

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLIED MATERIALS, INC.
Petitioner,

v.

DEMARAY LLC
Patent Owner.

Case IPR2021-00106
Patent No. 7,381,657

**PATENT OWNER'S RESPONSE TO PETITIONER'S NOTICE
REGARDING MULTIPLE PETITIONS**

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As the Board recognizes, “one petition should be sufficient to challenge the claims of a patent in most situations.” PTAB Consolidated Trial Practice Guide (“TPG”) (Nov. 2019) at 59. Petitioner instead filed two parallel petitions on the ‘657 patent challenging the same set of claims with no material differences and none of the exceptions articulated in the TPG. For example, Petitioner clearly can attack all the issues claims of the patent in a single petition; and it does not assert there is any priority dispute. *See Paper 2 generally*. As such, the Board should not institute more than one petition.

Petitioner nevertheless argues that the Board should entertain both of its petitions because it also represents the interest of Samsung and Intel and because only two petitions are filed among the three of them. Paper 2 at 2-3. That argument makes no sense: had Samsung and Intel filed petitions on their own, the Board would have also treated those petitions as either parallel or serial and they would also have to explain why the filing of those follow-on or parallel petitions are justified, including under the *General Plastics* factors.

The purported existence of a “wealth of prior art against the ‘657 patent” is also not an excuse for filing multiple petitions. Were that reason sufficient to justify the filing of multiple petitions, the Board would not have required petitioners who filed multiple petitions to provide “a succinct explanation of the differences between the petitions, why the issues addressed by the differences are material, and why the Board should exercise its discretion to

institute additional petitions if it identifies one petition that satisfies petitioner's burden under 35 U.S.C. § 314(a)." TPG at 60. Petitioner fails to make the requisite showing.

Petitioner instead first asserts that all the art asserted in the two petitions is allegedly "new." Paper 2 at 3. But as explained in the POPRs for IPR2021-00103 and IPR2021-00105, the combinations were used in substantially the same way as the Office has already considered. *See* 325(d) sections the POPRs for IPR2021-00104 and IPR2021-00106. Specifically, the claims were allowed after the applicants traversed the examiner's theory that filter choice was merely a design choice, and explained that filter was important to the proper operation of the claimed reactor system that combines a bipolar pulsed DC power to the target and an RF bias on the substrate. Ex. 1004, 978-79. In particular, the inventors explained that claimed filter needed to both (1) not to filter out too many frequencies and distort the DC pulse waveform and (2) not to allow RF power to couple into the DC power. *Id.*

In both petitions, Petitioner uses the base reference(s) for limitations related to the claimed reactor and relies on the secondary "filter" reference directed a totally different reactor system to argue that a POSITA would have plucked the filter from the secondary "filter" reference and plug it into the claimed reactor system. *See* IRP2021-00104 Pet. 23-27; IPR2021-00106 Pet. 29-32. This is summarized in the table below:

	Petition 1 (IPR2021-00104)	Petition 2 (IPR2021-00106)
reactor	Barber or Barber + Belkind ¹	Licata + Kelly
filter	Hirose	Collins
background knowledge	Ex. 1023, Ex. 1013, Ex. 1057, Ex. 1058, Ex. 1016, Ex. 1006, Ex. 1009, Ex. 1011, Ex. 1012, Ex. 1017, Ex. 1018, Ex. 1019, Ex. 1020, Ex. 1021, Ex. 1010; Ex. 1024-1026, 1062, 1067	Ex. 1023, Ex. 1013, Ex. 1057, Ex. 1058, Ex. 1016, Ex. 1006, Ex. 1009, Ex. 1011, Ex. 1012, Ex. 1017, Ex. 1018, Ex. 1019, Ex. 1020, Ex. 1021, Ex. 1010
Reason-to-combine arguments	<p>to incorporate filter “to prevent the RF power form RF supply 235 from affecting DC supply 230 during <i>Barber’s</i> process” (Pet. 23; <i>see also</i> Pet. 18, 25)</p> <p>“the type of filter is a mere design choice,” and “[t]he filter will necessarily be designed to reflect the frequency of operation” (Pet. 24)</p> <p>“to minimize the filter’s impact</p>	<p>“to prevent the specific RF power from bias power supply 27 from affecting DC power supply 20” (Pet. 29)</p> <p>“the type of filter is a mere design choice” & “[t]he filter will necessarily be designed to reflect the frequency of operation” (Pet. 30)</p> <p>“to minimize the impact the other RF source (and the</p>

¹ Belkind and Kelly are both used to show the existence of a bipolar pulsed DC power system. *Compare* Ex. 1008, Fig. 1 *with* Ex. 1059, Fig. 2.

	<p>on the pulsed-DC waveform (not significantly degrade the waveform signal through filtering) while still protecting the DC supply 230 from the specific frequency signals of RF supply 235” Pet. 25</p> <p>“to prevent RF power from RF supply from damaging DC supply 230, and to reduce interference so that a stable waveform is provided to achieve optimal film deposition ...” (Pet. 25)</p> <p>implementations “achieved through using known design/engineering skills” (Pet. 27)</p>	<p>filter itself) would have on the pulsed-DC waveform (e.g., not filter out the DC waveform signals while still protecting the DC supply 20 from the specific frequency signals of RF bias power supply 27” (Pet 30)</p> <p>“the use and benefits of filters in deposition systems/processes to block interference/current from one power supply from another power supply was known, and thus would have been in the mind of a POSITA ...” (Pet. 30)</p> <p>implementations “achieved through the use of known ... design, and relevant skills...” (Pet. 31)</p>
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Regarding Petitioner’s purported difference—that Barber/Barber-Belkind does not disclose the use of a filter in a claimed reactor system, while Licata discloses an RF filter with a DC power supply (Paper 2 at 3)—Petitioner

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