Realization of a low carbon society through game changing technologies

High-rate bioproduction of valuable organic compounds using synthetic sugars

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Summary :

Current bio-refinery technologies involve massive energy consumption for producing valuable substances and its production rate is low. In this study, we will try to (**A**) establish a catalytic reaction system for highly-selective synthesis of sugars in neutral aqueous solution using HCHO as feedstock, and to (**B**) realize high-rate bioproduction of 2,4-dihydroxybutyric acid (DHB), a raw material for feed additives, etc., using the chemically synthesized sugars. The synergetic combination of (**A**) catalytic chemistry and (**B**) microbiology enables to establish the innovative bio-technological science.