THE PRACTICAL IP FOR NATURAL SCIENCES WEBINAR SERIES

SLW INSTITUTE
Building Extraordinary IP Assets

HOW TO MAXIMIZE PROTECTION

PATENTING INVENTIONS INCLUDING CHEMICAL FEATURES

THE PRACTICAL IP FOR NATURAL SCIENCES WEBINAR SERIES

MEET THE PRESENTER

Nicholas Lanzatella , J.D., Ph.D.

- **Principal at SLW**
- **Ph.D. organic chemistry**
- **B.S. chemical engineering**
- **Specialize in materials and chemistry in an engineering context**

SLW INSTITUTE
Building Extraordinary IP Assets

Patent

- Right to exclude others from making, using, selling
- File a patent application
- Patent examination
  - Prior art
  - Novelty
  - Obviousness

Novelty and Obviousness

- Novelty
  - All features in a single reference
  - Claim A + B + C, all of A + B + C in single reference
- Obviousness (inventive step)
  - All features found in combination of references
  - Claim A + B + C, A + B in one reference, C in other reference

How to overcome obviousness

- Show not all features disclosed
- Show invention not predictable from cited references
  - No motivation to combine references
  - Teaching away
    - Can be powerful, but can be hard to find and also hard to show
    - Even examples with poor results can be a disclosure
    - Generally need disparagement to show teaching away
  - Advantageous properties

Unpredictable properties/results for overcoming obviousness

- The M.P.E.P. at the beginning of § 2143.02 states (emphasis added) "[a] rationale to support a conclusion that a claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and *the combination would have yielded nothing more than predictable results* to one of ordinary skill in the art."
- Show that claimed invention has advantages not predictable from the cited references
- An advantage is any aspect we can characterize as advantageous

Most frequent hurdle: Result-effective variables

- Examiner's best response to unexpected results: Prior art shows claimed features are result-effective variables
- If Examiner can show the prior art correlates a particular feature to a certain effect, they can assert that one of ordinary skill in the art could use routine optimization to vary that feature and optimize the effect
- Overcome by showing prior art fails to correlate the feature to the effect, or by amending claims to recite a feature that is not correlated to the effect by the prior art
- Characterizing the advantages resulting from particular features carefully using comparative data can sometimes provide ammunition to overcome
  - It can be easier for an Examiner to show something is result-effective if your evidence is only general

Examples of potentially unpredictable properties in mechanical subject matter

- Machine does something not predictable from cited references
  - Machine is more efficient
  - Stronger, more powerful
  - Cheaper to manufacture
  - Unpredictability can be hard to show in mechanical arts

Examples of potentially unpredictable properties in chemical subject matter

- Compound/material has some property that is not predictable
- Material property
  - Strength
  - Elasticity
  - Transparency
  - Adhesion
  - Ability to do something better
  - Could be anything we can characterize as an advantage
- Combination is better than sum of parts
- Method
  - Efficiency
  - Generates a material having an advantageous property
  - Does anything better

Life sciences subject matter causes "unpredictability" more frequently than other arts

- It is easier to show something is unexpected in life sciences (chemistry/biology) as compared to mechanical
  - This also applies to electrical and software
  - I pick mechanical as example throughout, because often mechanical and chemical inventions are intertwined, while this is less frequent with electrical and software

Why is predictability different for life sciences?

- Mechanical = “predictable art”
  - No mystery
  - The way machines work is usually something we can understand
  - They are big and easy to see, and their properties are easy to ascertain
- Chemistry (and other life sciences) = "unpredictable art"
  - The way chemicals and biological materials work is kind of mysterious
  - You can't see them
  - Chemical compounds can have huge complex structures that we cannot fully characterize, and can interact with each other and their environment in ways that are so complex that they seem random and are extremely hard to predict with any certainty

Take advantage of chemical features

- If there is some property of a material that is part of your invention that makes the invention work better for something, make sure to highlight this in the application
- Chemical features can leverage all the other features of your invention
  - Can broadly claim all the other features if the chemical feature can be shown to give unexpected results
- If possible, describe the exact materials used in the Examples section, not just tradenames
- For a material or chemical, include a listing of all characterization data known
- You cannot tell in advance what data might be useful during prosecution

Take advantage of chemical features

- Plan ahead: include comparative data, the gold standard for showing a feature gives an advantageous property
  - Show the chemical feature makes the invention work better under at least one set of conditions
  - Ideally, the chemical feature is demonstrated to have an advantage over the comparative example under a variety of conditions, such as at different concentrations, in the presence of different additives, at different temperatures, and the like
- Utilize a patent attorney that has a chemical background, who can do a good job fleshing out and highlighting your chemical features

Summary

- Show unexpected properties from claimed chemical features to overcome obviousness
- It is easier to show life sciences (e.g., chemical) features give unexpected properties to a claimed invention than other types of features
- If your invention has a chemical feature, for maximum value your patent application should fully flesh this out from broad to narrow; use an attorney with a chemical background to get the broadest claims
- Inventors should be encouraged to gather comparative data on advantageous properties caused by chemical features

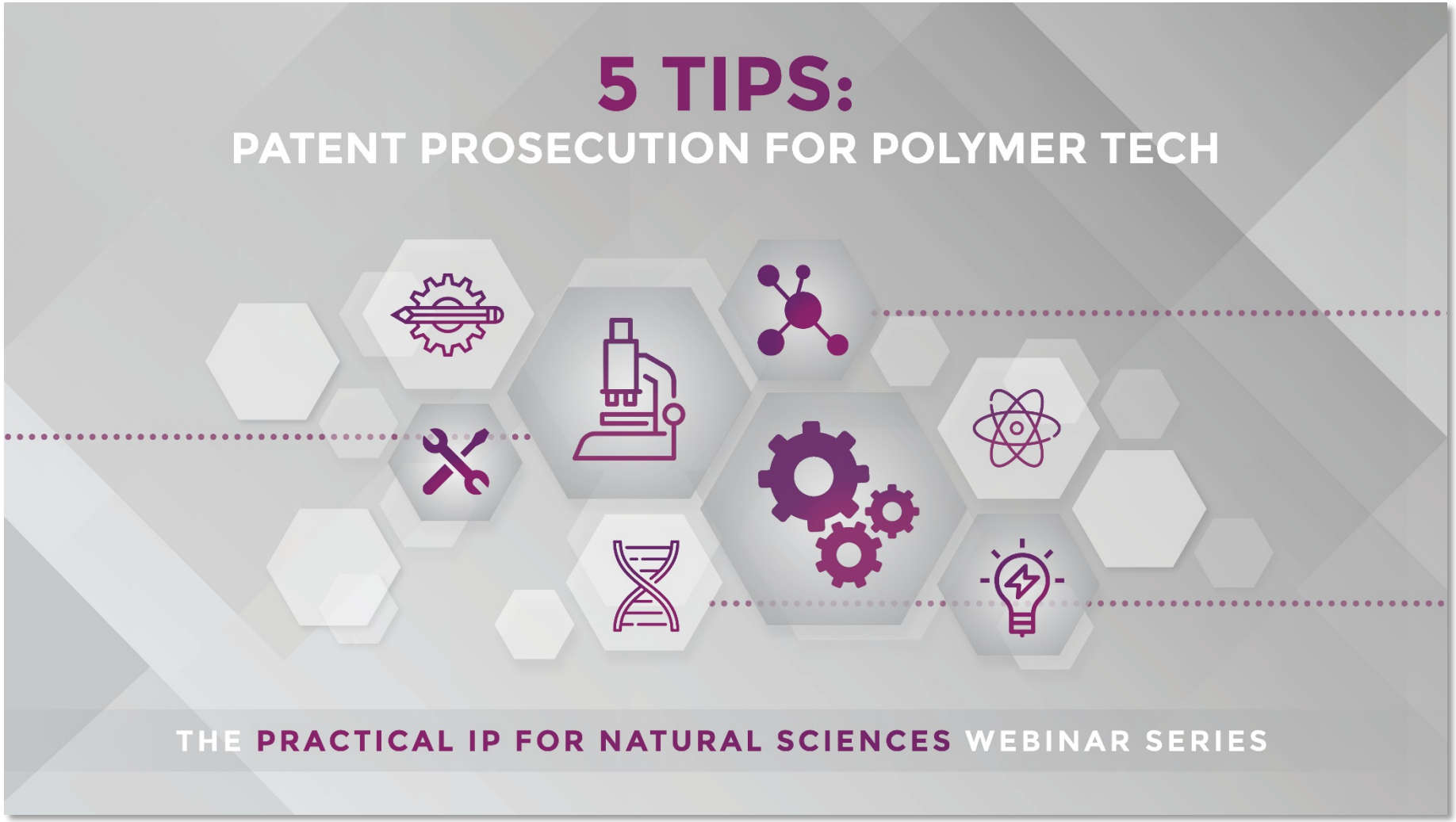
QUESTIONS & DISCUSSION

Nicholas Lanzatella, J.D., Ph.D.

nlanzatella@slwip.com

(612) 349-9580

SLW INSTITUTE
Building Extraordinary IP Assets



Please join us for the next presentation

November 9
1:00 PM (Central)