

Patent Owner's Demonstratives

AdvanCell Pty Ltd. v. Sciencons, AS and ARTBIO, Inc.

PGR2025-00040

U.S. Patent No. 12,249,437

SCIENCONS & ARTBIO - EXHIBIT 2006
AdvanCell Pty Ltd.v. Sciencons AS & ARTBIO, Inc.
PGR2025-00040

Grounds Addressing Independent Claims

Ground	'437 Patent Claims	PGR2025-00040 Challenge
1	1, 3-4, 7-9, 11-12, 14-19, 22-26, 28-29, 31-32, 35-36, 38	§102: Hassfjell-Hoff
2	see ground 1	§103: Hassfjell-Hoff
3	1, 3, 5-7, 15-16, 18, 20-22, 29-33, 35-37	§102: Norman
4	see ground 3	§103: Norman
5	1, 3-12, 14-26, 28-38	§103: Hassfjell-Hoff & Norman
11	1-15, 34-38	§112

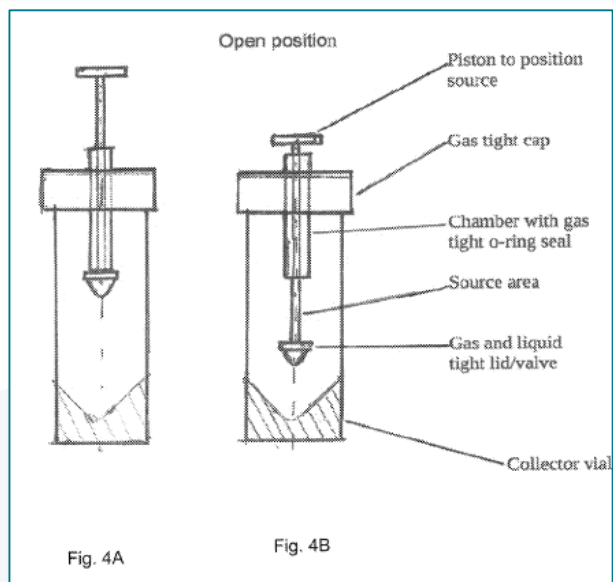
Pet. 1-2

Dependent Claim Grounds

Ground	'437 Patent Claims	PGR2025-00040 Challenge
6	2	§103: Hassfjell-Hoff & IAEA
7	13, 27	§103: Hassfjell-Hoff
8	8-12, 14, 17, 23-26, 28, 34, 38	§103: Norman & Hassfjell-Hoff
9	13, 27	§103: Hassfjell-Hoff, Norman, & Westrøm
10	13, 27	§103: Norman, Hassfjell-Hoff, & Westrøm

The '437 Patent and the Flawed Petition

1. A radioisotope generator comprising:
a solid precursor isotope source configured to emanate one or more gaseous progeny isotopes, the solid precursor isotope source comprising a precursor isotope; and
wherein the solid precursor isotope source is configured to be fluidly coupled to a volume including a collector surface with a gas tight seal, and wherein the solid precursor isotope source and the collector surface are configured such that the one or more gaseous progeny isotopes deposit one or more solid progeny isotopes on the collector surface.



37 CFR §42.204 Content of Petition:

- (3) **How the challenged claim is to be construed.** Where the claim to be construed contains a means-plus-function or step-plus-function limitation as permitted under 35 U.S.C. 112(f), the construction of the claim must identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function;
- (4) **How the construed claim is unpatentable** under the statutory grounds identified in paragraph (b)(2) of this section. Where the grounds for unpatentability are based on prior art, the petition must specify where each element of the claim is found in the prior art. For all other grounds of unpatentability, the petition must identify the specific part of the claim that fails to comply with the statutory grounds raised and state how the identified subject matter fails to comply with the statute; and

35 USC §322(a)(3):

- (3) **the petition identifies, in writing and with particularity,** each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim, including—

Multiple Alternative Constructions Inappropriate

Institution Decision:

At this stage of the proceeding, Patent Owner may have a persuasive argument. Although we preliminarily construe claim 1 as encompassing all three of Petitioner's proposed constructions, we have concerns as to whether it is appropriate to construe claim element [1.C] as having multiple constructions. We invite the parties to address the proper claim construction, and Petitioner's indefiniteness arguments, regarding claim element [1.C] at trial.

A “petitioner should present a single construction and apply that construction consistently before the Board.” *Terumo BCT Inc. v. Haemonetics Corp.*, IPR2025-01374, Paper 20, 3 (May 12, 2026) (informative).

“We are not in the business of aiding parties to stress test claim constructions to see which will prevail. As stated repeatedly, a petitioner should pick one [construction].” *Infinion Techs. Ams. Corp. v. Mosaid Techs. Inc.*, IPR2025-01456, Paper 27, 4 (March 17, 2026)

Petitioner's Case Founded on Improper Claim Construction

- Petitioner makes a mockery of claim construction
- Petition lists multiple “possible constructions,” but never identifies which is correct
- No characterization of how POSITA would understand the plain language of the claim
 - Instead points to figures allegedly embodying or not embodying different “possible constructions”
- Inconsistent iterations of constructions
- New constructions, continually evolving

Claim Construction: limitation 1c

Petition: three “equally possible” constructions

1. A radioisotope generator comprising:
a solid precursor isotope source configured to emanate one or more gaseous progeny isotopes, the solid precursor isotope source comprising a precursor isotope; and
wherein the solid precursor isotope source is configured to be fluidly coupled to a volume including a collector surface with a gas tight seal, and wherein the solid precursor isotope source and the collector surface are configured such that the one or more gaseous progeny isotopes deposit one or more solid progeny isotopes on the collector surface.

Pet. 5:

Thus, there are three possible constructions:

- The entire volume has a gas tight seal (with the precursor isotope source inside the volume),
- Just the collector surface, not the entire volume, has a gas tight seal (when the precursor isotope source is inside the collector), or
- The system is configured to selectively couple, using a gas tight seal, a volume with the solid precursor isotope source and a volume with a collector surface.

Pet. 95:

As explained in Section III(D)(2), “wherein the solid precursor isotope source is configured to be fluidly coupled to a volume including a collector surface with a gas tight seal” has three equally possible meanings of it in the claims:

- The entire volume has a gas tight seal (with the precursor isotope source inside the volume),
- Just the collector surface, not the entire volume, has a gas tight seal (when the precursor isotope source is inside the collector), or
- The system is configured to selectively couple, using a gas tight seal, a volume with the solid precursor isotope source and a volume with a collector surface.

POR, 11-21; Sur-Reply 3-11

More Constructions: “a collector surface with a gas-tight seal”

Pet. 5:

Thus, there are three possible constructions:

- The entire volume has a gas tight seal (with the precursor isotope source inside the volume),
- Just the collector surface, not the entire volume, has a gas tight seal (when the precursor isotope source is inside the collector), or
- The system is configured to selectively couple, using a gas tight seal, a volume with the solid precursor isotope source and a volume with a collector surface.

Thus, there are three possible constructions:

- The entire volume has a gas tight seal (with the precursor isotope source inside the volume),
- Just the collector surface, not the entire volume, has a gas tight seal (when the precursor isotope source is inside the collector), or
- The system is configured to selectively couple, using a gas tight seal, a volume with the solid precursor isotope source and a volume with a collector surface.

Same page:

Under the first possible construction, a POSITA would have understood the gas-tight seal of this limitation to include a gas-tight seal that selectively fluidly couples the precursor isotope source to a volume, as shown in Figure 4.

Pet. 6:

EX1001, Fig. 4, 14:21-25, 18:21-23. Alternatively, under the second possible construction, this limitation should be construed to require that the precursor isotope source is fluidly coupled to a fully enclosed volume that has a gas-tight seal, such as with Figures 3 and 5.

Petitioner's Evolving Constructions: First Construction

Petition: “The entire volume has a gas tight seal (with the precursor isotope source inside the volume)”

Petition: “gas-tight seal that selectively fluidly couples the precursor isotope source to a volume”

Prelim. Reply: “the claimed generator has a volume with a gas tight seal”

Reply: only argued “selectively fluidly coupled” for third construction

Reply: “(i) the isotope source must be configured to be fluidly coupled to a volume that has a collector surface, (ii) the volume must have both a collector surface and a gas tight seal the Petition's first construction requiring a gas-tight seal on the entire volume of the device”

Petitioner's Evolving Constructions: Second Construction

Pet.: “Just the collector surface, not the entire volume, has a gas tight seal (when the precursor isotope source is inside the collector)”

Pet.: “precursor isotope source is fluidly coupled to a fully enclosed volume that has a gas-tight seal”

Prelim. Reply: “gas tight seal on only the volume defined by the collector surface”

Reply: “the collector surface defines the volume”

Reply: re negative limitation: “no such requirement in the Petition's second construction”

Reply: Petition's second construction “should not be adopted”

Petitioner's Evolving Constructions: Third Construction

Pet.: “The system is configured to selectively couple, using a gas tight seal, a volume with the solid precursor isotope source and a volume with a collector surface”

Prelim. Reply: “the change in the configuration of the generator between the non-fluidly coupled and fluidly coupled configurations is accomplished using a gas-tight seal”

Reply: “fluidly coupled” does not mean “selectively fluidly coupled,” except in third construction

Pet. 5; Paper 8, 2-3 Reply, 2

Modified second construction: “a collector surface with a gas tight seal”

Sur-reply, 2:

The Patent Owner Response (POR) explained that, if the petition challenges were to be considered at all, they should be reviewed according to Petitioner’s “second construction” of the term “a collector surface with a gas tight seal” as interpreted by the Board at institution, under which each ground fails. Remarkably,

POR, 16-17, 21:

Because the plain rules of grammar identify the “collector surface” construction as correct, and no evidence of a POSITA’s understanding dictates otherwise, element [1.C]’s gas-tight seal limitation should be interpreted to require the collector surface have a gas tight seal.

While it is not Patent Owner’s burden to construe claim terms in the first instance, the plain meaning of the claim language indicates that the term “with a gas tight seal” refers to the term it immediately follows in the claim: “a collector surface.”

DI, 19:

On a first read, the phrase “wherein the solid precursor isotope source is configured to be fluidly coupled to a volume including *a collector surface with a gas tight seal*,” could be read to mean that only the collector surface has a gas tight seal as the “collector surface” immediately precedes “with a gas tight seal.” This construction corresponds to the Petitioner’s “second construction.” Under this second “collector surface” construction, (1) the collector surface itself must have a gas tight seal and (2) the isotope source is configured to be fluidly coupled to the volume that has a collector surface.

No Valid Basis to Abandon Second Construction

Reply:

Third, it has now become clear that the second construction with its requirement that the volume be limited to the collector surface is not supported by any disclosed embodiments. POR, 14-15. At his deposition, Dr. Mirzadeh clarified that Figures 3 and 5 have additional volume inside their caps that is included in the sealed volume (i.e., collector vial volume plus cap volume). EX2004, 106:7-107:16.

Mirzadeh:

Q. In your opinion, would a person of ordinary skill in the art, looking at Figures 3 and 5, believe that they satisfy your second construction?

MR. ROSATO: Objection to form, leading.

A. Yes, they cover the same.

Reply, 13; Sur-Reply, 8; EX2004, 107:11-16

Second Construction Eliminates Most Grounds

- ~~Ground 1~~: No argument under second construction
- ~~Ground 2~~: No argument under second construction
- ~~Ground 3~~: DI: Petition does not “provide sufficient evidence and argument” for second construction
- ~~Ground 4~~: Same defect as ground 3
- Ground 5: Failure to show rationale
- ~~Ground 6~~: No argument under second construction
- ~~Ground 7~~: No argument under second construction
- ~~Ground 8~~: Same defect as ground 3
- Ground 9: Same defect as ground 5
- ~~Ground 10~~: Same defect as ground 3
- ~~Ground 11~~: No showing of indefiniteness, and further undermined by new position on reply

POR, 11:

12-13. As recognized by the Board in the institution decision and addressed further below, under a plain reading of the claims “gas tight seal” modifies the “collector surface.” The claims and prior art should be evaluated under that understanding.¹ As discussed above, **doing so effectively eliminates from consideration Grounds 1, 2, 6, 7 and 11.** None of these grounds are based on a plain reading of the claims where “gas tight seal” modifies the “collector surface.”

POR, 1, 11, 21, 26; Sur-reply, 13; DI, 39

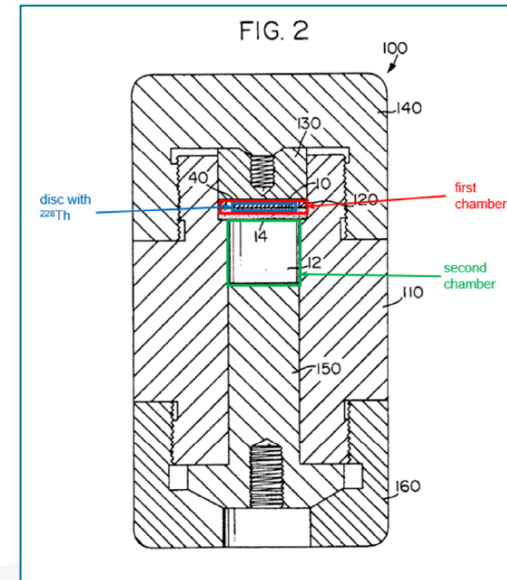
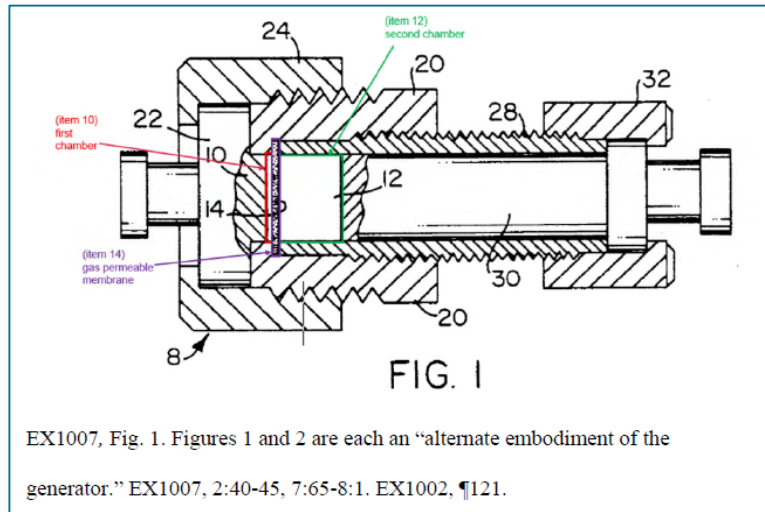
Grounds Arguing Second Construction Fail

Grounds 1-2: No Argument Under Second Construction

As an initial matter, there is no argument in the petition that Hassfjell-Hoff anticipates the claims under any construction where “the gas tight seal” modifies “the collector surface,” including Petitioner’s “second possible construction.” As such, should the Board adopt the correct reading of the claims where “the gas tight seal” modifies “the collector surface,” ground 1 can be rejected on the basis there is no argument advanced in the petition for anticipation under this reading.

As with ground 1, there is no argument in the petition that Hassfjell-Hoff anticipates the claims under any construction where “the gas tight seal” modifies “the collector surface,” including Petitioner’s “second possible construction.” As such, should the Board adopt the correct reading of the claims where “the gas tight seal” modifies “the collector surface,” ground 2 can be rejected on the basis that there is no argument advanced in the petition for anticipation under this reading.

Grounds 3-4: No Showing in Petition



coupled” and limitation 1c). As shown in Figure 2, the solid precursor isotope source 40 is fluidly coupled to the second chamber 12 (a volume) through gas permeable membrane 14.

Norman discloses a collector surface is the sides of the collecting chamber 12. EX1007, 3:8-11 (“Decay of ^{220}Rn to ^{212}Pb (via very short lived polonium-216)

i.e., both plungers 22 and 30 are inserted and secured with end caps 24 and 32, the escape of radon from the generator is prevented.”).

Institution Decision:

surface using a gas tight seal”), the collector surface (i.e., just the interior walls of Norman’s second chamber 12) must have a gas tight seal. We do not understand the Petition to provide sufficient evidence and argument explaining how just Norman’s second chamber 12 has a gas tight seal.

Grounds 3-4: Improper New Argument on Reply

Reply:

and seal cap 140) (citing EX1007, 7:65-8:24)). And plunger 30 is part of the collector surface (item 12) and one of the gas-tight seals in Norman Figure 1, and plunger 150 is the same for Norman Figure 2:

- No expert testimony in support
- Never argued in petition materials
- No defense of argument made in petition

Reply, 18; Sur-reply, 13-14

Ground 5: No Teaching of Proposed Seal

Petition:

Specifically, a POSITA would have been motivated to combine Hassfjell-Hoff and Norman to implement the Hassfjell-Hoff system with Norman's gas tight seal on the collection chamber. See §§III(D)(1), (2) (construction of "fluidly

POR:

The petition provides no explanation as to why or how Norman's plunger/end cap assembly would logically lead to a seal formed between a polyethylene bottle and a "chamfered end of the tube." Only impermissible

Reply abandons petition theory, turns to new, unsupported argument:

necessary. *Id.* And the Petition does not rely on Norman for any structural detail such as a chamfered edge; that is disclosed in Hassfjell-Hoff and common in the art. If PO is arguing that the Petition fails to explain why the connection between

similar to the plunger 30 in Norman Figure 1 and plunger 150 in Figure 2. Because Norman's plungers 30/150 form gas-tight seals with the other sides of second chamber 12, a POSITA would have been motivated to implement Hassfjell-Hoff

Ground 5: Background Art Does Not Provide Seal

Petition:

“there were well-known ways to create a gas-tight seal on the collection chamber, for example using sealed containers that are compatible with radiopharmaceuticals. EX1017, Cover, Figs. 3-9.”

POR:

While Petitioner also cites to U.S. Patent No. 9,281,089 (EX1017) as allegedly teaching “ways to create a gas-tight seal on the collection chamber” (Pet., 68-69 (citing EX1017, Cover, Figs. 3-9)), this assertion finds no support in the cited patent. In fact, as Mr. Conroy explains, the figures from EX1017 do not show a gas tight seal resembling the type of seal proposed by Petitioner. EX2002, ¶73.

Indeed, the examples in that patent do not show such a gas-tight seal. Rather, they discuss containers to prevent escape of line-of-sight radiation like gamma rays, not emanation of radioactive gas (which is not line-of-sight). EX2002, ¶73; see EX1017, 3:28-39.

Reply: no dispute

Pet., 68-69; POR, 38-39

Ground 5: No Rationale

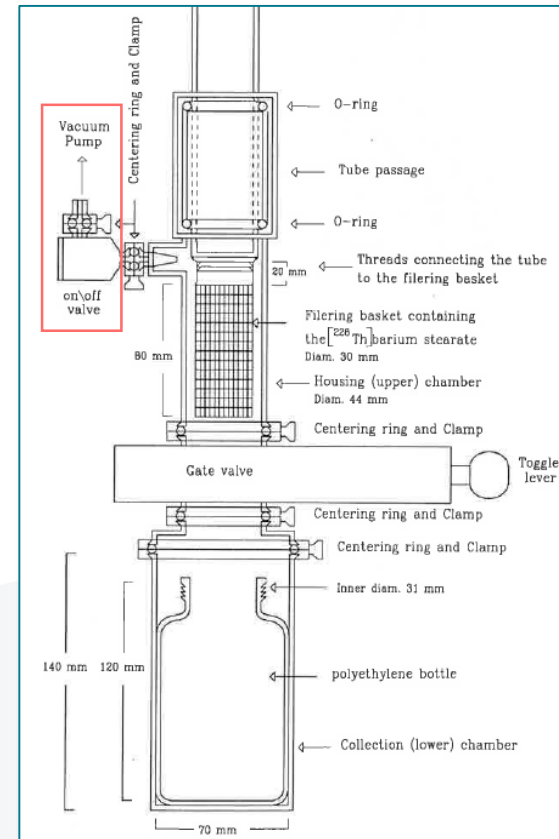
Hassfjell-Hoff:

Petition:

coupled” and limitation 1c second construction). A POSITA would have understood that doing so would have been advantageous because the gas tight seal on the collection chamber of Norman would reduce the possibility of outside contamination or allowing radioactivity to escape the container. EX1007, 2:49-52

POR:

Thus, Petitioner’s proposed modification would not “reduce the possibility of outside contamination or allowing radioactivity to escape the container” (Pet., 68); instead, radioactive ^{220}Rn would freely fill the lower chamber and deposit ^{212}Pb on the bottle’s surface. *Id.*



The generator is shown in Figs 2 and 3. All generator parts were made of stainless steel, and connected to standard high vacuum equipment to avoid leakage of radioactivity to the surroundings.

Pet., 68; POR, 40-41; EX2004, 30:2-6; EX1003, 7, Fig. 2

Ground 5: No Rationale

Reply's unsupported new argument:

41. This argument fails because the motivation for the modification was *to reduce* contamination of the outside of the bottle, not to eliminate it entirely. Pet., 68

outside of the bottle would be greatly reduced. Additionally, having a gas-tight seal on the collection chamber during generation would be useful to *increase the recoverable yield* inside the bottle and reduce the amount lost and unrecoverable.

- No expert testimony in support
- Never argued in petition materials

Reply, 24-25

Ground 5: No Rationale

Hassfjell-Hoff:

About 70% of the radioactivity inside the polyethylene bottle can be easily washed off with approx. 30 ml of distilled water. By increasing the ionic strength of the washing solution or by adding a chelating agent, the yield increases. With a 1.0 M NaCl solution, 99% of the ^{212}Pb can be washed of the walls of the bottle. No contamination from ^{228}Th or ^{224}Ra outside the filter membrane packets has been detected.

Conroy:

teachings. Hassfjell-Hoff teaches that there are no contamination concerns with its system, explaining that “[n]o contamination from ^{228}Th or ^{224}Ra outside the filter membrane packets has been detected.” EX1007, 7. Regarding the emanations from these radioisotopes, ^{220}Rn has a half-life of under 1 minute, and ^{216}Po of less than one second, so as a practical matter the only source of radioactive contamination is ^{212}Pb . But Hassfjell-Hoff teaches that “99% of the ^{212}Pb can be washed of the walls of the bottle” using a simple saline solution. *Id.* Based on these teachings, a

Conroy:

In Exhibit 1003, what happens to the gas emanating from the source when the source is pushed down as far as possible into the container?

A. No, that wouldn't be -- it would be unwise to have those two things coupled.

Q. Why would that be?

A. Well, you're more likely to break the top of the bottle off or create damage to the filtering basket or have what's inside the filtering basket contaminate the surface area if you were to push it that far down. So pragmatically, I don't think it would be wise to push that down.

There is much more danger coming from when you crack out these, these lids like you show here crack very easily and it could contaminate. So I think if you started jamming the tube into there as far as you could go, you'd likely create yourself a few more problems than you'd solve.

EX1003, 7; EX2002, ¶76; EX1023, 217:7-218:24; POR, 41-42; Sur-Reply, 18

Ground 11: No Showing of Indefiniteness

Petition: limitation 1c “three equally possible meanings”

Reply: “Petition’s Second Construction Should Not Be Adopted”

12-13. As recognized by the Board in the institution decision and addressed further below, under a plain reading of the claims “gas tight seal” modifies the “collector surface.” The claims and prior art should be evaluated under that understanding.¹ As discussed above, doing so effectively eliminates from consideration Grounds 1, 2, 6, 7 and 11. None of these grounds are based on a plain reading of the claims where “gas tight seal” modifies the “collector surface.”

Pet., 95; POR, 43-45; DI, 19, 43; Reply, 12; Sur-Reply, 19-20