【无机化学论坛】 Avian magnetoreception – a radical sense of direction

（香港大学-北京大学金属化学生物学讲习班系列讲座）

报告人: **Peter Hore 教授**

Department of Chemistry, University of Oxford

时间：2021年11月19日（周五） 下午16:00-17:30

地点：北京大学化学学院A区717报告厅.

**摘要：**Small migratory songbirds travel spectacular distances each year, navigating by a variety of means most of which are poorly understood. Among them is a remarkable ability to perceive the direction of the Earth’s magnetic field. Despite more than 50 years of research, the biophysical mechanism of this extraordinary sense remains obscure. In this lecture, I will discuss the proposal that the birds’ magnetic compass relies on light-dependent chemical reactions in their eyes. Specifically, the unique properties of photochemically formed radical pairs in cryptochrome proteins could allow detection of magnetic interactions six orders of magnitude weaker than previously thought possible. I will outline the basis of the radical pair mechanism, present some of the evidence for the involvement of cryptochrome, and comment on a few of the open questions posed by this unconventional hypothesis.

**个人简历**

Peter Hore has spent most of his life in the Department of Chemistry at the University of Oxford, first as a student, then as a Junior Research Fellow (1982–83), and now as Professor of Chemistry and Fellow and Tutor of Corpus Christi College. His only time away from Oxford was a postdoctoral fellowship at the University of Groningen (1980–82).

Over the years he has worked on a number of topics around magnetic resonance and the effects of electron and nuclear spins on chemical reactivity, an area known as Spin Chemistry. These include spin hyperpolarization, protein structure and folding, photosynthetic energy conversion, and NMR methodology. Since about 2005 he has been trying to unravel the biophysical mechanism that allows migratory songbirds to detect the direction of the Earth’s magnetic field as an aid to navigation.