

230 from damage while also assisting in providing as stable waveform. Ex. 1002 ¶ 101; *id.* ¶ 83 (stating a POSITA would have been motivated to configure the filter to be implemented in Barber’s system to be a narrow band rejection filter to ensure the appropriate frequency associated with RF power supply 235 are isolated from DC power supply 230).

Patent Owner responds that Hirose does not teach the operating frequency required by claim element 2[d], because the frequency of the RF bias of Hirose “does not ‘correspond[] to’ the relied-on filter circuit 20.” Prelim. Resp. 21–25. In particular, Patent Owner contends that Hirose’s filter, even if viewed as a narrow band rejection filter, is “designed to operate at a frequency shifted from that of the frequency of the RF bias power” (*id.* at 22 (citing Ex. 1006, code (57), 4:22–24, 4:51–5:6, 5:58–62, 6:5–15, Fig. 6)) and, as such, the RF bias power to the substrate does not *correspond* to it (*id.* at 24). Pointing to Dr. Glew’s testimony, Patent Owner further asserts that in Hirose, the resonance point of the filter circuit is increased from 2.0 MHz to 2.25 MHz, whereas the RF bias power is 2MHz. Prelim. Resp. 23–24 (citing Ex. 2002 ¶ 78; Ex. 1006, 4:42–45, 4:62–65, 5:7–10; Pet. 21 n.8); *see also id.* at 24 (stating that Hirose’s filter is “designed at 2.25 MHz as opposed to 2 MHz of the RF power supply 15”); *id.* at 25 (stating Dr. Glew notes that “Hirose’s filter 20 is off resonance with the RF power supply” and citing Ex. 2002 ¶¶ 36, 78).

Patent Owner’s argument, however, presumes that the claim term “providing an RF bias that corresponds to the narrow band rejection filter to the substrate” requires that the frequency of the RF bias must be the same as the frequency at which the filter operates and the frequency of the RF bias cannot be a shift from the frequency at which the filter operates. As support for this interpretation, Patent Owner merely states that the “inventors

explained during prosecution that the claimed filter ‘is a filter that passes all of the frequencies of the [] power supply except within a narrow band centered on the RF frequency of the RF bias.’” *See* Prelim. Resp. 24 (citing Ex. 1052, 1130–31, 1134). We do not understand the claim term to be so limited. The parties are invited to address the construction of this term if they choose.

Based on our review of the present record, we determine Petitioner, relying on the deposition testimony of Dr. Subramanian, has sufficiently shown that Barber and Hirose teach the subject matter recited in claim element 2[d]. *See, e.g.*, Pet. 28 (citing Ex. 1002 ¶ 101; Pet. 15–28). For example, Petitioner has provided sufficient evidence that Hirose teaches a narrow band filter (filter 20) (*see e.g.*, Pet. 22; Ex. 1002 ¶ 81), that is placed between a power supply and an electrode to selectively filter high current output to protect the power supply (*see e.g.*, Pet. 20; Ex. 1002 ¶ 79), and also teaches modifying the filter’s optimum resonance point to adjust plasma process conditions (*see, e.g.*, Pet. 19 (citing Ex. 1006, code (57), 3:45–4:38; Ex. 1002 ¶¶ 77–78)). Additionally, Dr. Subramanian testifies that a person of ordinary skill in the art would have configured Barber’s system such that RF power supply 235 would provide an RF bias to the substrate, where the RF bias that corresponds to the narrow band rejection filter to protect the DC power supply from damage while also assisting in providing as stable waveform. Ex. 1002 ¶ 101; *id.* ¶ 83 (stating a POSITA would have been motivated to configure the filter to be implement in Barber’s system to be a narrow band rejection filter to ensure the appropriate frequency of frequencies associated with RF power supply 235 are isolated from DC power supply 230).

Petitioner has sufficiently shown at this stage of the proceeding that POSITA would have understood that choosing to reject a specific frequency, or a narrow band of frequencies, depending on the bandwidth of RF supply 235 selected in Barber's system would have been a known way to achieve the benefits disclosed in Hirose and known at the time. *See, e.g.*, Pet. 24 (citing Ex. 1002 ¶ 89; Ex. 1006, Figs. 1, 6; Ex. 1023, 7:51–61; Ex. 1013, 4–6; Ex. 1057, 7:23–34; Ex. 1058, 1:63–2:1).

e) Claim element 2[e] - Providing a Magnetic Field

Claim element 2[e] recites “providing a magnetic field to the target.” Ex. 1001, 23:24. Petitioner contends that Barber discloses rotating magnet assembly 280 that produces a magnetic field that penetrates Barber's target 260. Pet. 28–29 (citing Ex. 1005, 6:17–27, 8:66–9:2; Ex. 1002 ¶ 102). Patent Owner does not dispute Petitioner's contentions at this stage of the proceeding. *See generally* Prelim. Resp.

We have reviewed Petitioner's arguments and evidence and determine that Petitioner sufficiently shows Barber discloses the subject matter recited in claim element 2[e].

f) Claim element 2[f] - Wherein Clause

Claim element 2[f] recites “wherein an oxide material is deposited on the substrate, and the insulating film is formed by reactive sputtering in a mode between a metallic mode and a poison mode.” Ex. 1001, 23:25–27.

Petitioner asserts Barber describes depositing silicon dioxide and aluminum nitride. Pet. 29 (citing Ex. 1005, 3:44–55; Ex. 1002 ¶¶ 103–104). Petitioner further asserts that Barber's deposition process discloses forming an insulating film by reactive sputtering in a mode between a metallic mode and a poison mode in multiple ways. Pet. 29–34 (citing, *inter alia*, Ex. 1002 ¶¶ 105–114; Ex. 1005, code (54), 3:44–57, 4:24–26, 6:32–42, 6:51–62, 7:1–

8:12, 7:65–8:5, 8:45–48, Figs. 3, 5); *see, e.g.*, Pet. 30–31 (asserting the curve shown in Barber Figure 3 reflects the behavior of a metallic target fully consuming reactive gas to the behavior of the fully poisoned target). Patent Owner does not dispute Petitioner’s contentions at this stage of the proceeding. We have reviewed Petitioner’s arguments and determine that Petitioner sufficiently shows Barber discloses the subject matter recited in claim element 2[f].

g) Conclusion for the Claim 2

For the reasons stated above, Petitioner has sufficiently shown that Barber and Hirose teach all of the subject matter recited in claim 2 and has articulated a reasonable rationale to combine the teachings of the references to arrive at the subject matter of claim 2. As such, we find that Petitioner’s arguments and evidence are sufficient to show a reasonable likelihood Petitioner would prevail in showing that claim 2 would have been obvious over the combination of Barber and Hirose.

4. Analysis for Claims 3, 4, 6, 8, 10–12, and 21

We have reviewed Petitioner’s arguments and evidence that dependent claims 3, 4, 6, 8, 10–12, and 21 would have been obvious over the combination of Barber and Hirose. Pet. 34–41. Patent Owner does not dispute Petitioner’s challenges to these dependent claims, aside from arguing that Petitioner’s analysis for the dependent claims do not cure the deficiencies in Petitioner’s arguments for claim 2. Prelim. Resp. 61. Based on the preliminary record before us, we find that Petitioner’s arguments and evidence are sufficient to show a reasonable likelihood Petitioner would prevail in proving unpatentability of dependent claims 3, 4, 6, 8, 10–12, and 21.

H. Remaining Asserted Challenges

Petitioner also asserts an additional fifteen obviousness grounds that, collectively, challenge claims 1–21. *See* Pet. 3–5, 41–72. Each challenge is based on the Barber and Hirose in combination with one or more additional references. *Id.* Other than arguing that Barber and Hirose do not teach certain limitations of claim 1 for the same reasons Barber and Hirose do not teach the corresponding limitations of claim 2, Patent Owner does not present any arguments directed specifically to the remaining asserted challenges. *See, e.g.*, Prelim. Resp. 2–61.

Having considered the parties’ arguments and evidence, we determine Petitioner makes a sufficient showing on these challenges.

III. CONCLUSION

For the reasons set forth above, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one challenged claim of the ’657 patent. Thus, we institute an *inter partes* review on all challenged claims and on all grounds presented.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that an *inter partes* review is instituted on each of the grounds asserted in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which shall commence on the entry date of this decision.

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