

Condensed matter nuclear science research status in China

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A brief introduction of 25 year research on ‘cold fusion’ in China is presented with address on its five features and the international recognitions.

Keywords: Cold fusion, condensed matter nuclear science, selective resonant tunnelling model.

Introduction

COLD fusion is referred to as ‘normal temperature nuclear fusion’ in China, as suggested by Xue Sen Qian (The honorary Chairman of China Association for Science and Technology). In 2002, during the 9th International Conference on Cold Fusion (ICCF-9), the International Advisory Committee decided on a new name, condensed matter nuclear science (CMNS). These nomenclatures were important for this research continuing for 25 years in China. There are five aspects of the research as presented in ICCF-14: (1) National policy has always been to keep a high expectation at the beginning. (2) A group of top scientists has continued to support this research, even though it appears to violate common sense. (3) International collaboration has been an important aspect from the beginning until today. (4) Chinese researchers have attempted to develop the basic research independently with their own ideas (e.g. CR-39 for charged particle detection instead of neutron detection, deuterium flux correlation with ‘excess heat’ in gas-loading experiments, selective resonant tunnelling model, neutrino conjecture, etc.). (5) Hot fusion institutions have kept abreast of the development in normal temperature nuclear fusion, and have even lent support occasionally.

Over 20 institutions have continued research into these phenomena since 1989.

International support

International recognition played an important role. For example, Fleischmann (University of Southampton, UK), supported the first presentation of the selective resonant tunnelling model in ICCF-5 (1995) using his personal check.

Hora (University of New South Wales, Australia), paid a special visit to Tsinghua University in 1998, and suggested to apply the selective resonant tunnelling theory to ‘hot fusion’ for confirmation.

Sood and Dolan (International Atomic Energy Agency) invited Chinese scholar to Vienna for the introduction of selective resonant tunnelling model early in 1999.

Josephson (Cambridge University) cited the selective resonant tunnelling model in the 2004 Lindau Conference (Nobel Prize winner’s lecture series).

Kikuchi (Japan Atomic Energy Agency), published a book in 2011 entitled *Frontiers in Fusion Research, Physics and Fusion*, where he cited our three-parameter formula for fusion cross-section which was first derived for explaining ‘cold fusion’. This book will be published in Chinese in 2014.

Neutrino conjecture

The direct corollary of this three-parameter formula is neutrino emission from the ‘cold fusion’ cell. The successful detection of neutrino emission from a self-sustaining cold fusion heater (such as Dennis’ sphere shown in the 2013 National Instruments Week) would eventually change the world.

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