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物理系学术报告 **Physics Department Colloquium**

11 月 19 日，周五，16:00-17:00，教 12-201

From “Bronze Age” to “Iron Age”—An Overview of the Recent Development in Superconductivity

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摘要

Superconductivity was first discovered by Kamerlingh Onnes about one hundred years ago in 1911. Since its discovery, there have been many important breakthroughs in the field of superconductivity, which not only had great impact on the development of superconductivity, but also had profound influence on the development of modern sciences. One of the most exciting events in superconductivity development was the discovery of high temperature superconductivity in copper oxide compounds, which led to the discovery of superconductors that can be cooled using liquid nitrogen, a dream come true for the superconductivity research community. Over the past twenty years, developments in high temperature superconductivity have been an unprecedented event in the history of scientific development. Among many exciting new developments, the most notable are the discovery of various new materials that exhibit high temperature superconductivity. One particular discovery that really surprised the community was the discovery of an Iron-based superconductor almost two years ago. The heat of Iron-based superconductor research over the past 20 months, though not as intent as that after the discovery of cuprate superconductors more than 20 years ago, indeed brought new excitement and illumination to the field. This new development teaches us that there are many routes to the search for new superconductors. As long as we work hard enough, we should be able to find new systems. And the rich physics involved in the iron-based superconductors will also broaden our research horizons, as it provides a valuable platform for further understandings of the mechanism of high temperature superconductivity.

吴茂昆教授简介：

吴茂昆，中国台湾省花莲县人。**1973** 年毕业于淡江大学物理学系，**1975** 年获淡江大学物理学研究所硕士学位，**1981** 年美国休斯顿大学物理学博士。现任职中央研究院物理研究所（前任所长）。

吴茂昆教授是著名的超导科学家，于 **1987** 年与朱经武博士发现世界第一个高于液态氮温度的超导体 **YBCO**。

吴茂昆教授先后获得多项学术荣誉：

1988 U.S.A. National Academy of Science Comstock Prize
1988 NASA 杰出贡献奖
1988 阿拉巴马大学研究奖
1988 State of Alabama Resolution
1988 美国中华工程师协会年度奖
1989 淡江金鹰奖
1994 Bernd T. Matthias Prize
1994 中国物理学会会士
1995 李远哲杰出人才奖
1998 亚太国际材料学院院士
1998 中央研究院院士
2004 第三世界科学院院士
2004 美国国家科学院外籍院士

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