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ROHM AND HAAS ELECTRONIC MATERIALS LLC c/o DUPONT SPECIALTY PRODUCTS USA, LLC P. O. Box 2915 974 Centre Road, Chestnut Run Plaza 721-2342 Wilmington, DE 19805			DANIELS, MATTHEW J	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KRISHNA BALANTRAPU, ROBERT K. BARR,
and BRIAN D. AMOS

Appeal 2019-001989
Application 14/141,488
Technology Center 1700

Before JEFFREY T. SMITH, BEVERLY A. FRANKLIN, and
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–12. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as The Dow Chemical Company through its wholly owned subsidiary, the assignee of the application Rohm and Haas Electronic Materials, LLC. Appeal Br. 2.

STATEMENT OF THE CASE

Appellant's invention is generally directed to a method for forming images on substrates by inkjet printing with actinic radiation curable resist compositions using a transfer film. (Spec. 1.)

Claim 1 illustrates the subject matter on appeal and is reproduced below:

1. A method comprising:
 - a. selectively inkjetting a 100% solids hot melt resist composition comprising one or more waxes, one or more acrylate functional monomers free of acid groups and one or more radical photoinitiators adjacent a first surface of an actinic radiation transparent flexible film to form a continuous pattern on the first surface of the actinic radiation transparent flexible film;
 - b. applying the actinic radiation transparent flexible film with the 100% solids hot melt resist composition having the continuous pattern to a surface having irregularities of a three dimensional substrate, the first surface of the actinic radiation transparent flexible film with the 100% solids hot melt resist composition having the continuous pattern is adjacent the surface having irregularities of the three dimensional substrate, wherein the 100% solids hot melt resist composition contacts the surface having the irregularities and the actinic radiation transparent flexible film follows contours of the surface having irregularities of the three dimensional substrate;
 - c. applying actinic radiation to a second surface of the actinic radiation transparent flexible film opposite the first surface with the 100% solids hot melt resist composition having the continuous pattern to cure the 100% solids hot melt resist composition, wherein the second surface of the

actinic radiation transparent flexible film is free of the 100% solids hot melt resist composition; and

d. separating the actinic radiation transparent flexible film from the cured 100% solids hot melt resist composition having the continuous pattern with the cured 100% solids hot melt resist composition having the continuous pattern adhering to the surface having irregularities of the three dimensional substrate.

App. Br. 13, Claims App.

The following rejections are presented for our review: ²

I. Claims 1–10 and 12 rejected under 35 U.S.C. § 103(a) as unpatentable over Celeste (US 3,526,504, issued Sept. 1, 1970) in view of Cheetham (US 2010/0129754 A1, published May 27, 2010).

II. Claim 11 rejected under 35 U.S.C. § 103(a) as unpatentable over Celeste, Cheetham, and Friel (US 4,127,436, issued Nov. 28, 1978).

III. Claims 1–10 and 12 rejected under 35 U.S.C. § 103(a) as unpatentable over Celeste, Cheetham in view of Batchelor (US 4,451,329, issued May 29, 1984).

² The complete statements of the rejections on appeal appear in the Final Office Action (Final Act. 2–11) are reproduced appeal in the Examiner’s Answer. (Ans. 3–18.)

IV. Claim 11 rejected under 35 U.S.C. § 103(a) as unpatentable over Celeste, Cheetham, Batchelor, and Friel.

V. Claims 1–10 and 12 rejected under 35 U.S.C. § 103(a) as unpatentable over Cheetham in view of Celeste.

OPINION

After review of the respective positions provided by Appellant and the Examiner, we REVERSE the Examiner's rejections under 35 U.S.C. § 103(a). We refer to the rejections on appeal as presented in the Examiner's Final Office Action (Final Act. 2–11) for our discussion.

The Examiner finds Celeste teaches a process for laminating a photosensitive layer on a carrier onto the surface of an article, followed by a patterning process and development. (Final Act. 3; Celeste 2 ll.18–35.) The Examiner finds Celeste is silent about selectively inkjetting a continuous pattern of a resist comprising 100% solids hot melt resist and the resist composition comprising a wax, an acrylate functional monomer free of acid groups. (Final Act. 3.) The Examiner finds Cheetham is evidence that selective inkjetting of this composition is conventional. The Examiner finds Cheetham's inkjet resist composition contains a wax, a radical photoinitiator, and an acrylate functional monomer free of acid groups. The Examiner finds Cheetham's resist also includes pigments and may be 100% solids at room temperature. (Final Act. 3.) The Examiner concludes:

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the Cheetham inkjetting and ink jettable resist composition into Celeste because (a) Cheetham provides an improvement specifically directed at resolving problems in the

traditional lamination and development of dry film photoresist ([0004]-[0009]), which is what Celeste teaches, therefore the Cheetham process (including the composition and inkjet application) are an improvement upon the Celeste process by eliminating the exposure and development steps, or (b) Celeste teaches a process for forming a patterned film on a surface by exposure through a film and development (removal of uncured portions), and one of ordinary skill in the art would have recognized that the Cheetham inkjetting and photoresist composition to be a substitutable alternative process for laminating and adhering a photoresist pattern of the desired configuration directly to the surface of the article.

(Final Act. 3–4.)

The dispositive issue on appeal is:

Did the Examiner err in determining that it would have been obvious to perform Celeste’s process wherein the carrier/support is printed upon by utilizing the inkjet resist composition containing a wax, a radical photoinitiator, and an acrylate functional monomer free of acid groups, as described by Cheetham, to arrive at the method of independent claim 1?

We answer this question in the affirmative.

Appellant argues that one of ordinary skill in the art would not have had any reason or motivation to modify Celeste’s process by selectively applying Cheetham’s inkjet formulation to Celeste’s polyethylene terephthalate (PET) support film and then apply it to an article. (App. Br. 5–6.) Appellant argues that the combination of Celeste and Cheetham, as proposed by the Examiner, fails to teach or suggest all the elements of independent claim 1 because the combination would have suggested forming an image on the PET substrate using Cheetham’s hot melt compositions in place of Celeste’s image-bearing transparency. (App. Br. 5–7.)

The Examiner has not established that the systems of Celeste and Cheetham are compatible. Celeste is directed to methods of laminating to a solid surface a dry, flexible photosensitive layer of a uniformly photo-crosslinkable organic polymer composition to a flexible polymer film support where imaging is done with an image bearing transparency. (Celeste col. 1, l. 66 to col. 2, l. 17.) Cheetham applies the inkjet hot melt compositions directly to a substrate. (Cheetham ¶¶ 26, 33.) Cheetham's hot melt inkjet compositions and methods eliminate Celeste's lamination apparatus, support films and image-bearing transparencies of the lamination methods and reduce the number of process steps of the lamination process. (Cheetham ¶¶ 6, 7.) Moreover, the Examiner has not directed us to evidence that indicates that Cheetham's hot melt resin composition is suitable for Celeste's image transfer process. Based on the evidence presented in the present record, we agree with Appellant that a person of ordinary skill in the art would not have sought Cheetham's teachings to modify Celeste's process. (Appeal Br. 5–6.)

Accordingly, we do not sustain the rejection of claims 1–10 and 12 (Rejection I) for the reasons presented by Appellant and those given above.

Appealed Rejections II–V rely on the combination of Celeste and Cheetham to reject claims 1–12, some in combination with additional prior art references. The Examiner cited the additional references to address limitations not included in the dispositive issue. Accordingly, because all rejections are based on the combined teachings of Celeste and Cheetham, we also do not sustain these rejections for the reasons presented by Appellant and given above.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-10, 12	103(a)	Celeste, Cheetham,		1-10, 12
11	103(a)	Celeste, Cheetham, Friel		11
1-10, 12	103(a)	Celeste, Cheetham, Batchelor		1-10, 12
11	103(a)	Celeste, Cheetham, Batchelor, Friel		11
1-10	103(a)	Cheetham, Celeste		1-10, 12
Overall Outcome				1-12

REVERSED