

**Session Title: Genetic Engineering for CO<sub>2</sub> Reduction**

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**Abstract Title: The emerging green bioprocess technology to attain a carbon-free society**

Recently, the concept of “Bioeconomy” has emerged, in which biotechnology and renewable resources are utilized to address global environmental problems while maintaining economic development altogether. RITE has developed growth-arrested bioprocess that able to achieve higher efficiency and productivity compared to the conventional fermentative processes. Using this technology, we have succeeded in producing alcohol, organic acids, and various amino acids with remarkably high yields. We are currently applying the technology in the microbial production of biofuels and aromatics. By using biomass as feedstock in our bioproduction, we aim to reduce fossil resource consumption and to support the realization of carbon-free society.