOD; renewables; energy policy; energy transformation; Energiewende

Article

Metallurgical Effects of Niobium and Molybdenum on Heat-Affected Zone Toughness in Low-Carbon Steel

Hardy Mohrbacher [1,2]

[1] NiobelCon bvba, 2970 Schilde, Belgium
[2] Department of Materials MTM, Leuven University (KU Leuven), 3001 Leuven, Belgium; hm@niobelcon.net; +32-3-484-5206

Received: 7 April 2019; Accepted: 29 April 2019; Published: 5 May 2019

Abstract: Modern weldable high strength steel grades are typically based on low-carbon alloy concepts using microalloying for obtaining a good strength-toughness balance. Such steel grades having a yield strength in the range of 420 to 690 MPa are very commonly used in pipelines, heavy vehicles, shipbuilding and general structural applications. Thermomechanical processing during hot rolling combined with accelerated cooling is an established means of producing such steel grades. Considering the alloying concepts, the use of niobium and molybdenum, and in selected cases boron, is very efficient to achieve high strength and good toughness. However, all targeted applications of such high strength steels involve extensive welding. Thus, heat affected zone properties are of particular importance. The present paper investigates the effects of Nb, Mo and Ti on the heat affected zone properties. Variations of the Mn and Si contents are considered as well. Additionally, the influence of post-weld heat treatment in the coarse-grained heat-affected zone (HAZ) is considered. In this approach, HAZ subzones were generated using laboratory weld cycle simulations in combination with systematic variation of alloying elements to scrutinize and interpret their specific effects. The results indicate that Mo and Nb, when alloyed in the typical range, provide excellent HAZ toughness and guarantee sufficiently low ductile-to-brittle transition temperature. An alloy combination of Nb, Mo and Ti improves performance under hot deformation conditions and toughness after post-weld heat treatment.

Keywords: welding simulation; heat-affected zone; post-weld heat treatment; high-strength steel; microalloying; solubility; precipitation; solute drag; abnormal grain coarsening; hot ductility

Web Operating Systems

Ananya Tripathi

Amity School of Engineering and Technology, Amity University, Noida, India
Email: tripathi_ananya90@yahoo.com

Received 5 April 2014; revised 10 May 2014; accepted 12 June 2014

Abstract

One of the upcoming topics that have rapidly gained popularity these days in the area of operating system is a Web or Online Operating System. The implementation of this technology is based on the Internet and distributed computing. The objective of this technology is to deliver the full benefit of the World Wide Web. Online Operating Systems include mechanisms for persistent storage, remote process execution, client management, authentication and security. This paper presents an overview of a typical Online OS. It describes its services provided, the underlying technologies exploited, advantages of using it and some of its practical applications. Additionally, the paper discusses some of the issues and concerns surrounding the implementation and design of an Online OS.

Keywords

Web OS, Online OS, Distributed Computing Systems

Case Study on Improving Quality Management of W Company's New Product Development Project*

Jiangping Wan[1,2], Ming Zeng[1]
[1]School of Business Administration, South China University of Technology, Guangzhou, China
[2]Institute of Emerging Industrialization Development, South China University of Technology, Guangzhou, China
Email: scutbmwjp@126.com, zm656690@qq.com

Received April 23, 2013; revised May 23, 2013; accepted June 1, 2013

ABSTRACT

Case study on improving quality management of W company's new product development project includes the analysis of the current situation within the quality management of W company's new product development project (current situation and identify existing problems), improvement study (analysis the cause of existing problems and design the improvement scheme) and implementation. Through monitoring the implementation process, we have an evaluation analysis for the implementation results. The purpose of this study is to improve quality management of new product development project.

Keywords: New Product Development; Quality Management; Quality Improvement; Analytic Hierarchy Process; Cause; Effect Diagram; Case Study

Technology Acceptance and User-Centred Design of Assistive Exoskeletons for Older Adults: A Commentary

Linda Shore [1], Valerie Power [1], Adam de Eyto [1] and Leonard W. O'Sullivan [1,2,*]

[1] School of Design, University of Limerick, V94 T9PX Limerick, Ireland; Linda.shore@ul.ie (L.S.); Valerie.power@ul.ie (V.P.); Adam.deeyto@ul.ie (A.d.E.)
[2] Health Research Institute & School of Design, University of Limerick, V94 T9PX Limerick, Ireland
* Correspondence: Leonard.osullivan@ul.ie; Tel.: +353-61-234249

Received: 5 September 2017; Accepted: 27 December 2017; Published: 3 January 2018

Abstract: Assistive robots are emerging as technologies that enable older adults to perform activities of daily living with autonomy. Exoskeletons are a subset of assistive robots that can support mobility. Perceptions and acceptance of these technologies require understanding in a user-centred design context to ensure optimum experience and adoption by as broad a spectrum of older adults as possible. The adoption and use of assistive robots for activities of daily living (ADL) by older adults is poorly understood. Older adult acceptance of technology is affected by numerous factors, such as perceptions and stigma associated with dependency and ageing. Assistive technology (AT) models provide theoretical frameworks that inform decision-making in relation to assistive devices for people with disabilities. However, technology acceptance models (TAMs) are theoretical explanations of factors that influence why users adopt some technologies and not others. Recent models have emerged specifically describing technology acceptance by older adults. In the context of exoskeleton design, these models could influence design approaches. This article will discuss a selection of TAMs, displaying a chronology that highlights their evolution, and two prioritised TAMs—Almere and the senior technology acceptance model (STAM)—that merit consideration when attempting to understand acceptance and use of assistive robots by older adults.

Keywords: assistive robots; technology acceptance; mobility assistance; user-centred design

Simulation Analysis of Car Front Collision Based on LS-DYNA and Hyper Works

Chunke Liu, Xinping Song*, Jiao Wang

College of Automotive Engineering, Shanghai University of Engineering Science, Shanghai, China
Email: lck6200@163.com, *wxty777@163.com

Received 21 July 2014; revised 15 August 2014; accepted 8 September 2014

Abstract

Based on the basic principle of vehicle crash analysis using the finite element method, a car finite element model was built by using Hypermesh software. To simulate the front collision test of the car, the LS-DYNA software is adopted to calculate the deformation of the car and the acceleration time history curves during the crashing process; the anti-impact capability of the car is evaluated from this simulation. The results demonstrate that the improvement of local structure can promote the crashworthiness of the car, but the further improvement needs a major change of the car structure.

Keywords

Frontal Collision, Simulation Analysis, LS-DYNA, Hyper Works

TIPS FOR SELECTING KEY WORDS

Collect the key words from the following categories:

- ✔ Discipline (materials science, economics, computer science, management etc.)
- ✔ Method (analysis, experiment, review, case study etc)
- ✔ Data source (students, adults, drivers, robots, etc)
- ✔ Location (country, town, institution, company)
- ✔ Topic

WAYS TO PRODUCE EFFECTIVE KEY WORDS

- ✔ Use simple, specific noun clauses. (Ex. variance estimation, not estimate of variance).
- ✔ Avoid terms that are too common.
- ✔ Do not repeat key words from the title.
- ✔ Avoid unnecessary prepositions, especially in and of. (Ex. data quality instead of quality of data.
- ✔ Avoid acronyms.
- ✔ Spell out Greek letters and avoid mathematical symbols.
- ✔ Include only the names of people if they are part of an established terminology (Ex. Newton law).
- ✔ Include mathematical or computer techniques.
- ✔ Include alternative or inclusive terminology (Ex. educational administration/educational management).
- ✔ Note areas of applications.

TASKS FOR INDIVIDUAL WORK

- Read the key words in the article from your field of study that you have found after the first lecture
- Define the ways and categories to produce these key words revising the current lecture material
- Find an articles from a different field of study and analyze the key words in it
- Do the tasks on the online platform

THANKS
FOR
YOUR ATTENTION