

Work Package 5: Generic knowledge collection and analysis and toolkit development

Aims of Work Package 5

So that the results of PILLS can be applied in future process development, generic lessons must be learned from the process-specific research.

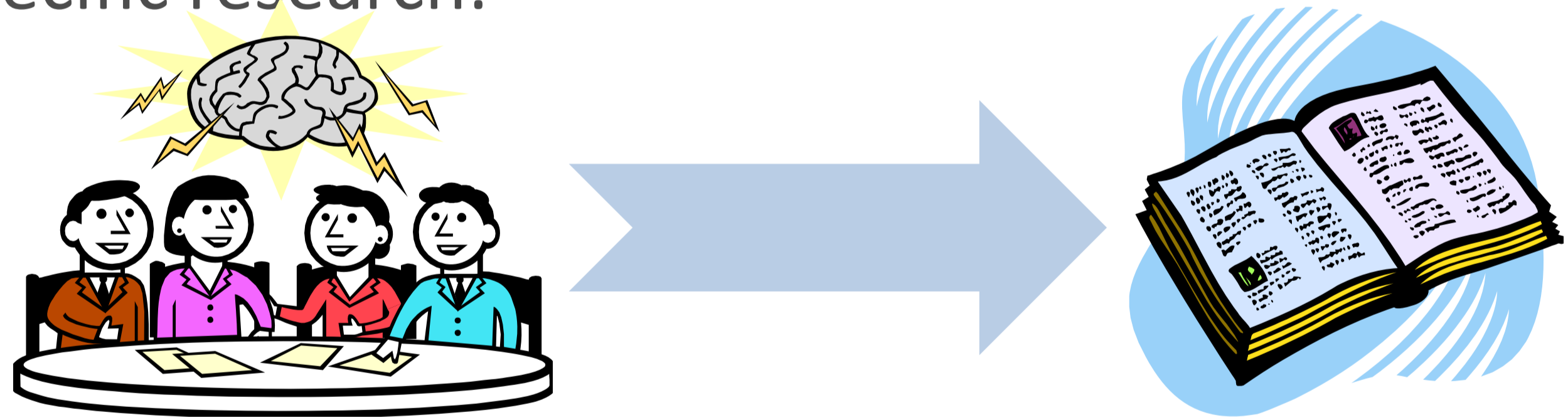
Work Package 5 aims to do this, through the following specific objectives:

1. Codify generic learning about design and development of processes involving liquid-liquid reactions.
2. Develop a systematic methodology for phase strategy selection as part of Whole Process Design.

Task 5.1

Generic Knowledge Codification

Most of the research in PILLS is work on two example processes, one from the bulk organic chemicals sector and one from the fine chemicals sector. Task 5.1 considers the learning developed in this process-specific research:



Information collected from teams working on the specific processes

Information studied to identify generic learning

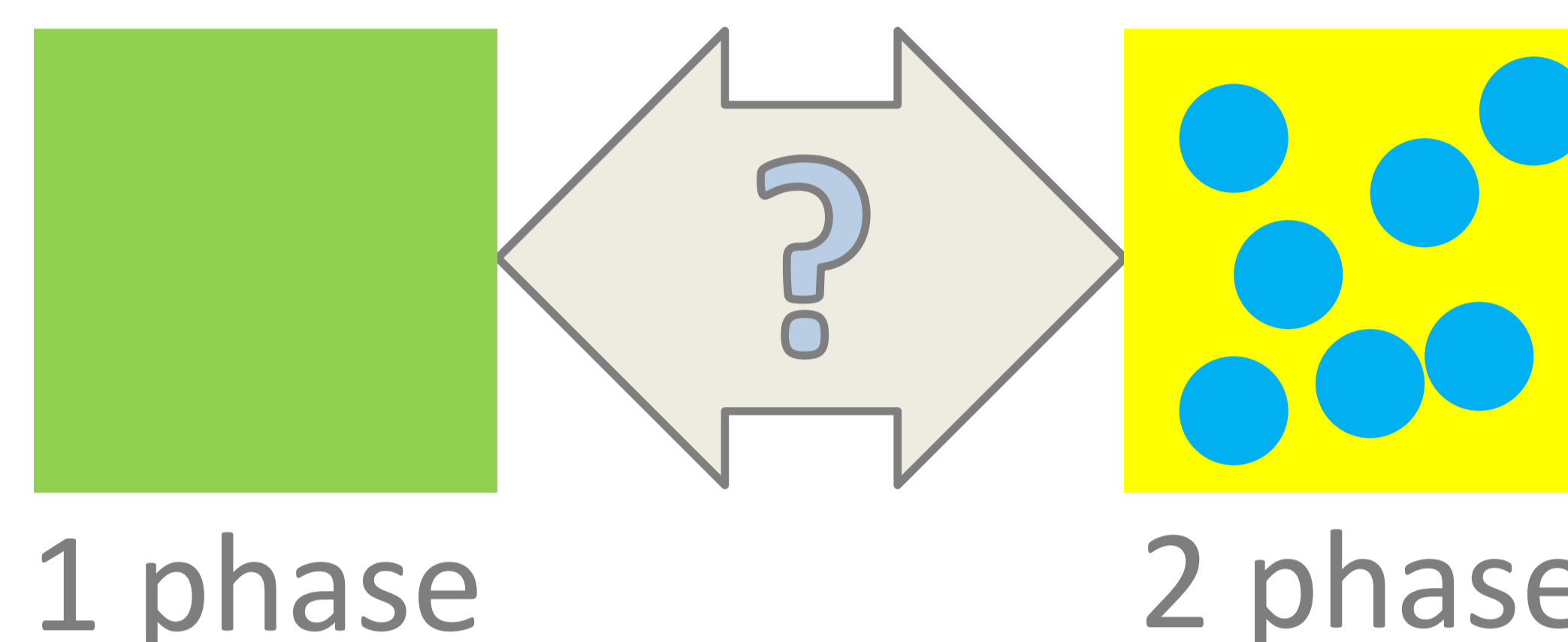
Generic learning analysed and systematised

Systematic knowledge published

Published information forms part of 'methodologies' toolbox

Task 5.2

Phase Strategy Methodology



Task 5.2 considers Whole Process Design, and particularly the issue of Phase Strategy:

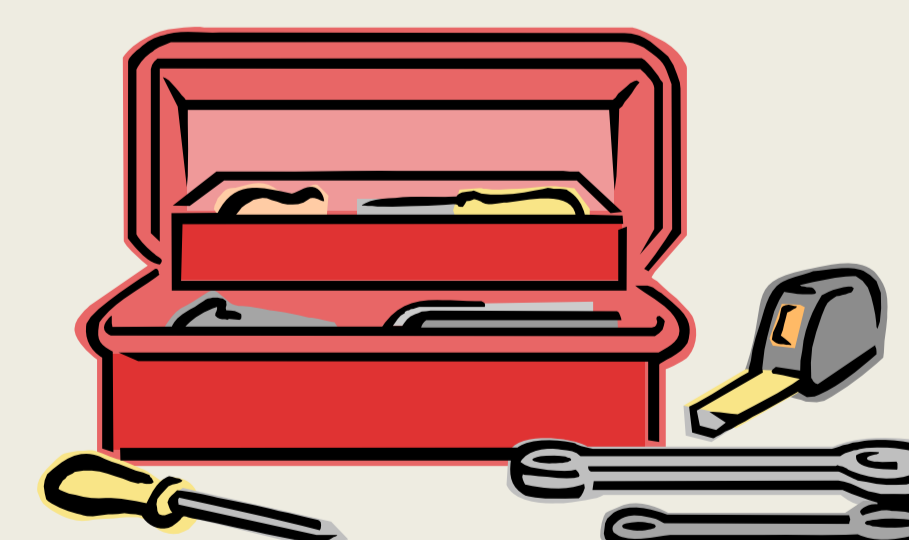
1. Can a two-liquid-phase reaction be run in a single liquid phase (e.g. by finding a suitable solvent), and would this be better?
2. Are there other feasible phase strategies, such as a vapour-phase process with a solid catalyst?
3. For single-liquid-phase processes, would there be advantages to moving to two liquid phases?

In all cases, the aim is to choose the Phase Strategy that best meets the business needs, i.e. that which results in the greatest profit for the process operator.

This will form part of the "toolbox".

Work Package 5 Outputs

The methodological learning codified by the two tasks will form a "toolbox" of techniques to help chemists and engineers develop future processes that could involve liquid-liquid two-phase reactions.



Self-paced instruction packages and supporting materials to train potential users how to use this toolbox of methodologies will be developed as part of Work Package 6.