

CHEMICAL ENGINEERING AND COVID19

Subjects: Others | Engineering, Biomedical

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The mankind of 2020 century are facing a tremendous challenge against Covid19 / SARS-COV-2 infection . Widespread viral stunt of spreading followed by death are encasulating the whole world including China , U.S , Brazil , Africa , U.K , USSR , Middle East and finally India . On the pandemic face of Corona Virus Chemical Engineers are having many scopes to serve the following areas of specialisations . 1. SAFETY , HEALTH , ENVIRONMENT (SHE & Public Health) 2. Molecular Simulation of newer antivirals with the help of Engineering Mathematics as well as Computation . 3. Emergency Planning including Personnel Protective Equipments (PPE) , Health Statistics Record . 4. Scope to scale-up the vaccine production 5. Global economic crunch associated with Crude oil crisis during this pandemic .

Keywords: Covid19 ; Chemical Engineering ; Biotechnology ; Molecular Modelling ; Onsite Emergency Planning ; Safety - Health - Environment (SHE) ; Lab-Scale Up of Vaccine development

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The image describes an intermixing concept of collaborating the process engineering - covid model with an attempt of newer antiviral drugs .

SHE policy : This is the guidelines to prevent Covid infection regarding Do and Don't like use of PPE & sanitisation procedure regarding WHO as well as EPA (Environment Protection Agency) guidelines^[1]. This plays a safe impact to prevent quick spreading of corona-virus .Medical instrumentation like ventilator , oxy-pulse meter , Thermal Scanner can be included in bio-medical maintaince. This types of ICU instruments are very important during severe accute respiratory syndrome (SARS-COV- 2)^[2] . Record of covid affected pateints including symptomatic ,assymptomatic and death case record to be maintained with data base management system . Statistical help may be needed^[3]. Mathematical with - molecular bonding approach are essential to explain the spreading kinetics of virus as well as the design of antiviral drug-antigen stability (Lopinavir - Ritonavir / Remdesivir / Flavipiravir)^[4] . The concept of bio-technology is essential to use sera like interferon 1-b treatment combined with anti-viral management ^[5] . The main challenge for a bio-chremoical engineer is to development of pilot plant scale up technique of under pipeline vaccine ^[6]. The economic sustainability due to crude oil crisis is another a big challenge of a chemical engineer during this pandemic phase ^[6] . The concepts of ^{[1][2][3][4][5][6]} are ine scope of a chemical engineer over an integrated developed environment .

<https://osf.io/74cfp/>

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