Industrial Biotechnology Group

R & D Focus:

Convert renewable resources to fuels & chemicals using microbes/enzymes as catalysts

Highlighted projects:

- Pretreatment of lignocellulose to get fermentable sugars;
- Fermentation of lignocellulose sugars to L- & D- lactic acids;
- Metabolic engineering of yeasts and bacteria for glycerol & 3-hydroxypropionic acid production;
- Metabolic engineering of yeasts for adipic acid production;
- Metabolic engineering of thermophilic bacteria for bioethanol & lactic acid production;

Selected publications:

1. Optimization of dilute acid-catalyzed hydrolysis of oil palm empty fruit bunch for high yield production of xylose. Chem. Eng. Sci., 2012, 181-182: 636-642.
2. Increase of ethanol tolerance of *Saccharomyces cerevisiae* by error-prone whole genome amplification. Biotechnol. Lett. 2011, 33(5): 1007-1011.
3. Engineering of small sized DNAs by error-prone multiply-primed rolling circle amplification. J.Mol.Catal. B: Enzymatic, 2010, 67(1-2): 92-97.
4. Conversion of waste cooking oil to biodiesel via enzymatic hydrolysis followed by chemical esterification, E*nergy & Fuels*, 2010, 24: 2016-2019;
5. Two-step lipase catalysis for biodiesel production. Biochem. Eng.J., 2010, 49(2): 207-212