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The Economic Impact of COVID 19 Pandemic in India

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Abstract

The COVID 19 disease has affected the entire globe and even developed countries have been brought to their knees while dealing with the deadly disease. The pandemic has not only affected the health status of the global citizens but also dented the economy of all the countries. Already, the entire world was witnessing and grappling with the slowing down of their economies along with highest unemployment rate and this crisis comes up which aggravates the entire situation. Suddenly life becomes more important than any other material good. India has also not been left untouched with this problem and now ranks in the first five countries in terms of affected persons. The timely lockdown may have saved valuable lives of our citizens but the economy which was already reeling under slowdown has been hit hard. As per the UN report India will be one of the worst affected economies across the world due to COVID 19 with an estimated negative trade impact of more than USD 350 million. The pandemic has affected all aspects of Indian economy including the primary, secondary and the tertiary sector. It had a negative impact on people's income, employment rate, MSMEs, informal sector, tax collection, stock market trading etc. However, there are certain silver linings also like growth of retail sector, the emphasis on digital and internet transactions, online education, more demand for digital content, the growth in chemical and pharmaceutical industries etc. The Government of India and the state governments very proactively initiated a number of measures to mitigate the effect of this pandemic, however with some success. The article tries to study the impact of the disease on various sectors of Indian economy and suggests measures to improve the situation.

Key words: COVID 19, corona, impact, economy, agriculture, manufacturing, services, income, employment

Design of Flexible Pavement: A MATLAB Program as per Guidelines of IRC: 37-2018

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Abstract

Roads are the connecting networks to allow the movement of people and goods from one place to the other. Therefore pavements are required for the smooth, safe and systematic passage of traffic. In India, design of flexible pavements is done as per the guidelines of Indian Road Congress code IRC: 37-2018. Since accuracy and precision is required in the design stage to give a long lasting pavement section, so any assumptions and guidelines should not be neglected while designing a flexible pavement. To avoid the possibility of human error and to make the designing process less time consuming, an application has been developed using MATLAB app designer. The paper concluded that the results presented by the application were more precise than the calculation done manually.

Keywords: Flexible Pavement, Low volume roads, MATLAB, IRC: 37-2018

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Training Executives of the Companies by Specific Professional Higher Education Institutions Established by Various Ministries of Government of India

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Abstract

Many liberal arts and science universities could not develop engineering/field-specific graduates to meet the acute needs of various fast-developing industries and branches like agriculture, veterinary, health, law, space, product design, food processing, etc. Various Ministries of Government of India established many Industry Specific Institutions (ISI) to develop needed human and knowledge capital in various parts of the country. Many of these institutions are offering development programs from short-term courses to doctoral programs, undertake consultancy works, and conduct multidisciplinary research programs. Besides these, the ISIs established many satellite institutes near the industrial hubs, and various parts of the country and created links with the outstanding global institutes for exchanging the students and faculty members. These ISIs are governed by the dedicated Governing Council members. Many of them are affiliated with regional technical universities. It is suggested to offer deemed university status for them so that they can grow at a faster rate to serve the industries through outstanding human capital and undertaking industry-specific consultancy projects. They need to develop outstanding growth models to reach excellence. The New Educational Policy 2020 should facilitate their growth. Further, they are to be supported by the Public-Private-Partnerships of the user companies.

Keywords: Industry Specific Institutions (ISI), Growth, and Accomplishments, Industry Specific Development Programs, Services Rendered to the Industries.

Surface Hardness Investigation of Rapid Vacuum Moulding Components

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Abstract

Commercially vacuum moulding process (V-process) is one of the established green casting techniques used in various industrial applications. One of the recent advancements in commercial V-process is rapid vacuum moulding (RVM). The RVM is combination of V-process with fused deposition modelling (FDM) technology one of the most widely used additive manufacturing (AM) techniques. This paper aims to investigate the improvement in surface hardness (SH) of RVM based components. In this study barrel finishing (BF) operation has been performed on FDM patterns at preliminary stages (i.e. before RVM) in order to increase the application domain of the process. The master patterns were prepared by using thermoplastic polymer on FDM setup. The controllable factors (media weight, vacuum pressure, cycle time, and grain size of refractory sand) of BF and RVM process were studied at three levels to find out their effects on SH of Al-6063 alloy castings. Further, statistical analysis was performed to verify the precision of RVM process.

Keywords: Hardness; rapid vacuum moulding; additive manufacturing; fused deposition modelling; statistical analysis; barrel finishing; rapid patterns

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Understanding the Nexus between Social Networking, Online Shopping and Cyber Crimes in an Indian Context

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Abstract

The twenty first century is considered as a world of information technology. People, throughout the world connect them through the internet – a worldwide electronic computer network. Though social networking sites are very important in our lives in dissemination of information, these are considered as a platform of crimes, known as cybercrime. Social networking is an encroachment to someone's privacy as well as national security which can lead to different type of illegal activities. Dishonest people take advantages of easy and free access to internet and perform any act to satisfy their needs. Various legal instruments and provision are being used by countries to curb cybercrimes. But, in the county having a very large population like India, it is difficult to control crime caused through internet. Thus, there is need to have self-control for better society. This paper is an attempt to evaluate the role of social media, trends towards shopping online and social networking on cybercrime.

Keywords: Cyber Crimes, Social media, Social Networking, cyber law.

Investigations on the Erosion Behavior of HVOF sprayed Micro and Nano-Composite Coatings on T11 Boiler Steel

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Abstract

The new research and design philosophy suggested that enhanced performance and properties without degrading original material or substrate can be attained by the amendment of surface structure. In the present research, Ni20Cr, NiCr-25%B_4C (both micro and nano-composite) coatings were deposited on SA213 GRADE T-11 grade boiler steel using HVOF thermal spraying technique. The X-ray diffraction and scanning electron microscope (SEM with energy dispersive spectroscopy) analysis have been applied to a certain different phases created after depositing coating on the surface of all the coated steels. The erosion studies were conducted in simulated coal fired boiler environment by using an erosion test rig at impingement angle of 30°. The eroded samples were analysed by using SEM/EDS and weight loss technique. The intention of this research work was to enhance the life of boiler tubes by using nano-composite and micro-composite NiCr-25%B_4C (both micro and nano-composite) coatings and conventional Ni20Cr and to compare coated specimens with uncoated SA213 GRADE T-11 grade boiler steel. Nano-composite NiCr-25%B_4C coating had shown lesser erosion rate as compared to micro-composite NiCr-25%B_4C, Ni20Cr coatings and uncoated SA213 GRADE T-11 grade boiler steel.

Keywords: Nano-composite; HVOF thermal spraying technique; Erosion rate.