

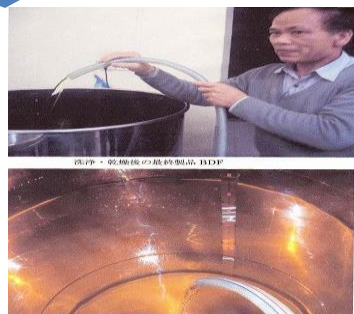
# From Upstream to Down stream

**Multi-beneficial Measure for Mitigation of Climate Change in Vietnam and Indochina Countries by Cultivation-Production-Utilization of Biomass energy**

**Cultivation at Desolated area**



**Production of high Quality BDF**



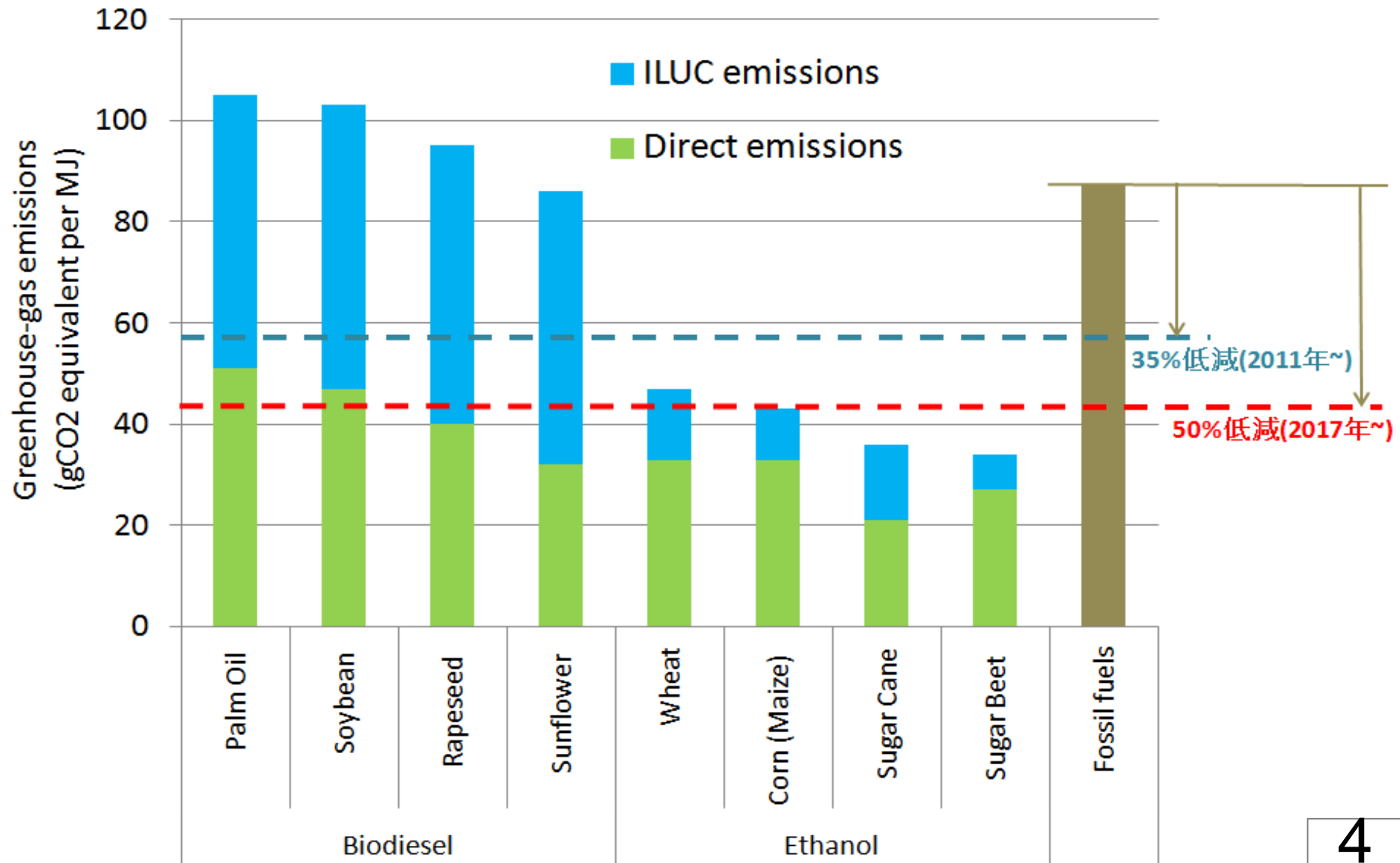
**B100 Utilization**



Int. Patent in USA, China and Vietnam

**Multi-Beneficial (Mitigation of Climate Change, Improvement of Air Pollution, Economical Green Growth)**

# BDF is not Effective for the Mitigation of Climate Change



# Coal Mining at Ha Long Bay



# Vernicia Montana in North of Vietnam(2000ha)



Lao Cai



Mon peoples



Vernicia Montana

# Cat Fish Fillet Production in An Giang(200,000t)



# Animal Fat in Hanoi (30000t/y)



# [Co-solvent method]

<before reaction>

Conventional  
Method

Co-solvent  
homogenous

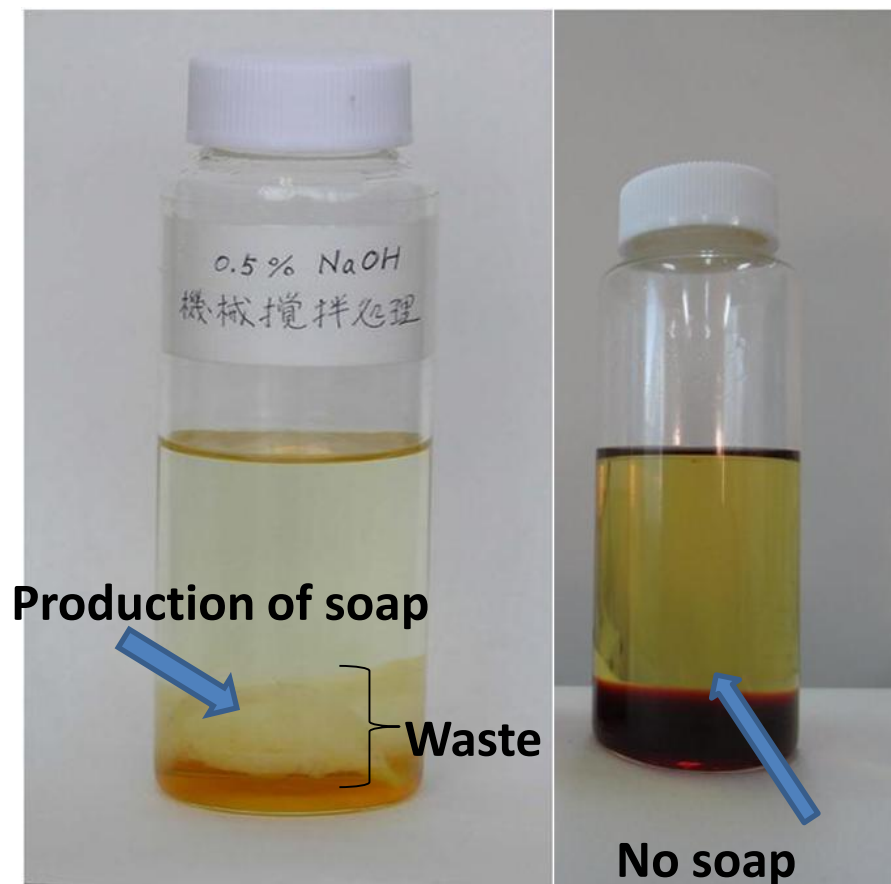
Add 10% Acetone



<After reaction>

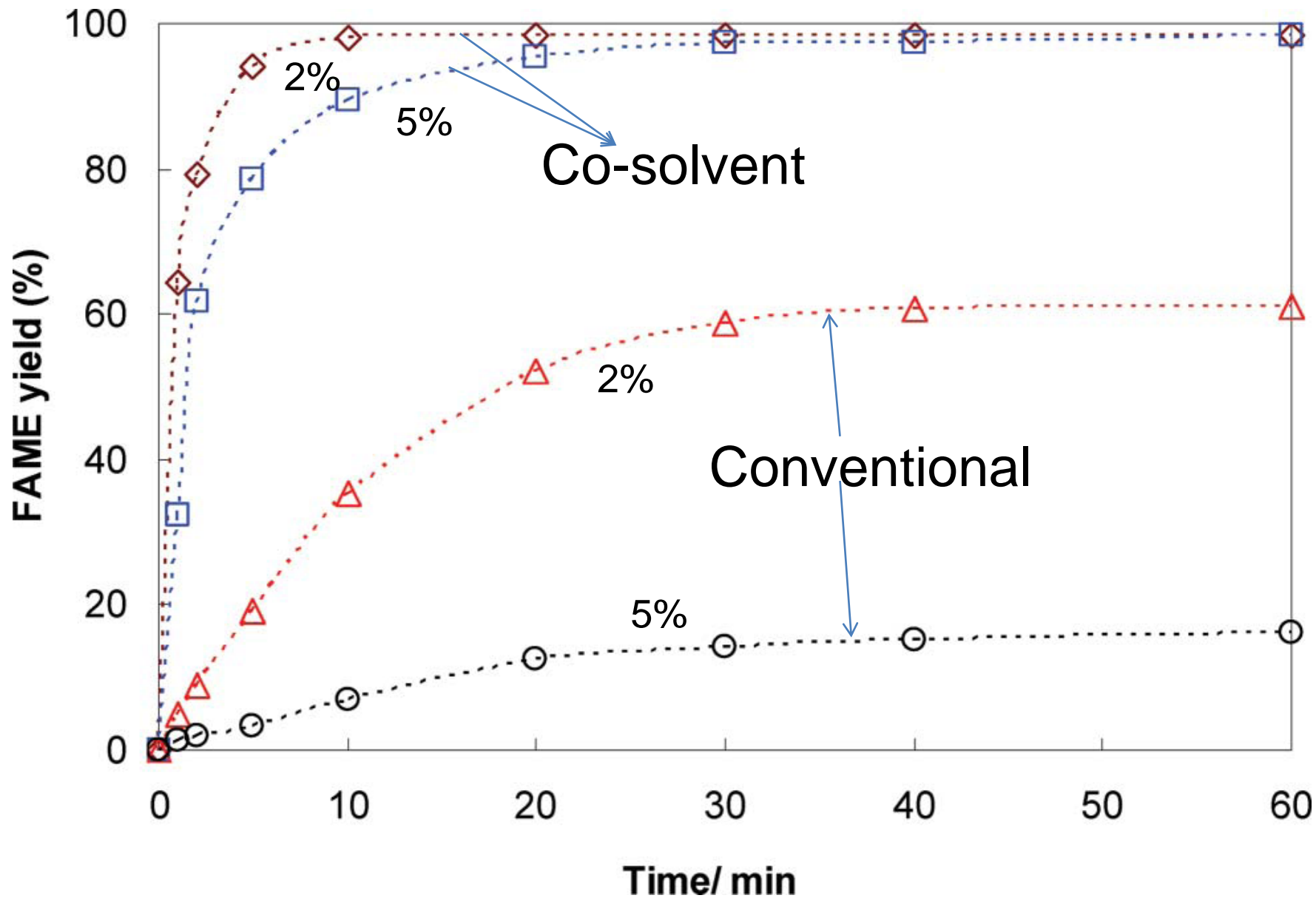
Conventional  
⇒ Excess amounts of MeOH

Co-solvent





2014/4/11



**Effect of water on BDF production rate**

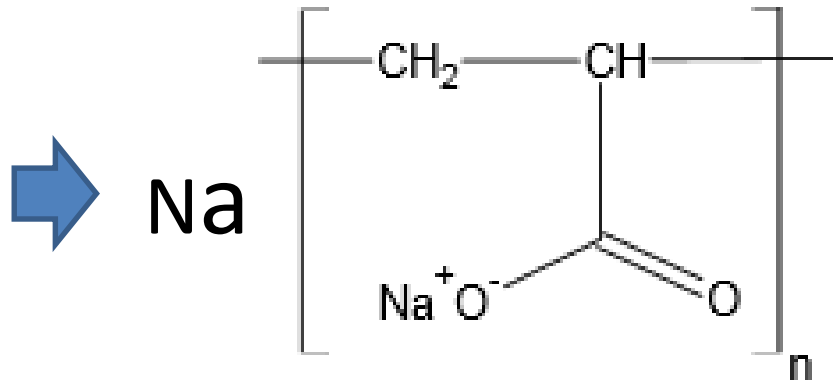
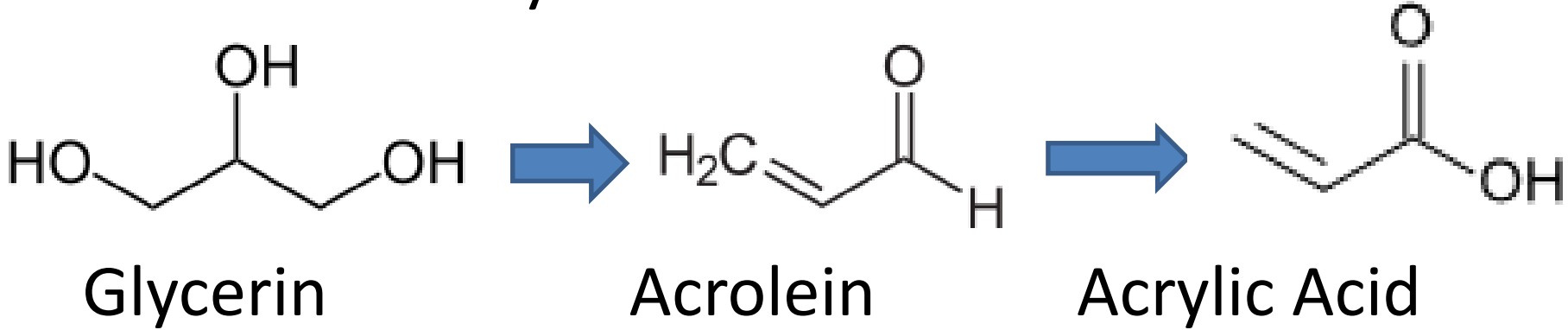






# Super Absorbent Polymer from Glycerin

Microwave catalytic Reaction



(Super water absorbent Pol.)



# Fuel Cell with Glycerin Fuel



2015/3/11

*Thank you!*