

ELN-DIY-Meta: Creating Interoperability for ELNs

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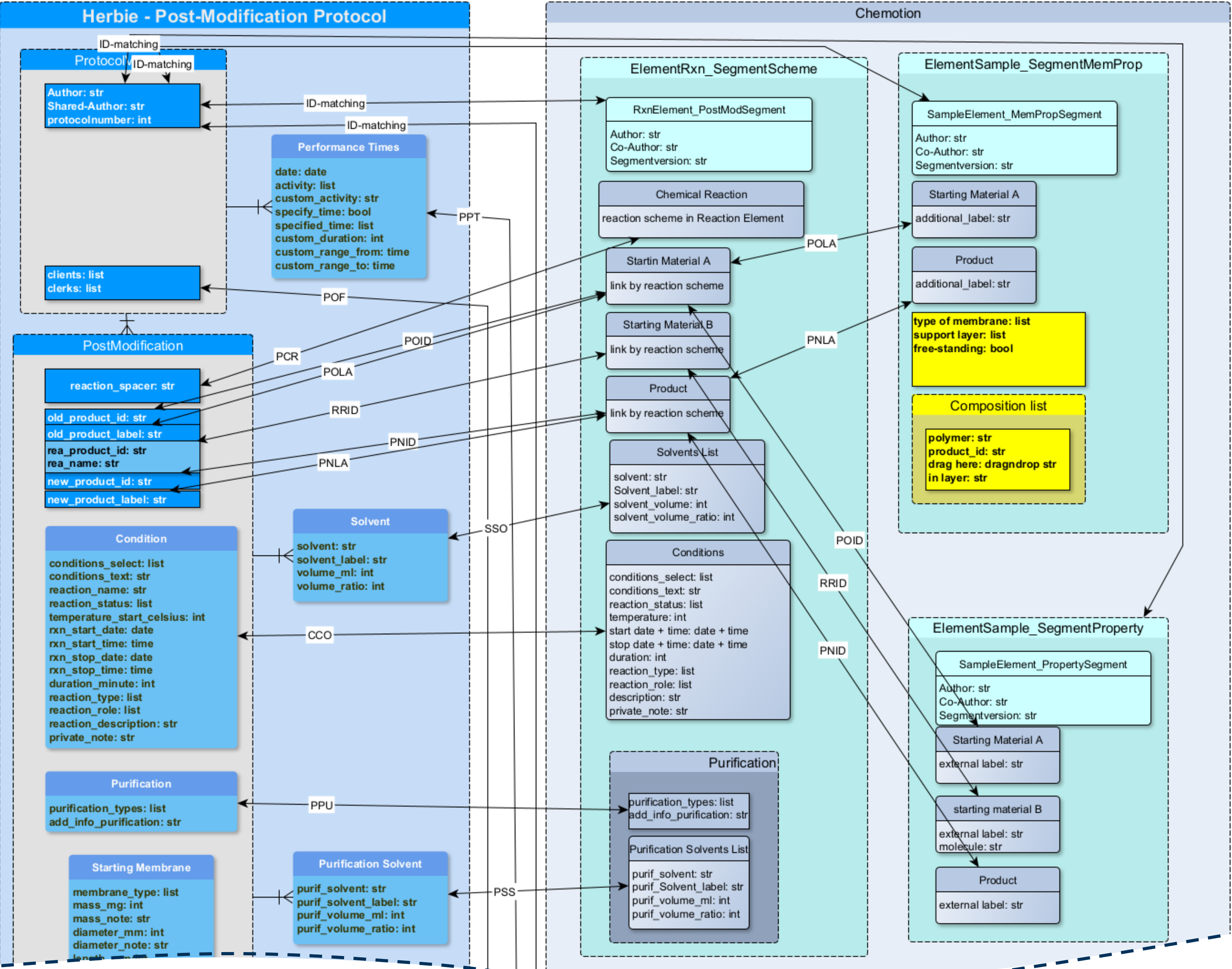
Motivation

- ELNs = key to research data management of experimental metadata
- ELNs enable documentation, tool integration and large, coherent databases in experimental science
- Interdisciplinary research combines different discipline-specific ELNs
- Interoperability between ELNs generally not available

Goal

- API-based data exchange for ELNs Herbie and Chemotion
- Multiple ELNs in one institution with high interoperability
- Synchronize all information for the use case → data entry into either ELN

Backend mapping



Step 01: Analysis

- Analyze fundamental design & strengths of ELNs → Chemotion has more restrictions in types of input fields and layout design → start here
- Classify metadata to be exchanged

Step 02: Design I

- Fundamental decision: Synchronize or create complimentary read-only fields
- Create frontend in Chemotion
- Consider mandatory metadata in Herbie

Step 03: Mapping

- Create mapping of backend of Chemotion & Herbie = Interoperability entity relationship diagram
- Define editable and information-only metadata sets

Step 04: Design II

- Implement missing types of input fields and functions in both ELNs
- Document metadata that cannot be represented in one of the ELNs due to fundamental restrictions
- Create backend & frontend in Herbie according to mapping

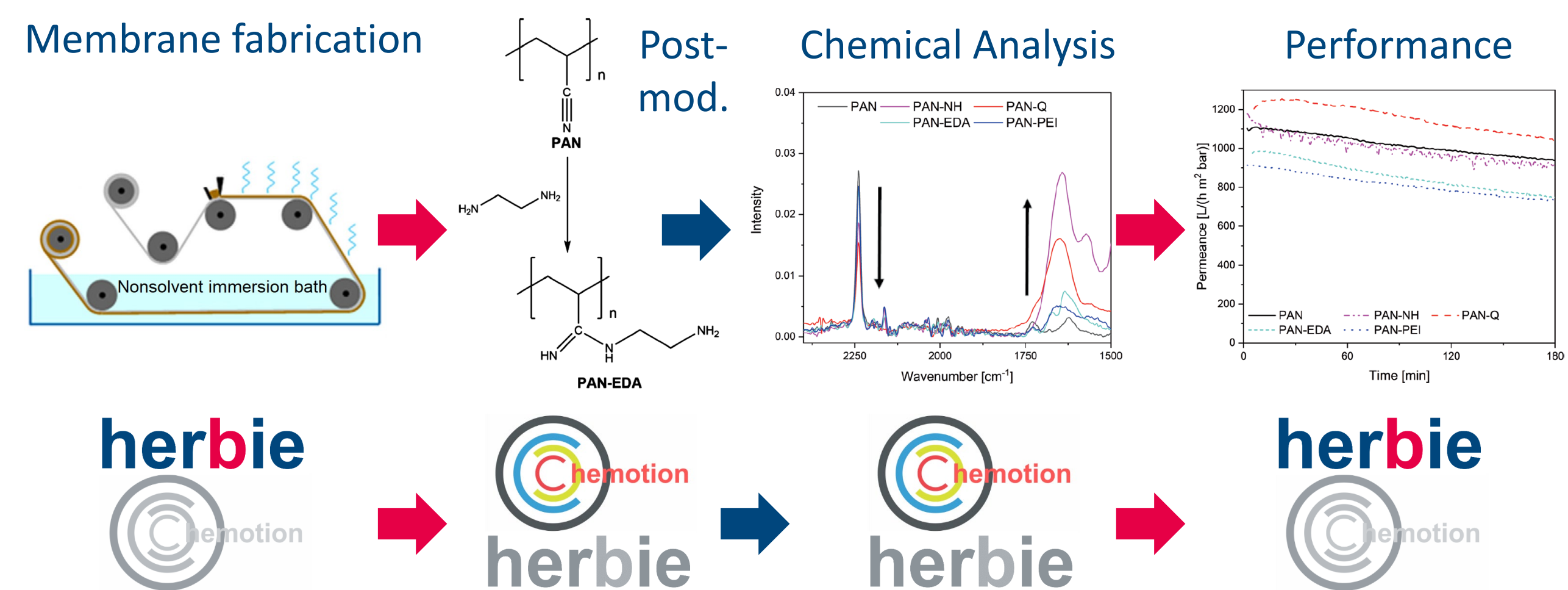
Outlook

- Derive specific metadata exchange format from general metadata scheme
- Develop API for both ELNs
- Embed experimental datasets
- Develop metadata converter for other ELNs
- Publish guide

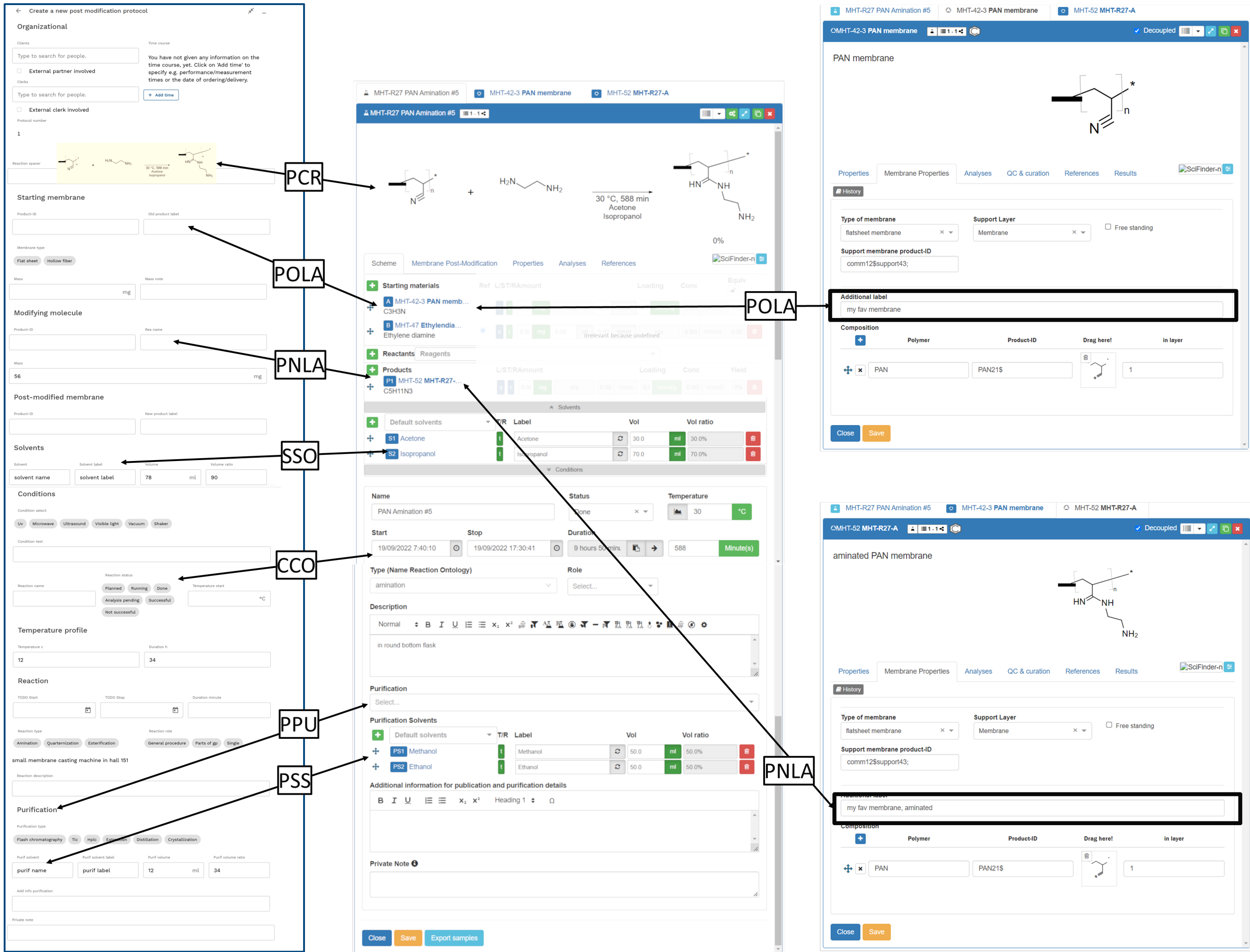


Use case

- Chemical post-modification of PAN membranes



Frontend mapping



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