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| EXAMINER |
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| WALTERS JR, ROBERT S |

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* CURTIS L. NELSON, CARY G. ADDINGTON,
JIMMY PEREZ, and JOHN M. KOEGLER, III

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Appeal 2011-013242
Application 10/867,046
Technology Center 1700

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Before EDWARD C. KIMLIN, CHUNG K. PAK, and
ROMULO H. DELMENDO, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

## DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 3-5, 9-15, 19-22, 24-30, 33-37, 39-42, and 89-105. We have jurisdiction under 35 U.S.C. § 6(b). Claim 1 is illustrative:

1. A method, comprising:

treating a first area of a substrate layer by exposing the first area to laser energy which ablates an upper surface of the substrate layer, thereby increasing an affinity of the upper surface of the substrate layer within the first area for a fluid having a solution of conductive particles;

treating a second area of the upper surface of the substrate layer contiguous with a first area with laser energy such that the second area repels the fluid, in which the laser energy is scanned across the upper surface of the substrate layer without moving a source of the laser energy or the substrate layer, a field lens moving during scanning of the laser energy such that the laser energy remains substantially inline with an optical center of the field lens; and

dispensing the fluid onto the upper surface.

The Examiner relies upon the following references as evidence of obviousness:

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|---|---|---|
| Kirch et al. (Kirch) | US 4,923,772 | May 8, 1990 |
| Griffith et al. (Griffith) | US 2002/0090565 A1 | Jul. 11, 2002 |
| Kian et al. (Kian) | US 2002/0110944 A1 | Aug. 15, 2002 |
| Macler et al. (Macler) | US 2004/0046807 A1 | Mar. 11, 2004 |
| Caudle et al. (Caudle) | US 2004/0073200 A1 | Apr. 15, 2004 |
| Sekiya | US 2004/0201648 A1 | Oct. 14, 2004 |
| Kobayashi | US 2005/0112810 A1 | May 26, 2005 |

Sirringhaus et al. (Sirringhaus) WO 2001/46987 A2 Jun. 28, 2001

Lankard et al., "Excimer Laser Ablation of Polyimide in a Manufacturing Facility," *Applied Physics A 54*, 355-359 (1992).

Sigurdsson et al., "Surface Properties of Polymers Treated with Tetrafluoromethane Plasma," *Journal of Applied Polymer Science*, Vol. 66 1591-1601 (1997).

Appealed claims 90 and 91 stand rejected under 35 U.S.C. § 112, first paragraph, written description requirement. The appealed claims also stand rejected under 35 U.S.C. § 103(a) under a number of rejections, all of which

cite a combination of Kobayashi and Macler. The thirteen rejections under § 103 are listed at pages 10-11 of Appellants' principal Brief.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejections under § 103 for the reasons set forth in the Answer, which we incorporate herein, and we add the following for emphasis only. We will not, however, sustain the Examiner's rejection under § 112, first paragraph.

Concerning the rejection of claims 90 and 91 under § 112, first paragraph, we agree with Appellants that their Specification, particularly at paragraph 15, fairly describes to one of ordinary skill in the art that a combination of two treatments that can be used to selectively pattern a surface encompasses performing the two treatments in a treated area in any order and that one of the treatments may be a laser treatment and the other treatment a plasma treatment. It is not necessary that the claim recitation have literal support in the Specification.

We now turn to the § 103 rejections. There is apparently no dispute that Kobayashi, like Appellants, discloses the laser treatment of selected areas of a surface to affect its affinity for a fluid, and treating an adjacent area with a non-wetting polymer layer, and then ejecting droplets of a fluid on the surface to form a solid, conductive region. As recognized by the Examiner, Kobayashi does not teach exposing both the first and second areas of the surface to laser energy. However, as pointed out by the

Examiner, Macler discloses that by controlling the properties of laser radiation both wetting and non-wetting areas of a polymer surface may be effected (*see* claims 33 and 34). Accordingly, based on the collective teachings of Kobayashi and Macler, we find no error in the Examiner's legal conclusion that it would have been obvious for one of ordinary skill in the art to modify the method of Kobayashi by substituting laser radiation for the application of a non-wetting polymer layer. We find no merit in Appellants' argument that Macler does not teach the surface treatment of contiguous areas. As emphasized by the Examiner, Kobayashi is relied upon for teaching treating contiguous areas of a surface to have a different wettability. Appellants have presented no convincing argument why it would have been nonobvious for one of ordinary skill in the art to employ a laser radiation to form hydrophilic and oleophilic contiguous areas on the surface of Kobayashi's substrate.

Concerning the claim requirement that a field lens moves during scanning of the laser energy, Appellants have not refuted the Examiner's rationale that "Figure 1 of Lankard clearly shows scanning of the mirror, homogenizer and field lens together to accomplish scanning of the laser across the substrate" and "after which the substrate is then moved to scan the beam across another unit cell" (Ans. 24, second para.).

The remaining arguments advanced by Appellants have been adequately addressed by the Examiner.

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

In conclusion, based on the foregoing, the Examiner's rejection of claims 90 and 91 under § 112, first paragraph, is reversed. The Examiner's rejection of the remaining claims on appeal under § 103 is affirmed. Since the Examiner has not rejected claims 90 and 91 under § 103, the Examiner's decision rejecting the appealed claims in affirmed-in-part.

The decision of the Examiner is affirmed-in-part.

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

AFFIRMED-IN-PART

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