**Special Invited Lecture**
**Inter-Disciplinary Explorations in Chemistry (I-DEC 2018)**

# Development of Synthetic Methods How to Access Small and Large Rings

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**Abstract**:

Heterocycles are present in a great diversity of natural products and/or bioactive compounds. They are also present in ligands, dyes, materials, etc. Due to the importance of these cyclic compounds, the development of chemoselective, efficient and versatile methods is one of the main area of research and it is worth mentioning that, in the literature, two third of the publications are related to heterocycles.

In this lecture, different methods will be presented to construct small and large heterocycles containing oxygen and nitrogen and we will show that transition metals such as gold and rhodium are appropriate to realize the construction of heterocyclic skeletons. On the other hand, we will show that thermal conditions can induce rearrangements to access macrocycles without using high dilution.

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# Bio-Sketch of Speaker

**Dr Janine COSSY**
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Janine Cossy's early career was spent in Reims (France), where she did her undergraduate and graduate studies at the University of Champagne-Ardenne, working on photochemistry under the supervision of Pr. Jean Pierre Pète. After a postdoctoral stay with Pr. Barry M. Trost, for two years at the University of Wisconsin (USA), she returned to Reims where she became, in 1990, Director of Research at the CNRS. In the same year, she moved to Paris and, since 1990, she is Professor of Organic Chemistry at the ESPCI Paris.

Janine Cossy's research interests focus on the synthesis of natural products and biologically active molecules and on the development of synthetic methods. Her research efforts have resulted in more than 500 publications and 15 patents, 24 book chapters and the edition of 9 books. Among the awards, she received the CNRS Bronze Medal (1987), the CNRS Silver Medal (1996), UK Royal Society Rosalyn Franklin International Lecturership awarded to internationally recognized women scientists (UK) (2005), Le Bel Award from the French Chemical Society (France) (2009). In 2013, she was nominated Chevalier de la Légion d'Honneur and in 2015, she obtained the E. C. Taylor Senior Award (USA) and the UR Ghatak endowment Award (IACS, India). In 2017, she was elected at the French Academy of Sciences. In 2018 she was promoted Officier de l'Ordre National du Mérite (France), nominated Fellow of the American Chemical Society (USA) and she obtained the Professor PC Ray Award from the Indian National Science Academy (India). She is Organic Letters Associate Editor since 2005.