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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30544.5-2014

Nanotechnologies -- Vocabulary -- Part 5: Nano/bio interface

纳米科技 术语 第5部分：纳米/生物界面

(English Translation)

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Foreword

GB/T 30544 "The term nanotechnology" is divided into the following sections.

- Part 1. Core terminology;
- Part 2. Nano-objects nanoparticles, fibers and nano-sheet;
- Part 3. carbon nano-objects;
- Part 4. nano-structured materials;
- Part 5. Nano/Bio Interface;
- Part 6. Nano measuring instruments and scales;
- Part 7. Nano medical diagnosis and treatment;
- Part 8. nanometer manufacturing process.

This section GB/T Part of 530,544.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO/T S80004-5.2011 "Nanotechnology Terminology - Part 5. Nano/Bio Interface." this part made the following editorial changes. Removed ISO/T S80004-5.2011 international norms in the French language version of the technical text.

This section proposed by the Chinese Academy of Sciences.

This part of the National Nano Technology Standardization Technical Committee (SAC/TC279) centralized.

This section drafted by. National Center for Nanoscience.

Introduction

The interaction between biology and nanotechnology is one of the areas of modern science in the most interesting and most promising technology. One of the breakthroughs of frontiers. In this area for the development of biomedical and pharmaceutical research provides a new way, at the same time enhancing the enjoyment of Carolina M objects absorb and understand the distribution in the organism, including through high-tech means in the body for targeted drug delivery, developed with high spirit Sensitivity, high selectivity of (bio) chemical sensors, the use of advanced technology to repair environmental pollution. In addition, a variety of biological materials have been found (Such as bone) structure in the nanometer scale, and many nanometer scale entities present in the organism, so that nanotechnology in biology Applications possible.

Associated with the Nano/Bio Interface abiotic (nm) field terminology, this section includes only those in the field of biochemistry has not been Adequately defined terminology. Similarly, for the biological area Bio/Nano Interface, include only specific applications on Nano/Bio Interface surgery language. Thus, although the scope of the term may include quantum dots for biological tracer, but such objects can be used existing physical chemistry and molecular Biological terms will be described.

Nm/biological explanation includes two aspects. Impact prefix nano means a biological nanotechnology to biological effects, and bio-nano is a prefix meaning Taste influence biological effects of nanotechnology. This section focuses on terminology between nanotechnology and biological effects of the region, such as in Living cells attached to the surface of nanoparticles or nanostructures adhered to the substrate of living cells. If you are concerned biological effects, it is satisfied that appropriate representation M - the biological interface; on the contrary, if the concern is how nanomaterials biomass modified are suitably represented as a bio - nano interface. If both Follow the above two aspects, said nano/bio interface.

This section covered are basic conceptual terms, rather than their specific applications (such as drug delivery, dental or plastic surgery). Currently satisfied M/biological interface standard terminology, the term may be considered include only the smallest part of this area. Taking into account the Nano/Bio Interface areas Rapid development, can expect in the next version Added more terminology.

The term nanotechnology Part 5. Nano/Bio Interface

1 Scope

This section GB/T 30544 and defines the interface between nanomaterials and biological systems relevant terms and definitions, aimed at promoting science , Engineers, technicians, designers, manufacturers, regulatory authorities, non-governmental

organizations, consumer organizations, public and other interested persons on the following Exchange between.

--- Nanotechnology in biology, biotechnology application;

--- Biological systems, biological theory in nanotechnology.

2 with the GB/T 30544 standard terminology other parts of related terms the following terms are used in this section, but has been defined in other parts of the GB/T 30544 standard terminology, the only content-based needs to better understand and repeatedly listed.

Nanoscale

In the size range between 1nm ~ 100nm.

Note 1: This size range is usually, but not exclusive demonstration of larger size can not be extrapolated from the property. For these properties, the upper scale, the lower limit is similar.

Note 2: This definition is introduced in the lower (about 1nm) The purpose is to avoid not to set the lower limit, a single atom or a small cluster default to nano-objects or Nanostructured units.

Nanoscience the study appears on the nanometer scale, with individual atoms, molecules or bulk materials significantly different, the nature and the size and structure of the relevant and current Like discipline.

Nanotechnology Nanotechnology Applied Science manipulate and control nanoscale (2.1) and the substance knowledge to take advantage of individual atoms, molecules or bulk material properties significantly different the nature and size and structure and related phenomena.

NOTE: manipulation and control including materials synthesis.

Nanomaterial any external dimensions, internal or surface structure at the nanoscale materials.

Note 1: This generic term includes nano-objects and nanostructured materials.

Note 2: See engineered nanomaterials manufactured nanomaterials and associated nanomaterials.