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Intellectual
Property

Carole Drury, Associate and Patent Attorney

An introduction to patenting chemical innovation

8 April 2021



Agenda

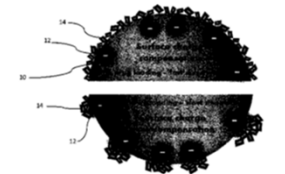
- Who (what) am I?
- Patents: protecting an invention
- Tips

Patents

What is a patent?

- Protects inventions
- Bargain - tell the world your invention in exchange for a monopoly right of up to 20 years
- Territorial - one patent per country

<p>(12) United States Patent Hudson et al.</p>	<p>(10) Patent No.: US 10,849,989 B2 (45) Date of Patent: Dec. 1, 2020</p>
<p>(54) ISOLATED COMPOSITE DRUG AND CARRIER NANOPARTICLES</p> <p>(71) Applicant: University of Limerick, Limerick (IE)</p> <p>(72) Inventors: Sarah Hudson, Limerick (IE); Teresa Tierney, Limerick (IE); Ake Rasmuson, Limerick (IE); Katalin Bodnar, Limerick (IE)</p> <p>(73) Assignee: University of Limerick, Plassey (IE)</p> <p>(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.</p> <p>(21) Appl. No.: 16/331,296</p> <p>(22) PCT Filed: Sep. 7, 2017</p> <p>(86) PCT No.: PCT/EP2017/072450 § 371 (c)(1), (2) Date: Mar. 7, 2019</p> <p>(87) PCT Pub. No.: WO2018/046591 PCT Pub. Date: Mar. 15, 2018</p> <p>(65) Prior Publication Data US 2019/0262472 A1 Aug. 29, 2019</p> <p>(30) Foreign Application Priority Data Sep. 7, 2016 (GB) 1615196.1</p> <p>(51) Int. Cl. A61K 47/69 (2017.01) A61K 9/14 (2006.01) (Continued)</p> <p>(52) U.S. Cl. CPC A61K 47/6949 (2017.08); A61K 9/141 (2013.01); A61K 9/5192 (2013.01); (Continued)</p>	<p>(58) Field of Classification Search CPC A61K 47/6949; A61K 47/6929; A61K 9/5192; A61K 33/06; B92Y 5/00; B82Y 30/00 See application file for complete search history.</p> <p>(56) References Cited U.S. PATENT DOCUMENTS 2010/0168044 A1 7/2010 Misra 2011/0269723 A1 11/2011 Asotra et al. 2012/0183588 A1* 7/2012 Supamahitorn A01N 39/00 424/401</p> <p>FOREIGN PATENT DOCUMENTS CN 103251956 A 8/2013 EP 3012225 A1 4/2016 (Continued)</p> <p>OTHER PUBLICATIONS Wang et al., "Mesoporous Silica Nanoparticles in Drug Delivery and Biomedical Applications", <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i>, vol. 11, No. 2, (Year: 2015). Yang Wang et al., "Mesoporous silica nanoparticles in drug delivery and biomedical applications", <i>Nanomedicine: Nanotechnology, Biology and Medicine</i>, vol. 11, No. 2, Feb. 1, 2015, pp. 313-327. (Continued)</p> <p><i>Primary Examiner</i> — Carlos A Azpuru (74) <i>Attorney, Agent, or Firm</i> — Hamilton, Brook, Smith & Reynolds, P.C.</p> <p>(57) ABSTRACT A process for the preparation of a composite comprising a carrier particle and a plurality of drug nanoparticles. The process comprises providing a suspension of drug nanoparticles in the presence of a carrier particle, the carrier particle having an external surface that is functionalised with a surface treatment agent. The process simplifies isolation of drug nanoparticles from suspension.</p> <p>19 Claims, 6 Drawing Sheets</p>



Patent requirements

Patents are granted for inventions that have:

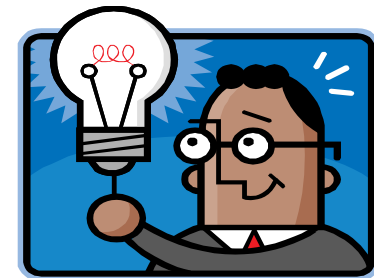
1. Novelty

Must be new over prior art.



2. Inventive step / non-obvious

Must not be obvious to a skilled person in the light of prior art + common general knowledge.



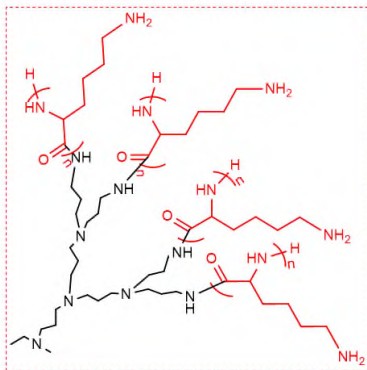
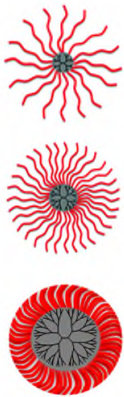
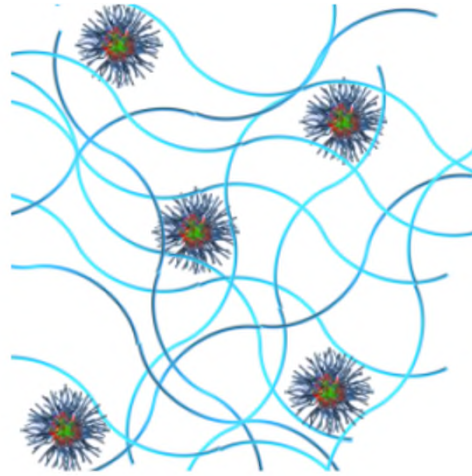
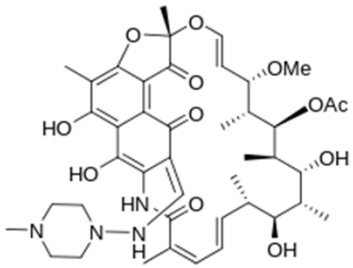
3. Industrial applicability



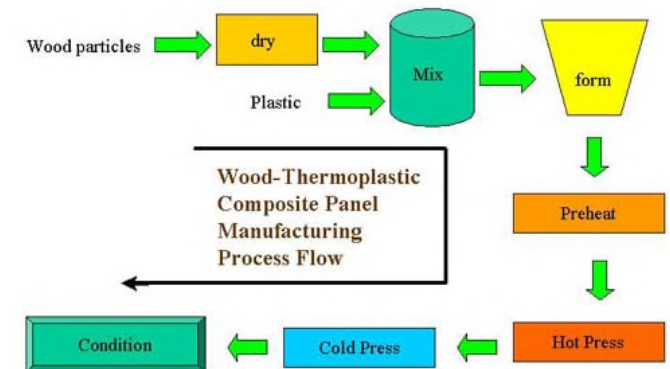
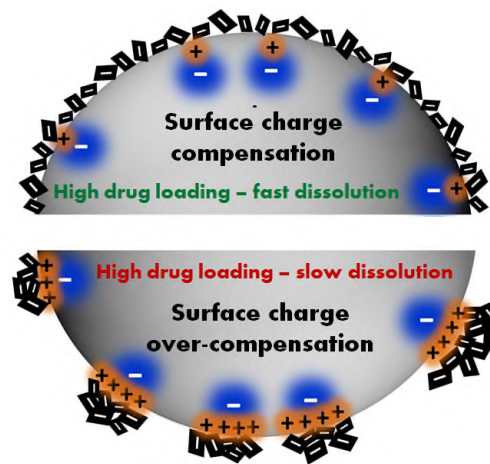
What can be claimed in a patent?

New composition of matter or apparatus

New uses, including medical uses



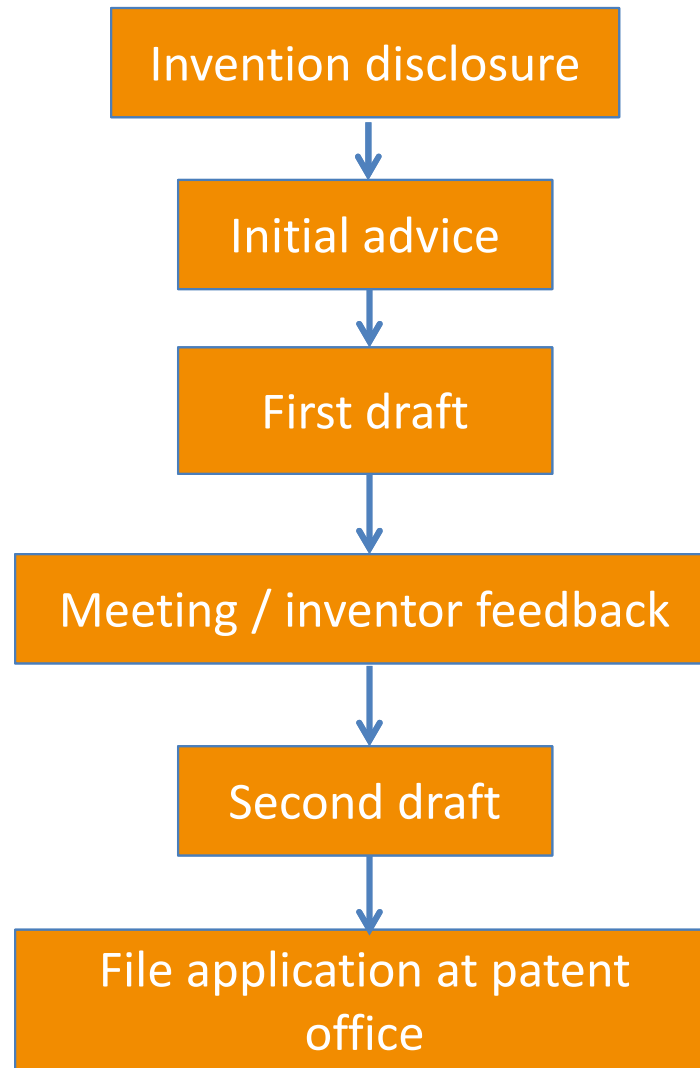
New methods or processes



Patent application format

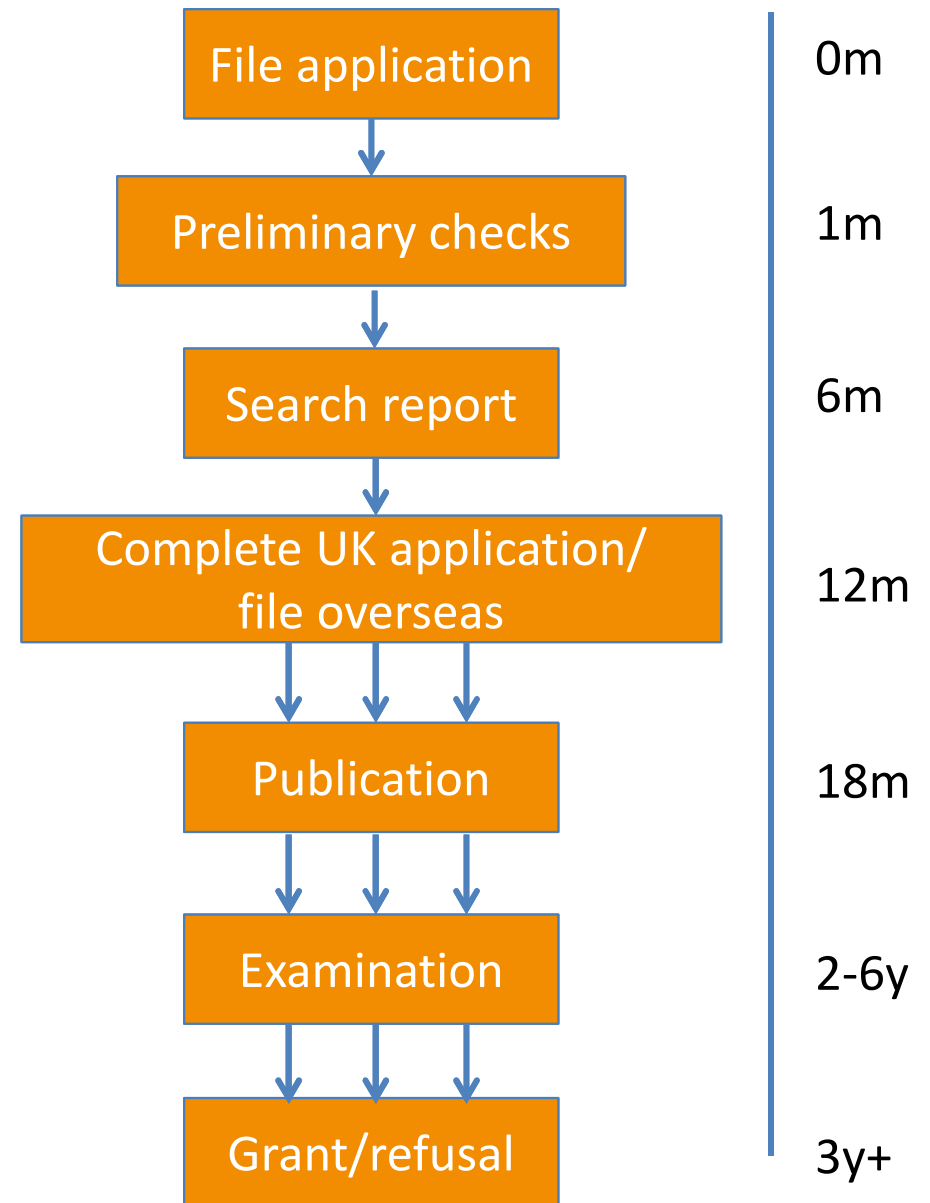
- Introduction / background
- Definition of the the invention and its benefits
- Examples
- Claims
- Drawings (optional)
- Abstract (optional)

Getting the application on file



Patent process

- File outside UK within 12m
“**claiming priority**” – benefit from first (UK) filing date
- There are regional/international agreements that provide for flexibility and cost-effective protection
- Different countries have different requirements



Tips

- ✓ File before you publish (do not assume confidentiality)
- ✓ Provide a write-up of the experiments
- ✓ Your reader is smart but ignorant

Talk to the tech transfer office!

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Thank you

All questions welcome!



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Thank you

All questions welcome!

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