THE PRACTICAL IP FOR NATURAL SCIENCES WEBINAR SERIES

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5 TIPS:
PATENT PROSECUTION FOR POLYMER TECH

THE PRACTICAL IP FOR NATURAL SCIENCES WEBINAR SERIES

MEET THE PRESENTERS

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- **Registered Patent Attorney and Principal**
- **Over 40 years of IP experience in chemical, polymer, pharmaceutical, biotechnology, cosmetics and medical device fields.**

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- **Registered Patent Attorney**
- **Emphasis on chemical engineering, materials science, biotechnology, organic chemistry, and electro-mechanical related arts.**

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Comprising: A transitional phrase that may comprise unintended consequences…

- MPEP 2111.03: “The transitional term ‘comprising’, which is synonymous with ‘including,’ ‘containing,’ or ‘characterized by,’ is inclusive or open-ended and does not exclude additional, unrecited elements or method steps”.
- We are all comfortable using “comprising” in our day-to-day claim drafting.
- However, in the chemical arts, particularly with respect to polymers, there may be special considerations not present in other arts.

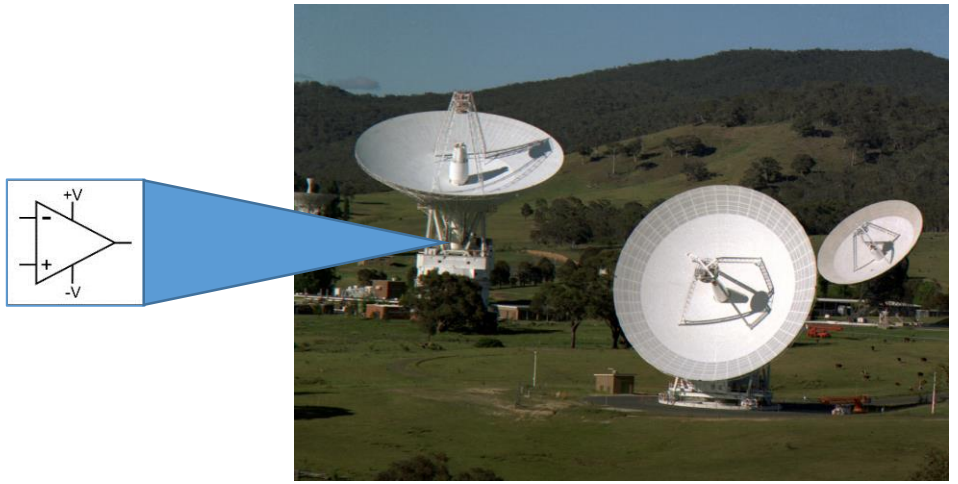
“Comprising” in an Electro-mechanical Claim

Claim 1. **A receiver comprising:**

an electrical input;

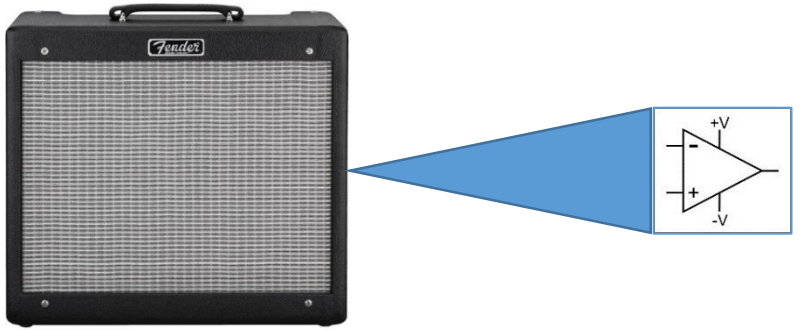
an electrical output; and

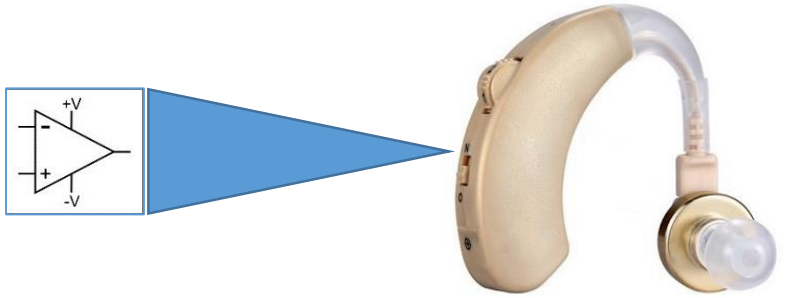
an amplifier adapted to be connected to the electrical input and the electrical output.



What can this claim read on? What types of devices can have an amplifier as well as additional features that aren’t recited in claim 1?

Devices Including an Amplifier

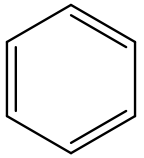




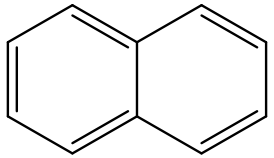
Each of these devices, though very different from a receiver such as an interstellar receiver does include an amplifier. Thus, a claim reciting an amplifier could read on these devices. Essentially, an amplifier is *fungible* and can be removed from one device and inserted into another without altering the properties of the amplifier.

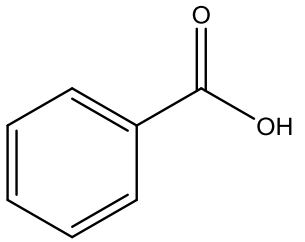
Chemical Structures are Different

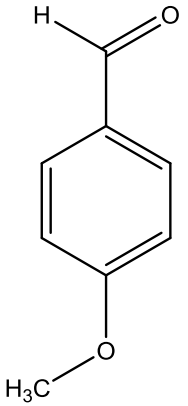
Suppose a claim is directed towards a composition comprising benzene.



Would such a claim read on the following structures?







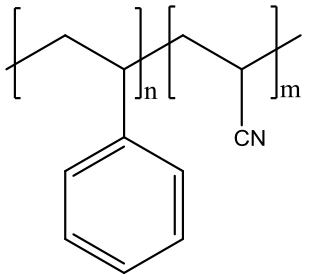
All of these structures appear to include a benzene motif, but what happens if you try to remove the benzene motif in a manner similar to removing the amplifier of the previous examples?

The answer is broken or fragmented molecules none of which are benzene.

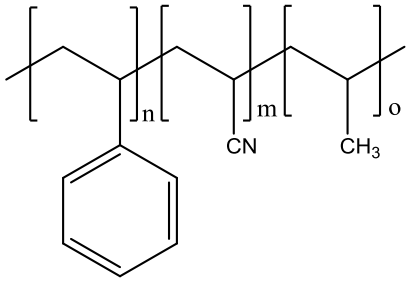
Thus, taking functional groups or chemical motifs are not *fungible* elements.

Polymer Structures

Suppose a claim is directed towards a polymer comprising the structure:



Would the claim read on the following structure:



It may not, even though both structures share the same n-monomer and m-monomer, they differ by the presence of the o-monomer. Simply removing the n-monomer and m-monomer from the o-monomer results in broken bonds with valences that are not found in the claimed structure.

Recall that *In re Papesch*, 315 F.2d, 381 (C.C.P.A. 1963), stands for the proposition that a claim to a structure is also a claim to its properties. The two polymers would be expected to have different properties based on their different structures.

A Polymer Claim Case Study

- Consider claim 1 of United States Patent No. 4,728,721 A
- Claim 1. A biodegradable high molecular polymer useful as an excipient in producing a pharmaceutical preparation comprising a copolymer or homopolymer of about 50-100 mole percent of lactic acid and about 50-0 mole percent of glycolic acid having a weight average molecular weight of about 2,000 to 50,000 and wherein the content of water-soluble low molecular compounds, as calculated on the assumption that each of said compounds is a monobasic acid, is less than 0.01 mole per 100 grams of said high molecular polymer.

Biopolymers

Is claiming an active site, motif, or genetic sequence on a biopolymer such as a protein enough to read on another biopolymer including the same active site, motif, or genetic sequence *plus* more.

Consider the following cases:

- *Enzo Biochem, Inc. v. Gen-Probe Inc.,* 63 U.S.P.Q.2d 1609 (Fed. Cir. 2002), and *University of Rochester v. G.D. Searle & Co.*, 69 U.S.P.Q.2d 1886 (Fed. Cir. 2004)
  - written description can be met by showing that an invention is complete by disclosure of "sufficiently detailed relevant identifying characteristics…i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics." *Enzo*.
- *Ariad Pharmaceuticals, Inc. et al. v. Eli Lilly and Company*, 598 F.3d 1336 (Fed. Cir. 2010).
  - Since its inception, this court has consistently held that § 112, first paragraph contains a written description requirement separate from enablement, and we have articulated a "fairly uniform standard," which we now affirm. *Vas-Cath Inc. v. Mahurkar,* 935 F.2d 1555 (Fed. Cir. 1991). Specifically, the description must "clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." *Id.* at 1563 (citing *In re Gosteli*, 872 F.2d 1008 (Fed. Cir. 1989). In other words, the test for sufficiency is whether the disclosure of the patents relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date

5 Tips for Patent Pros in Polymer Tech

1. In the chemical arts the transitional phrase “comprising” may not be as open ended as in other arts.
2. Consider including a comprehensive list of monomers beyond what may appear in the claims.
3. Include a comprehensive discussion relating to the arrangement of the monomers (e.g., random, block, or alternating).
4. Increase a showing of possession by describing properties that would be expected in polymers in addition to those explicitly recited in the claims.
5. As a thought exercise, consider enforcement in a manner similar to rebutting a written description or enablement rejection. For example, ask yourself whether your disclosure is broad/detailed enough to support your desired claim construction.

QUESTIONS & DISCUSSION

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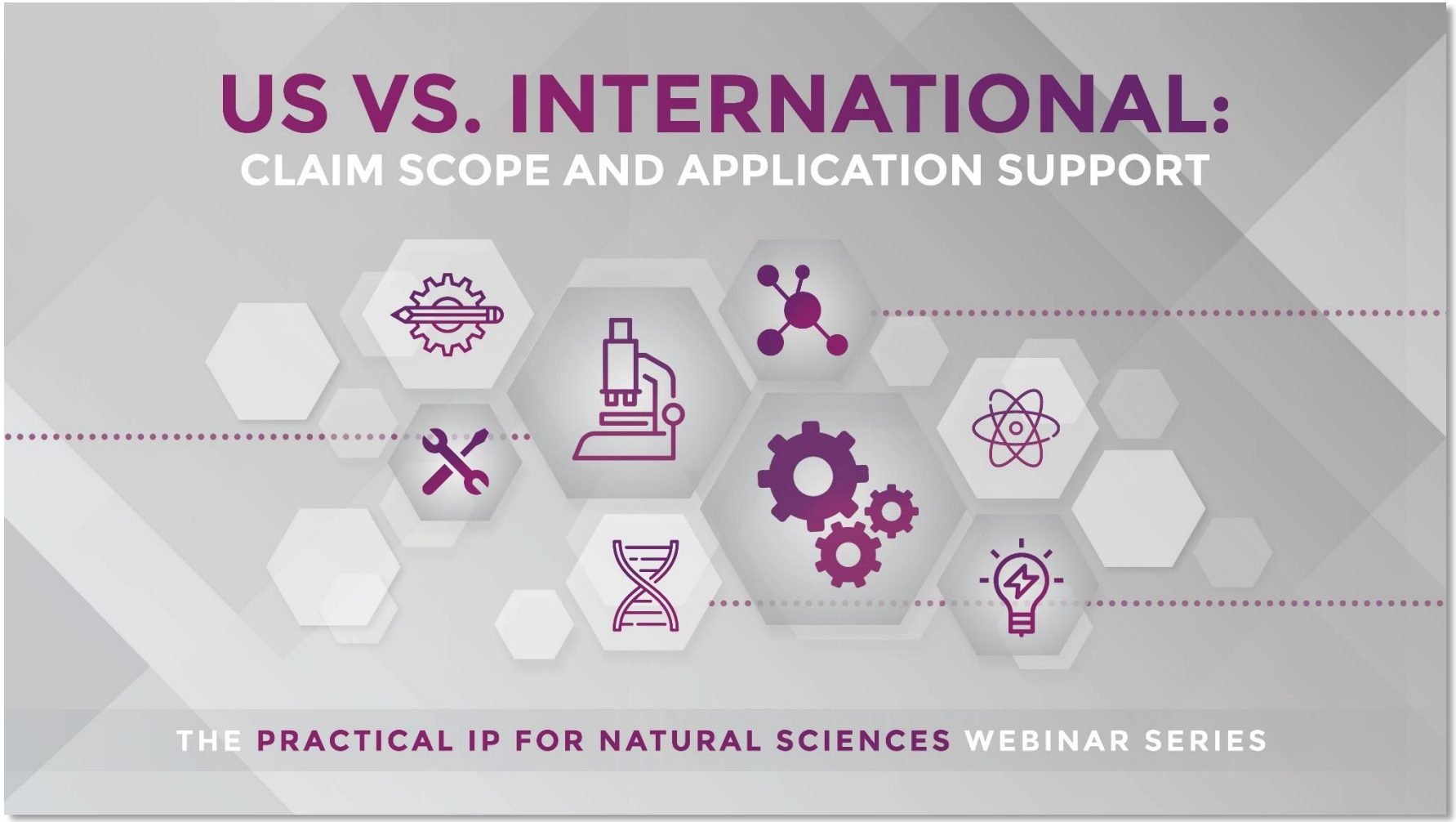

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DECEMBER 14

1:00 PM (CST)

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