

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AXION BIOSYSTEMS, INC.,
Petitioner

v.

AGILENT TECHNOLOGIES, INC.,
Patent Owner.

Case IPR2024-01467

U.S. Patent No. 11,906,508

**PETITIONER'S AUTHORIZED REPLY TO
PATENT OWNER'S PRELIMINARY RESPONSE**

TABLE OF CONTENTS

	Page
I. PO CANNOT SATISFY PRONG ONE OF <i>ADVANCED BIONICS</i>	1
II. PO CANNOT SATISFY PRONG TWO OF <i>ADVANCED BIONICS</i>	5

The Board should reject PO's argument for discretionary denial under Section 325(d). *First*, PO cannot satisfy prong one of *Advanced Bionics*. While Xu-752 was cited in an IDS (but never applied by the Office during the '508 patent's prosecution), Jones is new and was not previously before the Office. PO relies on the "substantially the same" portion of § 325(d) for Jones, but neither Jones nor the Petition's arguments about the Xu-752/Jones combination are cumulative of the art and arguments considered during prosecution. *Second*, PO's argument also fails at prong two: After Axion filed its Petition showing Xu-752's anticipation of claims 23-30, PO *disclaimed all of these claims*, thus conceding that the Office made a material error in not applying Xu-752 to the '508 patent claims.

I. PO CANNOT SATISFY PRONG ONE OF *ADVANCED BIONICS*

PO argues that Jones is cumulative of Oka and Yu. POPR at 50-54. PO is wrong on both counts.

Jones is not cumulative of Oka or any arguments about Oka. The POPR (at 51-52) argues that Oka's disclosure is cumulative of Jones's disclosure cited in the Petition for the ADC limitations. Not so. The Petition showed that Jones discloses an impedance measurement system with *parallel ADCs* for measuring the respective cell-substrate impedances of multiple wells *simultaneously*. *E.g.*, Pet. at 32-47, 53-54, 66-67, 70-71. The POPR (at 3) states: "Axion incorrectly argues throughout its Petition" that the claims require "an impedance analyzer which

sequentially measures the impedances of multiple wells *one at a time*.”¹ That is demonstrably incorrect. *See, e.g.,* Pet. at 13, 41-42 (“parallel ADCs for *simultaneously measuring multiple impedances* would have advantageously enabled increased throughput for achieving millisecond-time resolution measurements”); EX1003, ¶173. The Petition never argued that the claims require sequential, one-at-a-time measurements. Rather, the Petition repeatedly cited Jones’s description of parallel ADCs for simultaneously measuring multiple wells. *E.g.,* Pet. at 32-47, 53-54, 66-67, 70-71.

Oka lacks these features—it does not disclose parallel ADCs, nor simultaneous measurements. Oka instead uses a *single ADC* and a switch for sequentially connecting different electrodes to the ADC for *non-simultaneous measurements*. EX1026, 62-63. PO itself recognized this during prosecution, arguing that Oka uses “a switch to connect *the AD-C* to different electrodes at different times” EX1002 at 188. PO also argued during prosecution that “Oka does not include any [ADC] channels in an impedance analyzer.” *Id.* This further confirms the non-cumulative nature of Jones, which plainly discloses ADC channels in an impedance analyzer. Pet. at 32-36, 52, 66-67.

Second, PO argues that Oka’s disclosure is cumulative of Jones’s disclosure

¹ All emphasis is added herein unless noted otherwise.

cited in the Petition for the millisecond time resolution limitation. POPR at 52-53. PO is wrong, as confirmed by the POPR's misleading assertions regarding the Petition. The POPR (at 52) argues that the Petition relies "exclusively" on paragraph [0030] of Jones with respect to the millisecond time resolution limitation. But the Petition shows otherwise. *See, e.g.*, Pet. at 53-55, citing EX1006 (Jones), ¶¶[0003], [0025], [0030], [0038], [0042], Fig. 4. Aside from paragraph [0030], the Petition also relied, for example, on Jones's disclosure in paragraph [0003] of "parallelism to obtain the required throughput" and the use of "single or multiple frequencies," "impedance measurements of varying time periods," and "various measurement rates" for the millisecond time resolution limitation. Pet. at 32-36, 42-46, 53-55.

The Petition cited these portions of Jones for its capability to measure the respective impedances of *each and every well* of a multiwell plate at a millisecond time resolution. *See id.* PO states: "Axion incorrectly argues throughout its Petition" that the claims are "directed to the time required to take *one measurement* of the electrical impedance of *one well*." POPR at 2. This, too, is incorrect. *See, e.g.*, Pet. at 34-36 ("[t]he measurement rate for a single-frequency sampling (rather than a stepped sweep) in Jones for the *entire 96-well plate* would be significantly less than 1.5 seconds") (citing EX1003, ¶¶69-75, detailing Jones's capability "for measuring *all wells/channels of Jones's 96-well plate* at millisecond time resolution"). The Petition never argued that the claims recite the time required for a

single measurement of a single well; rather, the Petition explained how Jones can measure all wells/channels of a multiwell plate at a millisecond time resolution, providing specific examples for 16- and 96-well plates. Pet. at 34-36, 53-55, 63-64.

Oka's system, by contrast, does not satisfy the "millisecond time resolution" limitation at least because Oka uses only the aforementioned *single ADC* and lacks Jones's "parallel impedance measurement channels" for "obtain[ing] the required throughput." EX1006, ¶[0003]. And while Oka describes taking measurements at 200 millisecond intervals (EX1026, 65, 67), PO traversed the Office's rejections relying on this disclosure, arguing that Oka does not describe measuring cell-substrate impedance, or even taking measurements from multiple wells of a multiwell plate. Pet. at 11; EX1002 at 187-97. Indeed, PO confirms, again, that Oka does not even relate to impedance measurement technology. POPR at 51 n.10.

Jones is not cumulative of Yu, and there were no arguments about Yu.

Although cited in an IDS, the '508 patent's prosecution included no arguments about Yu because the Office did not apply Yu in the lone Office Action. EX1002, 153-64. As the Petition noted, and PO agrees, Yu describes taking impedance measurements from a well at 50 millisecond intervals. Pet. at 10, 38; POPR at 53. But Yu does not describe using parallel ADCs in an impedance analyzer, as Jones does, and PO does not suggest otherwise. Pet. at 32-47, 53-54, 66-67, 70-71; POPR at 53-54. In addition, Yu does not describe measuring the impedances of each and every well of

a multiwell plate at a millisecond time resolution, as Jones does. Pet at 32-36, 42-43, 45-46, 53-55. Jones is not cumulative of Yu for at least these reasons.

II. PO CANNOT SATISFY PRONG TWO OF *ADVANCED BIONICS*

The Board need not consider prong two of *Advanced Bionics*, given PO's failure to meet prong one. Nevertheless, for completeness, the Petition also showed that the Office made a material error. Among other things, the Petition explained how PO traversed the lone Office Action that relied on a single prior art reference—Oka—by arguing that Oka failed to teach numerous claimed limitations that Xu-752 describes. Pet. at 11. The Office made a material error by failing to recognize and cite the very close prior art it had in hand, Xu-752—a fact PO has conceded by disclaiming claims 23-30 of the '508 patent in the face of the Petition's Ground 1 (asserting that Xu-752 anticipates claims 23-30). See EX2001; Pet. at 14-31. The POPR concedes that the Petition accurately describes what Xu-752 teaches.

The Petition also described how the Office made a material error by ignoring that the Office had previously applied Xu-752 in an ancestor application (Wang-548) to reject similar claims, limiting the Wang-548 claims to cover only taking measurements at time intervals of less than 20 milliseconds. Pet. at 8-11. And PO cannot credibly dispute that the Office made a material error by failing to find Jones, a prior art reference directed to an impedance measurement system that teaches key limitations of the '508 patent claims.

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on January 24, 2025, a complete and entire copy of **PETITIONER'S AUTHORIZED REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE** has been served in its entirety by e-mail to:

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