Patents (II) - Chemistry Considerations

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“Every revolutionary idea seems to evoke three stages of reaction…
(1) It’s completely impossible
(2) It’s possible, but it’s not worth doing
(3) I said it was a good idea all along”

Arthur C. Clarke
The bargain

- State grants a limited monopoly in return for
- applicant revealing an invention to the world
Basic principles

- Patentable inventions:
  - novel
  - inventive
  - industrially applicable

- Patent Term: 20 years from filing date
Anatomy of an patent

- Description, including examples
- Claims
- Drawings (optional)
Purpose of claims

To define the monopoly

(to mark out your territory)
Claims in chemical applications

- Starting compounds and intermediates
- Method of synthesis
- Compounds or compositions
- Uses of compound
- Products including compound
- Apparatus for preparing compound
- Kits including compound
- Process requiring compound
Patenting process: overview

File Application

Search Report

Publication – 18 months

Examination

Grant

Renewal fees
Breadth of claims

Original claim

Claim as amended

The ‘prior art’
Novelty - Combinations

'A+B'

Prior Art 1
Polymer A

Prior Art 2
Polymer B

'\textbf{A+}\textbf{B}'

Your Invention – New!
Novelty – Enabling Disclosure

Prior Art –
- No method to make C-D
- Speculative
- C-D not known or available elsewhere

Your Invention – New

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Inventive Step

- Most countries = **not obvious**
- Perspective of notional Skilled Person
  - unimaginative
  - has all common general knowledge

- Europe – “unexpected technical effect”
- Problem and solution
Inventive Step – Combinations (1)

1. Automotive field
   Polymer A - opaque

2. Drug delivery field
   Polymer B - opaque

Composition – transparent
Unexpected – Inventive!
Inventive Step – Combinations (II)

1. Automotive field
   Polymer A - opaque
   “but if you add a polymer of class C then A becomes transparent”

2. Automotive field
   Polymer B – opaque
   “polymer B is a class C polymer”

Composition – transparent
Expected – Obvious
1. A chemical X-Y.
   [independent – broadest scope]

2. A chemical X-Y as claimed in claim 1, wherein Y is a transition metal.
   [dependent – has all features of claim 1, but further defines it in some way]
Purpose of description

- Revealing the invention “in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.”

*Article 83 European Patent Convention*
Descriptions

Descriptions for chemical inventions should:

- tell the “story” – prior art; inventive step
- provide suitable fall-back positions
  - very important if broad claims need narrowing
- Include worked examples – ideally a variety
  - include methods of synthesis for all new compounds
  - for known compounds, state source or give reference
  - full details of tests carried out
  - Could the examples be reproduced?
The “Examples”
Conclusions

- Claims are key
- Plan for eventualities while drafting patent
  - two-way process between you and patent attorney
- Ongoing process – it does not end on filing!
- Keep patent attorney posted on developments in invention/business
- Examiners are not always right
The End

Thank you

Any questions?

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