

Immobilized solvents for water removal

2nd wave project proposal



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Interested: Akzo Nobel, ECN, BTG, UTwente

First wave project:

a) Separation of n-butanol, ethylene glycol, 1,2-propane diol, 2,3-butane diol from water

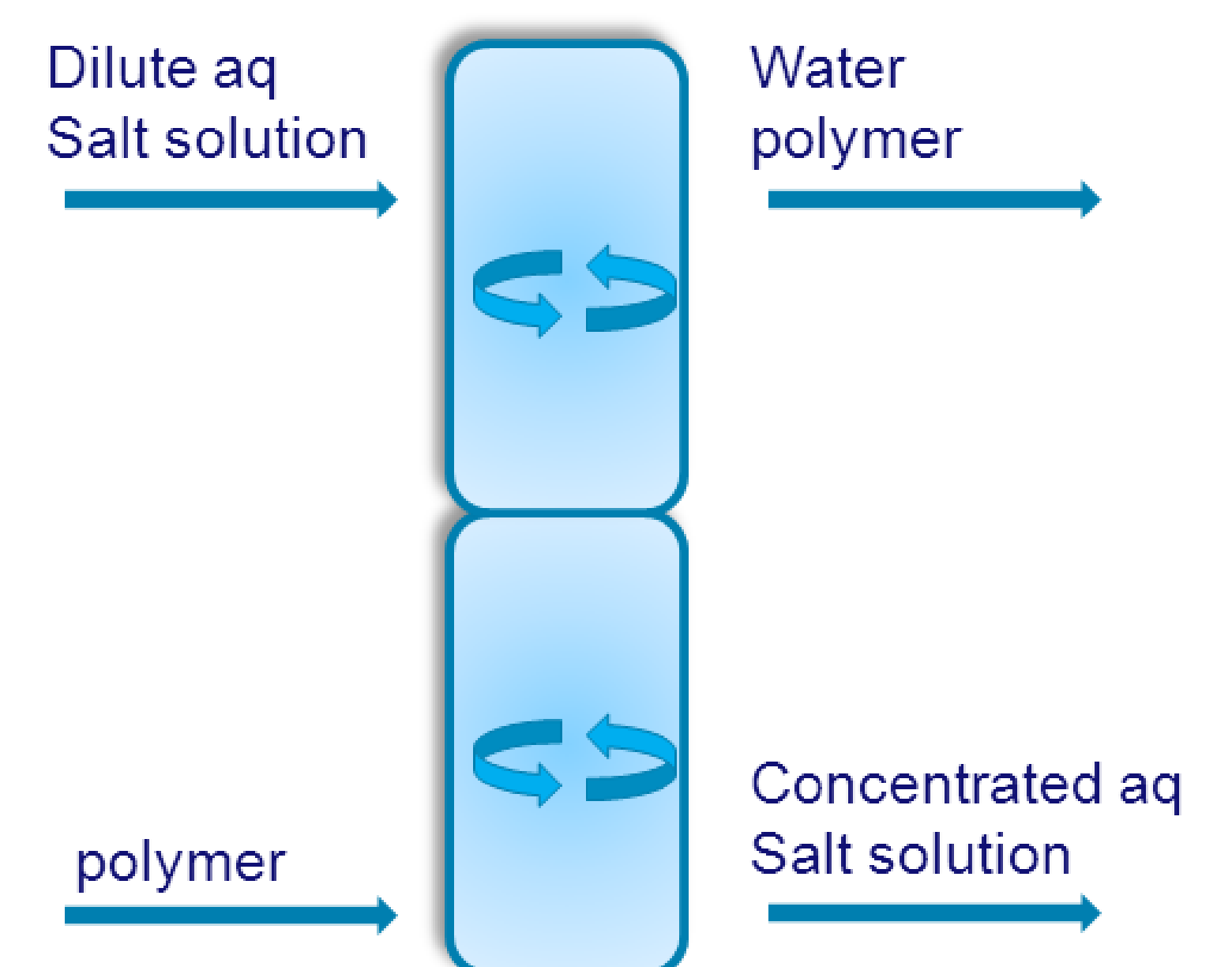
Technology: extraction with ionic liquids (ILs)

Results → very high selectivities and distribution; current status: process design and evaluation

b) Concentration of aqueous salt solutions with polymers

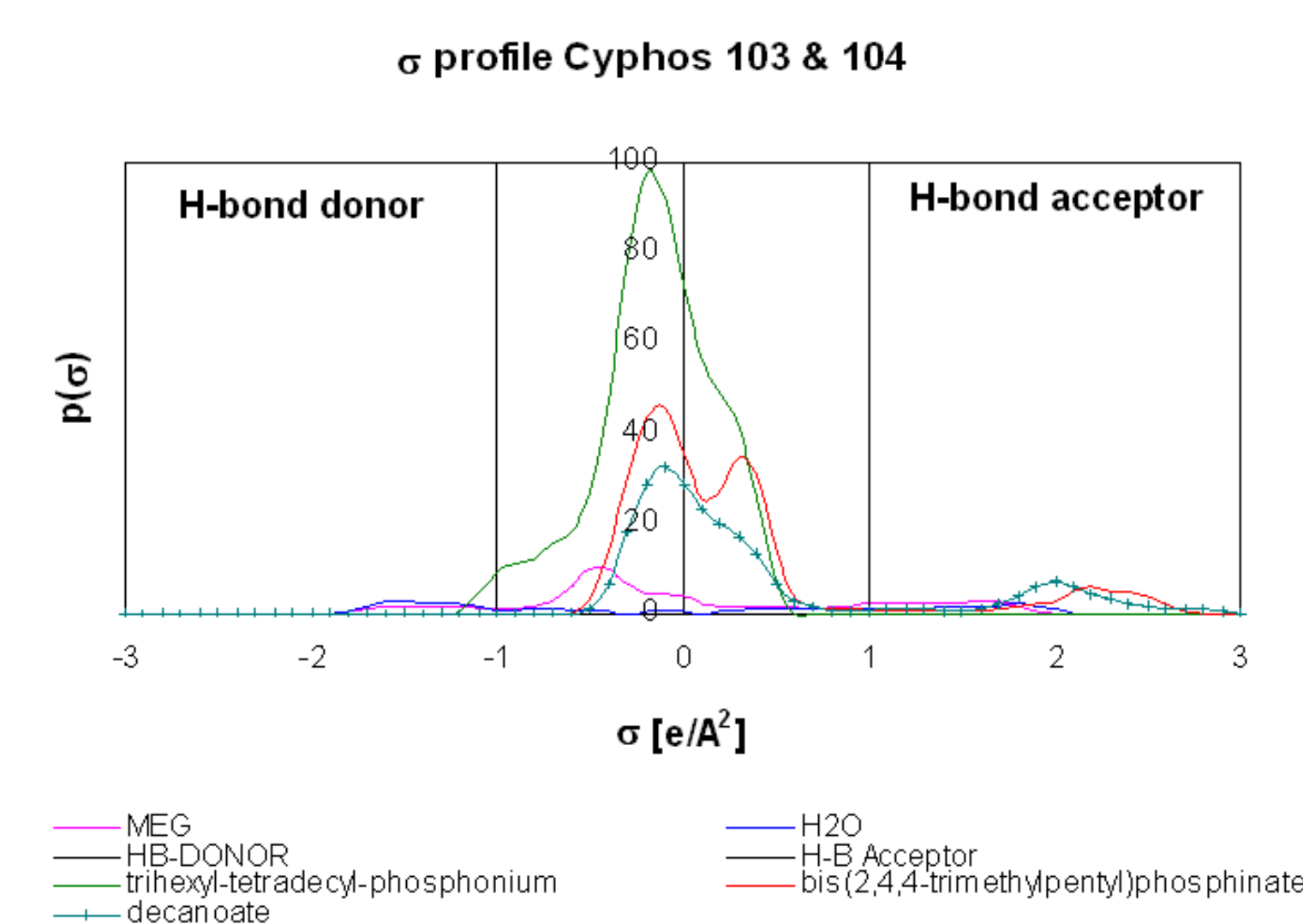
Important result: direct concentration is possible (preferential Uptake of water)

Key point of further investigation: recovery polymer



Ideas for second wave:

- 1) Extraction from aqueous solutions with Ionic Liquids:
 - expand the scope to other solutes
 - develop Cosmo-RS approach further to be able to generalize
- 2) Immobilize the polymers for easy recovery, e.g. on magnetic particles
- 3) Fractionation of aqueous stream pyrolysis oil



Status:

New partners wanted!
Broader scope of ideas for second wave?

Timing: project definition Q2 2012, start project Q1 2013