

Catalysis: Connecting the Dots of Science, Technology, Economics and Society

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ABSTRACT

Customarily, we think of catalysis as a phenomenon of joining molecular phenomena from physics and chemistry to achieve a cooperative result. It plays analogous roles in the “bio”-related sciences although described by different language. It is an ‘interdisciplinary’ phenomenon. A broad pursuit of catalysis, its role and significance in society involves a journey across our institutions of learning, (academia and their compartmentalized ‘disciplines’), industry (and their financial goals), and the functions of governments (intended to provide overall beneficial guidance: policy). A serious competition between magnitudes of demand and population growth on one hand and nature’s inevitable constraints by finiteness of land area, finite natural material and accumulated energy resources or finite energy rate of supply (solar) is now becoming a recognized reality. In fact, such continuing condition may affect existence of Homo sapiens now beyond few generations. We must recognize the interdependence between elements of knowledge taught in proudly separated and organized ‘disciplinary’ fields and houses. Catalysis has recognized the importance of joining the “basics” from chemical and physical disciplines; recognition of its crucial role in biology has begun. It has become crucial for Homo sapiens’ survival to exercise nature’s unique gift to him of the neocortex to recognize and include the essential parameters of the social and behavioral disciplines to usefully interact in the catalysis of the total human operating system to avoid gradual energy starvation as well as quick destructive exothermic explosions called wars.