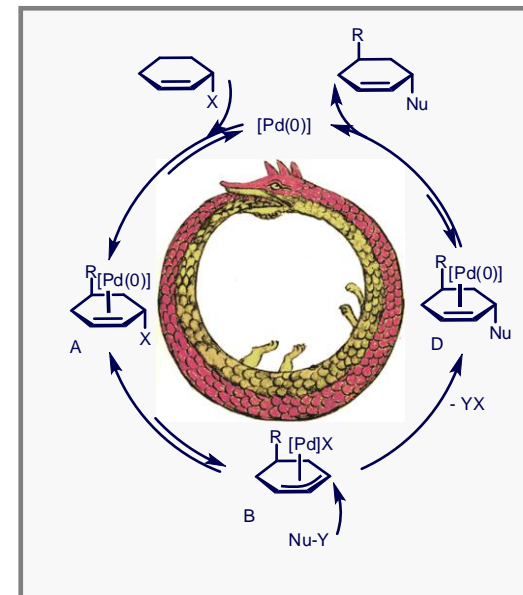


IUSS Lectures

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Moderna Catalisi Organometallica a Fini Sintetici

Principles of Homogeneous Organometallic Catalysis

- The TM-L Bond
- The Fundamental Organometallic Steps
- Basics of organometallic catalysis
- Applied Homogeneous Catalytic Processes: A Selection.
- Reduction Processes

Reduction of Carbon Carbon Double Bonds

Reduction of Carbon Oxygen Double Bonds

- **The catalytic chemistry of palladium (0): $[Pd(0) \rightarrow Pd(II) \rightarrow Pd(0)]$**

Generation of Pd(0) from Pd(II) complexes

Pd(0) sources

Syn carbopalladations:

C-C Cross-couplings reactions

C-N / C-O Cross couplings

η^3 -Allylpalladium Chemistry

Additions to $Y[Pd(II)]X$ -activated alkenes and alkynes ($Y = C, N, O$)

- **The catalytic chemistry of palladium (II)**

Non-organometallic Pd(II) sources

Addition of Nucleophiles to Alkenes: General Reactivity

Oxidative processes $[Pd(II) \rightarrow Pd(0)]$

Non-oxidative processes $[Pd(II)]$ that stays Pd(II)



Ouroboros from Lucas Jennis:
*De Lapide Philosophico**

* The Ouroboros is an ancient alchemic symbol depicting a dragon eating its own tail.