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Energy and Materials Challenges for a Growing World: One Perspective

The growing population in the emerging economies is poised for consumption at a scale similar to the developed countries. The consumption will increase because of both the growth in numbers and the increase in living standards. In cognizance of the environmental constraints we need to be more innovative to fulfil our material and energy needs with the least footprint but a higher value than what we realized ever before. The technologies that fuelled the growth of the developed world may not provide a sustainable choice. The developing world would need to leapfrog its way ahead and provide for its diverse needs. We need new energy solutions for generation and distribution, alternative feedstock for the plethora of chemicals that we need and smart materials to cater to our infrastructure, automotive, and defence requirements. The challenge ahead is to think new at a mega scale in a variety of sectors, accept and work with the changing landscape and develop robust ways of sustaining the breakthrough technology development and deployment. This presentation shares one perspective on these aspects and identifies the key opportunities and challenges of this growing world.