Effective Management of Patentable Subject Matter: Special Challenges for Researchers in Nanotechnology

IGERT

Program in Nanotechnology Innovation

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Special Challenges for Researchers in Nanotechnology

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Nanotechnology in Its Infancy?

Roughly 20 Years Under Its Belt

Annual Growth Rate of Nanotech Patents Worldwide is Roughly 20%

Lots of Ground to Cover Still

USPTO Reaction

Nanotechnology Patent Class 977 Created in 2004 – with 963 subclasses

http://www.uspto.gov/go/classification/uspc977/defs977.pdf

But still no dedicated art unit of examiners

National Nanotechnology Initiative

Federal Interagency Project Responsible for Promoting Nanotechnology

Federal funding for Nanotechnology has increased from approx. $464 mil. in 2001 to nearly $1.5 billion for the 2009 fiscal year, w/ similar levels of funding in EU and Japan

Estimate 20,000 nanotech researchers worldwide

www.nano.gov

Nanotech Patents Classified as:

1) research and technology development at the atomic, molecular or macromolecular levels, in the length scale of approximately 1-100 nanometer range; 2) creating and using structures, devices and systems that have novel properties and functions because of their small and/or intermediate size; and 3) ability to control or manipulate on the atomic scale

What is a Patent?

Right to Exclude Others from

making;

using;

selling; or

importing

the invention claimed in the issued patent

What is Patentable?

- Process
- Machine
- Article of Manufacture
- Composition of Matter
- or **improvement** to any of the above

Elements for Patentability

Useful / Utility

Novelty

- Prior Art
- Time Barred

Non-Obvious

- Person Having Ordinary Skill in the Art (PHOSITA)
- New and Unexpected or Surprising Results
- Accounts for almost half of all rejections

Special Challenges for Nanotech

Is Smaller Version of Existing Product Patentable Based on Size Alone?

Novel or Anticipated?

One Clear Difference in Physical Properties is Enough

Obvious?

Is the Smaller Version of Existing Product Obvious?

Show an Unexpected or Surprising Result, such as Novel Properties and Functions

Show Prior Art did not Enable Manufacture of Smaller Version

Who is an Inventor?

Person who conceives invention to the level that they can describe it to PHOSITA

Based on Who Contributes to Issued Claims

Do Not have to Contribute at Equal Levels

Reduction to Practice is not Inventorship

Improper Inventorship May Cause Invalidity

First to Invent in US / Time Bar

- Date of Invention is Date of Conception
- Not Known or Used in US or Patented or Published Anywhere Prior to Date of Invention
- Not Sold or Used in US More than 1 Year Prior to File Date
- Not Published Anywhere more than 1 Year Prior to File Date

Foreign Filing Bar

Absolute novelty requirement

Any Public Disclosure or Commercial Use Prior to Filing is Bar to Filing

Most Inventions in US are not Patentable Abroad for this Reason

Researcher's Remedy

- Inventor's Laboratory Notebook is Evidence of Conception
- Notebook Can Record Efforts to Reduce Invention to Practice
- Entries Must be Signed, Dated and Witnessed
- Witness Should be PHOSITA
- NDAs Protect Against Public Disclosure

Why Bother Patenting?

- Your Collaborators at other Institutions May File to Try to Bar You from Using Your Invention, such as filing on Improvements to Your Invention
- NIH and NSF Are Increasingly Requesting Assurances of IP Rights
- Bears on Percentage of Grant Awarded to Each
- Opportunity to Gain License Revenue under Institution Intellectual Property Policies
- Under Bayh-Dole Act Must Submit Invention Disclosure to Federal Funding Agencies

Searching Prior Art

- Search on USPTO website using Patent Class 977 and Subclass
- Prior Art Search Can Guide Direction of Your Research
- Prior Art Search Will Reveal Sources of Government and Corporate Funding

http://www.uspto.gov/go/classification/

Helpful Links

UMass Amherst Intellectual Property Policy
http://media.umassp.edu/massedu/policy/IntellecPropUMA-Boston.pdf

Invention Disclosure Form
http://www.umass.edu/research/cvip/files/Invention-Discl-Form.pdf

USPTO Patent Searches http://patft.uspto.gov/

List of Resources

Koppikar, et al., “Current Trends in Nanotech Patents: A View From Inside the Patent Office,” Nanolabweb, v. 11, issue 1 (2004).

Laura W. Smalley, “New Patent Class May Spur Nanotech Growth,” Rochester Business Journal, v. 24, no. 43 (Jan. 2009).