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MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			MC GINTY, DOUGLAS J	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PHILIP EDWARD MAY, MARK JAMES,
PIOTR WIERZCHOWIEC, STEPHEN BAIN,
PAUL CRAIG BROOKES, EDGAR KLUGE, LI WEI TAN,
DAVID SPARROWE, and MAGDA GONCALVES-MISKIEWICZ

Appeal 2019-003548
Application 14/947,410
Technology Center 1700

Before MARK NAGUMO, KAREN M. HASTINGS, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

ROESEL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3–22, 24, and 28–43. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Merck Patent GmbH. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to a formulation comprising an organic semiconducting compound. The formulation can be used as conducting ink for the preparation of organic electronic devices, such as OLED devices. Spec. 1:6–12. Claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. Formulation comprising one or more organic semiconducting compounds (OSC), and one or more organic solvents, wherein said formulation has a viscosity at 25°C in the range of 0.5 to 9.5 mPas and wherein the boiling point of the solvent is at most 400°C.

REFERENCES

The prior art relied upon by the Examiner is James et al., WO 2009/109273 A1, published September 11, 2009 (“James”).

REJECTION

The Examiner maintains the following rejection under pre-AIA 35 U.S.C. § 103: claims 1, 3–22, 24, and 28–43 over James.²

² The Examiner also maintains a provisional non-statutory double patenting rejection, which Appellant does not challenge on appeal. *See* Appeal Br. 5 (“it would be premature to take positive action, such as filing a terminal disclaimer, at this time”). We do not reach the provisional rejection, other than to note that Application No. 15/266,532 has since issued as Patent No. 10,256,408 (Apr. 9, 2019).

OPINION

Independent Claim 1

The Examiner finds that James teaches a formulation comprising one or more organic semiconducting compounds (OSC) and one or more organic solvents, as recited in claim 1. Final Act. 4. Regarding the boiling point limitation of claim 1, the Examiner asserts that James teaches “[p]arameters of the formulation” (*id.*), citing James’ disclosure that “the solvent, or in case of a solvent blend the highest boiling solvent of the solvent blend, has a boiling point < 400° C at 1 Torr.” James, 11:27–28. Regarding the viscosity limitation of claim 1, the Examiner acknowledges that James teaches viscosities of greater than 10 cP (mPas) at 25° C, but relies on James’ teaching of other embodiments having viscosities less than 10 cP (mPas).³ Final Act. 4–5 (citing James, 2:22–24, 15:13–22, 32:29–32, 33:1).

Appellant challenges the Examiner’s obviousness rejection, arguing that, by requiring that its solvents have a viscosity of more than 10 mPas, James “directs one of ordinary skill in the art away from the formulations as claimed” having a viscosity of 9.5 mPas or less. Appeal Br. 3. Appellant additionally argues that “[t]here are no formulations with one or more OSC compounds disclosed at these cited portions of James (or elsewhere) which have a viscosity of less than 10 cP.” *Id.* at 4 (emphasis omitted).

After considering Appellant’s briefs, the Examiner’s Answer, the cited teachings of the reference, and the record as a whole, we determine that Appellant does not identify reversible error in the Examiner’s decision to reject claim 1 over James.

³ Appellant and the Examiner agree that 1 cP (centipoise) is equal to 1 mPas (milli-Pascal second). Appeal Br. 3; Final Act. 4; Ans. 7.

We agree with the Examiner (Ans. 7–8) that James discloses formulations within the viscosity limitation of claim 1 by disclosing “formulations with a viscosity of < 10 [mPas]” and that such viscosity “is often required e.g. for spin coating and standard IJP [ink jet printing] techniques.” James, 2:2–3, 2:22–24. Appellant asserts that these disclosures are “part of the Background discussion of James, not part of the disclosure of the James invention.” Reply Br. 1. Appellant’s assertion is not a persuasive argument against the Examiner’s rejection. For purposes of determining whether Appellant’s claimed invention would have been obvious in view of James, the reference’s disclosure of background information is no less relevant than its disclosure of the invention. *In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012) (“A reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.”).

Appellant additionally argues that the cited disclosure of James “relates to printing processes in general and is not to a specific application of printing with OSC formulations.” Reply Br. 1. We disagree. The above-quoted disclosures are in the context of James’ discussion of “printing an OSC material efficiently.” James, 1:32–33.

Still further, Appellant argues that “[i]t would be evident to one of ordinary skill in the art that the viscosity of the total composition in James would actually be even higher than the more than 10 cP required for just the solvent.” Reply Br. 2 (emphasis omitted). Appellant’s argument pertains to James’ description of his invention, and does not address James’ disclosure of “formulations with a viscosity of < 10 cP, like for example from tetralin or xylene solutions” nor James’ teaching that “[a] low viscosity (< 10 cP) is

often required for spin coating and standard IJP techniques.” James, 2:2–3, 2:22–24. We agree with the Examiner that the viscosities discussed in the quoted excerpts are “the viscosities of the formulations of functional material, i.e., the organic semiconductor compounds (OSC), and the solvent, not just the solvent alone.” Ans. 8. We also agree with the Examiner that the tetralin and xylene solvents that James discloses as part of a low viscosity (<10 cP) formulation meet the boiling point limitation of claim 1. *Id.* at 9; James, 2:2–3, 32:15, 32:31.

We are not persuaded by Appellant’s argument that James teaches away from OSC formulations having a viscosity less than 9.5 mPas. Appeal Br. 3; Reply Br. 3. We agree with the Examiner that “[w]hile James may teach higher viscosities (> 10 cP) for flexographic and gravure printing, the reference does not ‘teach away’ from use in spin coating and standard IJP techniques at low viscosities.” Ans. 9; James, 2:22–24. *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 738 (Fed. Cir. 2013) (“A reference does not teach away, . . . if it merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into the invention claimed.”).

Accordingly, we sustain the Examiner’s rejection of claim 1 over James.

Dependent Claims 3–22, 24, and 28–43

Appellant presents no arguments specifically directed to the dependent claims separate from its arguments regarding independent claim 1. Accordingly, we sustain the Examiner’s rejections of the dependent claims for the reasons discussed above regarding independent claim 1.

CONCLUSION

The Examiner's rejection is affirmed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3-22, 24, 28-43	103	James	1, 3-22, 24, 28-43	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED