Abstracts

Selection of the best time to employ value engineering in civil engineering projects

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Considering the relative prevalence of the concept of value engineering and basic acquaintance of decision making bodies with this technique, paying due attention to its practical details becomes crucially important. Records of applying novel concepts in our country, in recent years, have alerted us about the adoption and application of such concepts. In other words, in several cases, management as well as engineering techniques newly introduced to our engineering communities either have not advanced beyond introductory levels or have turned into booming commercial goods owing to entrance of inexperts in various fields. In best cases, even though such methods have been applied in practice, expected results have not been obtained depending on the instance and/or time of application. This has created an inappropriate image of the new techniques in the mind of minor/major decision makers.

Thus, to ensure the success of value engineering which is a well- structured creative technique for analyzing the functions of products, services, and systems, aiming at achieving expected functions at the lowest cost throughout service life, the time of effectiveness and basic principles of its application must precisely be determined.

A study on control methods for locomotion of biped robots

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Because of the importance of design and implementation of control models of biped locomotion in robotics, biology, medicine, movement analysis and animation fields, many studies have been conducted on the control of locomotion. The main concerns in these studies are the robustness and stability of the gait, the achievement of a successful gait in unknown environment, and other common control engineering objectives. This paper provides a brief survey on three disparate methods with different approaches to the design of the control of locomotion, which are also implemented on various biped robots. The mentioned methods are Zero Moment Point, Virtual Model Control and Central Pattern Generators which are taken to the comparison about the noted concerns. Consequently, the last method, a bio-inspired one, is described in more details, and the results of the implementation on a virtual environment are depicted. The idea behind the biological plausibility and inspiration, and the simulation results reinforce the postulation that the Central Pattern Generators can result in a kind of biped locomotion that is stable, robust and very close to the adept human gait.

Risk identification for railway construction/development projects

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The paper addresses typical risks inherent to railway construction/development projects to enhance planning and management of railway projects. The method for identification of risks employed in this paper is based on PMBOK which tends to be more stringent as compared with other standards for project management.