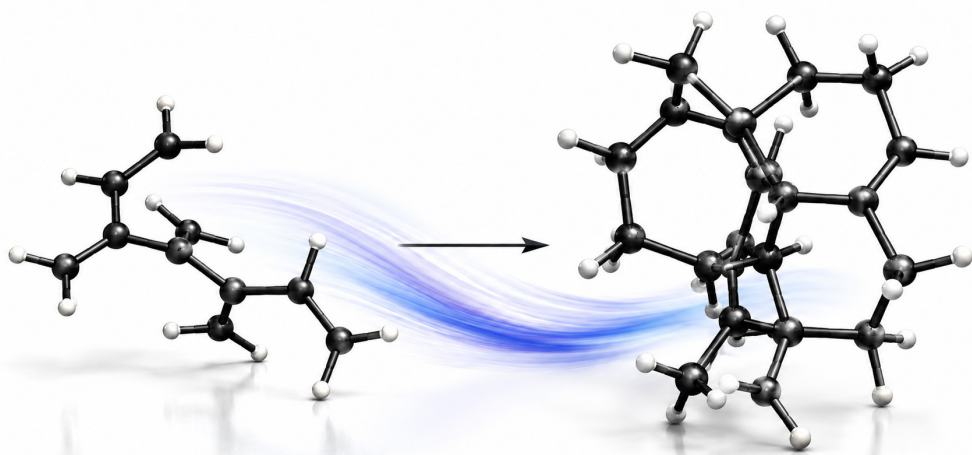




invité par l'assemblée du Collège de France
sur proposition du professeur Louis FENSTERBANK.

Michael SHERBURN

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CANBERRA, ACT 2601, AUSTRALIA

Vendredi 17 juillet 2026

Total Synthesis with Designed Hydrocarbons

Amphithéâtre Maurice Halbwachs — de 11h à 12h

We design, synthesise, and study simple unsaturated hydrocarbons, seeking to understand what makes them tick and how they can be exploited in the synthesis of complex natural products. This programme deliberately bridges two disciplines that rarely meet: fundamental hydrocarbon chemistry and total synthesis.

Our strategy is built around sequences of cross-coupling and pericyclic reactions that generate large amounts of molecular complexity in very few operations. The prevailing view is that short syntheses are achieved by starting with complex materials and adding relatively little new complexity. We pursue the opposite strategy. Beginning with exceptionally simple molecules, we generate complexity rapidly and nevertheless arrive at natural product targets in surprisingly few steps.

The talk will describe the conceptual framework behind this work, several methodological developments arising from it, and their application in total synthesis. It will conclude with some speculation on how these ideas might evolve as increasingly complex molecules are assembled from ever simpler starting materials.

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