

Securing IP rights in nanotechnology – Best Practices



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WHO HANDLES CASE?

- 1st Choice: Need supervising attorney that understands the mischief a litigator is capable of, with significant experience reading and dissecting prosecution histories, and with the technical background to understand the nanotech issues
- 2nd Choice: supervising patent attorney with experience in prosecution and understanding of its impact on litigation, and/or experience in litigation
- 3rd Choice: supervising patent attorney experienced in prosecution, exposed to litigation and a significant proportion of opinion work



WHO HANDLES CASE?

- What about technological background?
 - Want attorney that understands:
 - The invention
 - The underlying technology – this is particularly important in nanotech, due to nuances that must be understood and explained
 - The market (with inventor/client's help)
- With technological ability, attorney has better ability to explain invention and differences to Examiner in a personal interview, while being cautious about estoppel in written response
- Attorney may also need to act as educator during interview and written responses, to teach Examiner about nanotech properties vs. bulk material or micro material



PROSECUTION CONSIDERATIONS

- Validity/Enforceability
 - Duty of Disclosure/Candor
 - Always important, but in nanotech can have increased importance due to high number of non-patent literature references
 - Failure to Satisfy Duty Can Endanger Validity and/or Enforceability
 - Unenforceability (Inequitable Conduct)
 - Materiality
 - Intent



DUTY OF DISCLOSURE

- Any reference (Patent/Non-Patent) Any Language - If Material To Invention
- Duty Extends to Inventors, Others in Company Aware of Application and Patent Attorneys
- Duty Is Ongoing until Patent Issues
- Includes: Office Actions/Communications From Other Patent Offices In Corresponding Non-US Applications
 - Related US Applications
 - Company Activities prior to Filing
 - Substantive Communications re: Application from Other Parties



The F_____ Word

- **FESTO ISSUES** (*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.* 122 S.Ct. 1831 (2002); 344 F.3d 1359, (Fed Cir, 2003) on remand from Supreme Ct.)
 - Draft Broad or Narrow Original Claims?
 - Amend or Fight?
 - Secret to Success? **PERSONAL INTERVIEW** with Examiner!

KEY: In most cases, try to obtain broadest literal scope possible; best done by personal discussion with Examiner



PROSECUTION CONSIDERATIONS

- Consider who the potential infringer might be and draft claims accordingly
- Want to avoid a claim that is either impossible for single party to infringe or that is infringed only by individual consumer (particularly for product claims)
- Use many classes of claims to cover products in different manners: nanoparticles, nanoclusters, compositions containing nanoparticles, nanoassemblies, etc.



PROSECUTION CONSIDERATIONS Strategic Claim Drafting

- Write many claims/diverse claims
 - only one of many is needed to succeed in litigation
 - makes it more difficult to invalidate all claims
 - focus on describing invention from differing perspectives
 - makes opinions more difficult and expensive
 - broadens scope of potential infringers
 - improves odds of succeeding in prosecution and litigation



Different Claim Types

(12) **United States Patent**
Gogotsi et al.

(10) **Patent No.:** **US 6,740,403 B2**
(45) **Date of Patent:** **May 25, 2004**

(54) **GRAPHITIC POLYHEDRAL CRYSTALS IN THE FORM OF NANOTUBES, WHISKERS AND NANORODS, METHODS FOR THEIR PRODUCTION AND USES THEREOF**

1. An isolated graphitic polyhedral crystal comprising graphite sheets arranged in a plurality of layers to form an elongated structure having a long axis and a diameter and having 7 or more external facets running substantially the length of the long axis, wherein the diameter is from 5 nm to 1000 nm and the external facets are of substantially equal size, and wherein the crystal is in a form selected from the group consisting of needles, giant nanotubes, rings, cones, double tipped pyramids, nanorods and whiskers.

15. A microscopy probe comprising a graphitic polyhedral crystal having a plurality of graphite sheets arranged in a plurality of layers to form an elongated structure having a long axis and a diameter and having 7 or more external facets running substantially the length of the long axis, and having protruding from one end thereof a nanotube.

16. A nanoscale gear assembly, comprising a graphitic polyhedral crystal comprising graphite sheets arranged in a plurality of layers to form an elongated structure having a long axis and a diameter and having 7 or more external facets running substantially the length of the long axis, wherein the crystal is in the form of a ring having a hollow center, through which is placed a nanorod as an axle.

17. A reinforced matrix composite, comprising a matrix and a reinforcement, wherein said matrix is a member selected from the group consisting of ceramics, metals and polymers, and wherein said reinforcement is a graphitic polyhedral crystal comprising graphite sheets arranged in a plurality of layers to form an elongated structure having a long axis and a diameter and having 7 or more external facets running substantially the length of the long axis, wherein the diameter is from 5 nm to 1000 nm and the external facets are of substantially equal size, and wherein the crystal is in a form selected from the group consisting of needles, giant nanotubes, rings, cones, double tipped pyramids, nanorods and whiskers.

PROSECUTION CONSIDERATIONS

- When drafting/amending claims:
 - Use claim terms with well settled meanings
 - Watch out for costly traps: use of “step for” in claims when you do not want 35 USC 112, 6th paragraph to apply
- Have a claim that is prone to simple and direct Markman hearing (*Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976, 34 USPQ2d 1321, 1326 (Fed. Cir.)(in banc), *cert. granted*, 116 S. Ct. 40, 132 L.Ed.2d 921 (1995), affirmed 116 S.Ct. 1384 (1996)).
 - Use words with well settled definitions in patent law: “Comprising” vs. “Containing”
- Especially important in nanotech world, where the meanings of terms have continued to evolve
 - Where there is no settled meaning, must define the terms within the specification
 - Probably best to define nanotech terms regardless, to avoid problems in the future, unless the term is clearly defined in the art and unchanging

PROSECUTION CONSIDERATIONS

- When discussing invention in response to Office Actions:
 - Don't hang patentability on any single feature
 - Discuss claimed invention as a whole
 - This makes it more difficult for accused infringer to produce newly discovered prior art showing the “only important feature” in view of your admission that other elements are old!



THANK YOU!



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