

## **MEMORANDUM**

**To:** Patent Professional Employees

**From:** Office of the Commissioner for Patents

**Date:** August 25, 2004

**Subject:** Nanotechnology Digest and forthcoming Nanotechnology Cross-Reference Art Collection (XRAC) - Class 977

A new cross- reference digest is being created for nanotechnology located in newly established Class 977, entitled Nanotechnology. Due to the unique cross-disciplinary nature of nanotechnology, it is important that all examiners are aware of this new cross- reference digest and that documents are appropriately placed as a cross-reference (XR) or secondary classification into this new cross- reference digest.

Documents classified in this digest will be available for searching by mid-September 2004. However, effective immediately, examiners should begin cross-referencing any issued U.S. patent or classified U.S. pre -grant patent application that discloses subject matter that meets the nanotechnology definition accompanying this announcement into **977/DIG 1**.

A team of patent professionals representing the Technology Centers is developing a comprehensive nanotechnology cross-reference art collection (Class 977, Nanotechnology) classification schedule that will replace this digest.

A listing of contacts that can answer questions about this new digest is at the end of this memo.

This nanotechnology digest will serve the following purposes:

- Facilitate the searching of prior art related to Nanotechnology.
- Function as a collection of issued U.S. patents and published pre-grant patent applications relating to Nanotechnology across the technology centers.
- Assist in the development of an expanded, more comprehensive, nanotechnology cross-reference art collection classification schedule.

The ultimate nanotechnology cross-reference art collection schedule for Class 977 will include definitions, subclasses and search notes related to classifications in other U.S. classes. Notice will be provided when that classification schedule is completed.

Note that until the comprehensive nanotechnology cross-reference art collection classification schedule is published, this digest should not be construed as an exhaustive collection of all patent documents that pertain to nanotechnology.

It is imperative that an examiner issuing a nanotechnology-related U.S. patent or classifying a nanotechnology-related U.S. pre-grant patent application for publication continue to place the original classification (OR) of the patent, or the primary classification of the pre-grant publication in the appropriate class and primary subclass in the U.S. patent classification

(USPC) system, and place *only* a cross-reference (XR) or secondary classification of a pre-grant publication in cross-reference art collection Class 977, Nanotechnology.

### **USPC – Nanotechnology, Class 977**

This class provides for disclosures

- related to research and technology development at the atomic, molecular or macromolecular levels, in the length of scale of approximately 1-100 nanometer range in at least one dimension, and
- that provide a fundamental understanding of phenomena and materials at the nanoscale and to create and use structures, devices and systems that have novel properties and functions because of their small and/or intermediate size.

In addition, disclosures in this class may be defined by one or more of the following statements.

- The novel and differentiating properties and functions of disclosures in this class are developed at a critical length scale of matter, typically under 100 nanometers.
- Nanotechnology research and development includes manipulation, processing, and fabrication under control of the nanoscale structures and their integration into larger material components, systems and architectures. Within these larger scale assemblies, the control and construction of their structures and components remains at the nanometer scale.
- In some particular cases, the critical length scale for novel properties and phenomena may be less than 1 nanometer or be slightly larger than 100 nanometers.
- The novel properties or functions, e.g. special effects, are attributed to and are intrinsic at the nanoscale.
- Such nanoscale materials are infinitesimally minute arrangements of matter (i.e. nano-structural assemblages) have particularly shaped configurations formed during manufacture and are distinct from both naturally occurring and chemically produced chemical or biological arrangements composed of similar matter.
- Also encompassed within this collection are disclosures related to the controlled analysis, measurement, manufacture or treatment or use of such nano-structural assemblages and their associated processes or apparatus specially adapted for performing at least one step in such processes.
- Novel and differentiating properties and functions relate to the altering of basic chemical or physical properties of the nano-structural assemblage attributed at the nanoscale.

#### **Information Contacts:**

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