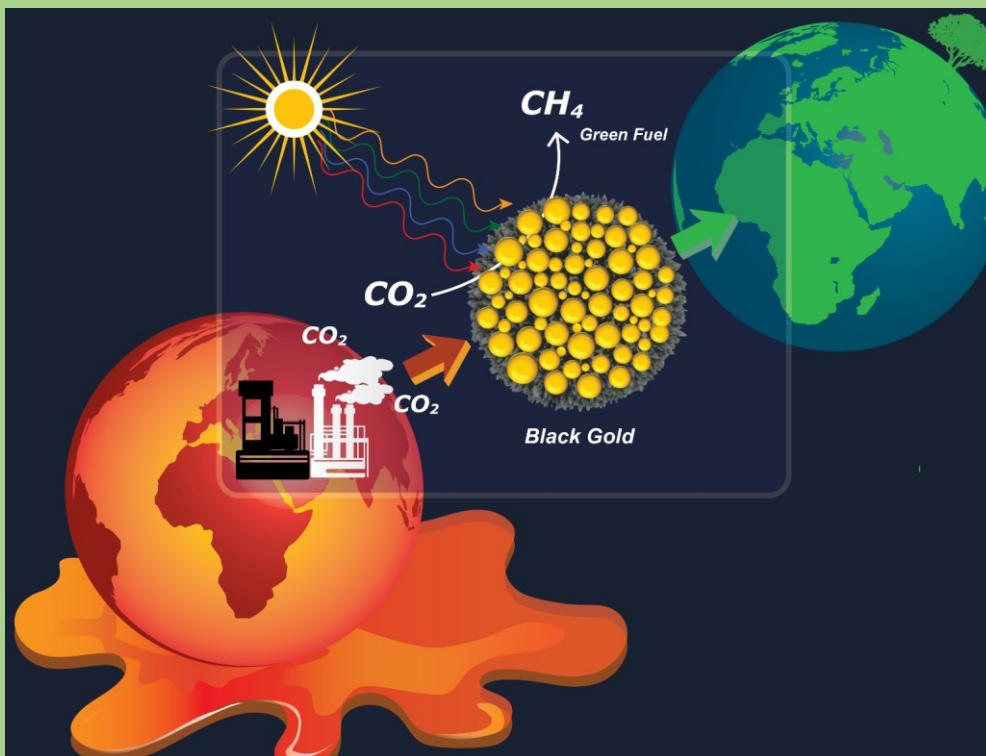


Role of Fundamental Science to Develop Carbon Dioxide Utilization Technology using Solar Energy and Green Hydrogen

Prof. Vivek Polshettiwar, TIFR, Mumbai

Friday, October 14, 2022 at 4 p.m.

YouTube Live Link: <https://youtu.be/JD3BLPfvqh0>



Climate change due to excessive carbon dioxide (CO₂) is the most serious problem mankind has ever faced. CO₂ hydrogenation with green hydrogen is one of the best processes to combat climate change and can provide a single solution to three challenging problems, i) excessive CO₂ levels, ii) the temporal mismatch between solar electricity production and demand, and iii) hydrogen gas storage. In this talk, I will discuss two of the recent fundamental discoveries for solar energy harvesting and CO₂ utilization that can yield commercially viable technologies; i) Black Gold-Nickel as an Artificial Tree and ii) Transforming CO₂ and Sea Water to Green HYDROGEN & Green CEMENT Using Magnesium Waste Scrap.

Prof. Vivek Polshettiwar started his group at TIFR in 2013 for the development of novel nanomaterials as catalysts to tackle "climate change. He received an Asian Rising Star lectureship at 15th Asian Chemical Congress (ACC), Singapore (2013), from Nobel Laureate Professor Ei-ichi Negishi. In 2015, he was admitted as a Fellow of the Royal Society of Chemistry (RSC), United Kingdom. He was awarded a Bronze medal by the Chemical Research Society of India and MRSI medal by Materials Research Society of India. In 2020, he received Young Research Awards in Nano Science & Technology from the Department of Science & Technology (DST), Gov. of India. In 2021, he was elected as a Fellow National Academy of Sciences, India (NASI). This year, Vivek received the IUPAC-CHEMRAWN VII prize for green chemistry by IUPAC and National Prize for Research on Environmental Chemistry by Prof. CNR Rao foundation and JNCASR, Bangalore.