

# 凝聚态物理-北京大学论坛

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## CRYSTALLINE AND QUASI-CRYSTALLINE INTERFACES FROM ORDER TO DISORDER

Prof. Louissette Priester

时间：5月10日（星期四）15:00—16:40

地点：北京大学物理大楼中212教室

**Abstract:** The choice of this topic is suggested by the recent scientific events. In 2011, the Nobel Prize in Chemistry has been awarded to Dan Shechtman for his discovery of quasi-crystals. This concept has been used to describe interfaces in crystalline materials; Firstly described as an amorphous layer between two crystals at the beginning of the 20th century, a large number of interfaces have been then considered as ordered at different scales. But, more recently, the mathematical tools required to approach quasi-crystals (algorithm, strip method) were used in view to approach random interfaces. A distinction between long-range order and short-range order enables to understand the structure of these interfaces that are predominant in real materials. It is a necessary step to go towards Interface Engineer

**Louissette Priester,** Louissette Priester got her PhD in the field of Material Sciences in 1971 at Paris 11 University. She entered as a assistant-professor in the same university where she became full professor in 1981. Then, according to the French system, she progressively reached different levels until the highest one named "exceptional". Since 2005, she is professor emerita. Among her teaching activities, she had lectures for undergraduate and graduate students in different material domains: elemental metallurgy bases, phase transformations, structural defects, plasticity, electron microscopy. After her thesis, she worked in the field of "Phase Transformations" until 1978. Then she spent 6 months at Cornell University (USA) in the group of professor R.W. Balluffi, one of the best specialist in the "Grain Boundaries and Interfaces" science. Coming back to France, she created a new research group in the "Metallurgy" laboratory in Orsay named "Grain Boundary Structures, Defects and Properties". Not only GBs in metal (iron and alloys, nickel, chromium) were investigated but also ceramics (alumina). The group was maintained until 2000 at Orsay campus, then it moved to the ICMPE (Institute of Chemistry and Materials of Paris East) in Vitry (now in Thiais, very close to Paris), going on with the same activity. Louissette Priester wrote about 150 articles in international journals, had the same number of communications most of them as invited speaker. She was invited to stay from one to six months in several foreign institutes in USA (New York State University, Ohio state University at Columbus, Case Western University at Cleveland), in Russia (Lomomossov University), in Japan (Institute of Industrial Sciences at Tokyo, University of Kyoto) and other European countries (Germany, Poland ...). She recently wrote two books in French. One, in the field of her researches, is entitled "Grain Boundaries – From Theory to Engineering" and has been published by EDP Science ; The second book is addressed to a large audience, but its main objective is to attract young people towards Material Science (including three components: physics, chemistry and mechanics). Its title is "The materials – History, Science and Perspective", it has been published by the CNRS Editions.

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