

# 凝聚态物理-北京大学论坛

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## Elaboration of ZnO nanowire arrays and their applications on green energy and environment

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王亚敏 , Professor Yamin LEPRINCE-WANG received B.S. degree from Zhejiang University in China (1985), M.S. and PhD degree from Pierre and Marie Curie University (Paris VI) in 1991 and in 1995 respectively. She then joins Université Paris-Est Marne-la-Vallée in 1995 as Assistant Teacher, in 1996 as Associated Professor and in 2008 as Full Professor. Between 2006-2010, she was the Chief of the Material Science Department. Since 2008, she is the Leader of the Laboratoire de Physique des Matériaux Divisés et Interfaces (LPMDI). Her main research interest is oxide nanomaterials and their applications.

**Abstract:** Zinc oxide (ZnO) is one of the most promising semiconductor materials for large applications, such as nanogenerator of electricity, photovoltaic cells or chemical sensors. We use the electrochemical and hydrothermal methods – both at low temperature and low cost methods, for the ZnO nanowire arrays. The control of different elaboration parameters leads to obtain the homogeneous nanowire arrays with an excellent crystallinity and a reasonable aspect ratio. Some applications based on the ZnO nanowire arrays will be presented, such as nanogenerator of electricity due to the piezoelectric properties of ZnO, solar cells using the ZnO as n-type transparent electrode, or the gas sensor due to the multi-sensitivity of the ZnO.

时间：4月19日（星期四）15:00—16:40

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