



9 December 2024

Examination report No. 1 for standard patent application

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PHILLIPS ORMONDE FITZPATRICK

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Australia

Your reference: 1283301
Application number: 2022335232
Applicant name: QUANTUM ENERGY RESEARCH CENTRE (Q-CENTRE)
Earliest priority date: 25 August 2021

Final date for acceptance: 9 December 2025
Date of this report: 9 December 2024
Examination request date: 26 February 2024

Dear PHILLIPS ORMONDE FITZPATRICK,

Your application has been examined under [section 45 of the Patents Act 1990](#). I consider that this application does not meet the requirements of the Act because there are issues with the application that are explained in the report details.

You have **12 months** from the date of this report to overcome all my objection(s) otherwise this application will lapse.

You will also need to pay any annual continuation fees that apply. Your next continuation fee is due on **25 August 2026**.

NOTE: There is a current postponement of acceptance in place. If you overcome all other objections before the expiration of that postponement, the Commissioner will only accept the application at that time if you have filed a clear and unambiguous statement requesting the withdrawal of that postponement. Otherwise, a further adverse report will be issued.

Details of this patent application can be viewed on [Australian Patent Search](#).

Yours sincerely,

Adam Palmer
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Report details

Basis of the report

In examining this application I have considered:

- the verified translation of the PCT pamphlet as originally filed.

Summary of novelty, inventive step and patentable subject matter

	<i>Satisfy requirements?</i>	<i>Claim numbers</i>
Novelty/inventive step	Yes	NONE
	No	1-31
Patentable subject matter	Yes	1-31
	No	NONE

Detailed objections on issues that have been identified

Section 40 (support, disclosure, clarity, lack of unity)

- 1 The invention defined by claims 1-31 lacks support because the body of the specification does not provide sufficient information to enable the skilled addressee to perform the invention over the full scope of the claims.
- This is because the formula, range of constituent atoms and parameters a, b, c and d provide such a large scope of materials that the person skilled in the art could not determine those that provide a superconductive material. The specification describes a particular material of LK-99.
- Further, setting the parameters a, b, c and d to zero leaves no feature in the claims.

Documents cited or considered relevant

D1: GARISTO DAN: "LK-99 isn't a superconductor - how science sleuths solved the mystery", 16 August 2023 (2023-08-16), XP093210991, Retrieved from the Internet DOI: <https://doi.org/10.1038/d41586-023-02585-7> ^[1]
Category: T Claims: 1-31

D2: ANONYMOUS -WIKIPEDIA: "LK-99 - Wikipedia", 18 September 2024 (2024-09-18), XP093209828, Retrieved from the Internet<URL:https://en.wikipedia.org/wiki/LK-99#cite_note-patent-2021-38> ^[1]
Category: T Claims: 1-31

D3: KR 20210062550 A (QUANTUM ENERGY RES CENTRE Q CENTRE) 31 May 2021 ^[2]
Category: X Claims: 1-31

^[1] Cited in the search/examination report of EP 4368596 A4
^[2] Cited in the search/examination report of WO 2023/027536 A1

Note that this report has cited non-patent literature document/s. Copies of non-patent literature document/s can be requested for a fee (see [Patent Regulations, schedule 7, fee item 233 and 234](#)) through [online services](#).

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Please provide the citation details and associated patent application number with your request. Note that because of copyright restrictions we can only provide copies of hard copy books, journals and newspapers (see the Australian Patent Office Manual of Practice and Procedure at [part 5.6.4.6 Identifying and Raising Citations](#)). However, copies of any remaining documents should be readily obtainable from known electronic database sources.

Special categories of cited documents:

X: The claimed invention cannot be considered novel under [subsection 7\(1\)](#) in light of the document and/or cannot be considered to involve an inventive step under [subsection 7\(2\)](#) of the Act in light of the common general knowledge considered together with the document.

T: Later document published after the filing date or priority date cited to understand the principle or theory underlying the invention.

Novelty and inventive step

- 2 Claims 1 and 12 are not novel and lack an inventive step in light of the prior art documents discussed in section 4 of the EP Exam Report on EP2022861744 dated 14 October 2024.
- While the objection regarding these documents was not made under Australian law, I agree with the reasons given in that report and consider that they support a corresponding objection against the Australian claims.
- Furthermore, dependent claims 2-11 and 13-31 are either disclosed in the cited prior art or are considered obvious to a person skilled in the art. For example, claims 6-10 describe routine techniques for determining superconductivity:

Other issues

- 3 The invention claimed in claims 1 to 31 is not useful because not everything falling within the scope of the claims achieves the promised benefit.

The specification discloses that the claimed invention, a superconducting ceramic so-called LK-99, is useful for room temperature, low pressure superconductivity. The invention would not achieve this promised benefit.

Several publications after the publication date of this application (see T1 and T2 for example) argue that while the production of LK-99 ceramic has been achieved, the signature of the room temperature, low pressure superconductivity of the material has not been achieved or verified. The cited documents present credible evidence for why LK-99 is not exhibiting superconductive behaviour.

In light of these documents, the specification does not provide the person skilled in the art with clear means to provide the promised benefit.

END OF REPORT