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THE LAB THAT NEVER FORGETS – STRUCTURED INSTITUTIONAL KNOWLEDGE AS THE NEW COMPETITIVE CURRENCY IN ADHESIVE DEVELOPMENT

ABSTRACT

Adhesive development lives on experience. Every formulation generation builds on the previous one, on raw material knowledge, test results, failed attempts, and the small tricks nobody ever writes down. When experienced chemists leave a company, that knowledge leaves with them. What remains are spreadsheets, local drives, and the quiet hope that someone still remembers why formulation 47b was better than 47a.

The real problem is not too little data. It is data without structure, context, and connection. This talk shows what happens when that changes. Drawing on transformation projects in the adhesives and specialty chemicals industry, we illustrate how an AI-native R&D operating system enables formulation teams to make their institutional knowledge permanently accessible. On this foundation, additional capabilities are unlocked step by step: structured experiment planning, property prediction, targeted raw material substitution, compliance checks and, progressively, AI-assisted support for recurring research tasks.

The key insight from practice is not the technology itself, but the speed of value: processes that previously took weeks can now be initiated in days. Not because chemists are replaced, but because they can direct more of their capacity toward what they do best: finding new solutions.

We discuss what such a transformation means in practice, what preconditions it requires, and why companies that structure their R&D data today are building a lead that becomes increasingly difficult to close over time.

The talk is aimed at R&D leaders, formulation experts, and anyone wondering what role AI will play in their labs - and whether now is the right time to act.

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