The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER KIAN-HOON HO and
VICTOR ALEXANDER LIFTON

Appeal 2007-1764
Application 10/391,320
Technology Center 1700

Decided: September 10, 2007

Before BRADLEY R. GARRIS, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 1, 4, 5, 9, 11, 12, and 26-32.[1] We have jurisdiction under 35 U.S.C. § 6.

[1] The Examiner indicates that claim 10 has been canceled (Answer 3).

Claim 1 is illustrative:

1. An apparatus comprising:

a first polymer layer carrying positively charged moieties and a net positive charge, the first polymer layer including a member selected from the group consisting of poly(diallyldimethylammonium), poly(diallylammoniurn), and poly(allylammonium);

a second polymer layer carrying negatively charged moieties and a net negative charge, the second polymer layer including poly(3,4-ethylenedioxythiophene); and

a dielectric substrate;

said first and second polymer layers constituting a multilayer coating on said dielectric substrate.

The Examiner relies upon the following references:

Rubner	US 5,518,767	May 21, 1996
Onda	US 6,020,175	Feb. 1, 2000

Peter K. H. Ho, *Molecular-Scale Interface Engineering for Polymer Light-Emitting Diodes*, Nature, vol. 404, 481-484 (2000).

Appellants' claimed invention is directed to an apparatus that includes a first polymer layer carrying positively charged moieties and a net positive charge, and a second polymer layer carrying negatively charged moieties and a net negative charge wherein the first and second polymer layers constitutes a multilayer coating on a dielectric substrate.

Appealed claims 1, 5, 9, 11, 12, and 26-32 stand rejected as unpatentable under 35 U.S.C. § 103(a) over Onda in view of Ho; and claim 4 stands rejected as unpatentable under 35 U.S.C. § 103(a) over Onda in view of Ho and further in view of Rubner.

Appellants have indicated that "[t]his Reply Brief (filed November 20, 2006) replaces Appellants' Brief which was filed on July 3, 2006" (Br. 1). Consequently, we will limit our discussion to Appellants' position presented in the Reply Brief. [2] We have considered the Examiner's position as presented in the Answer mailed September 19, 2006. Appellants have grouped the arguments for the rejected claims together. Accordingly, all of the claims stand or fall together. [3]

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in full agreement with the Examiner that the claimed subject matter is unpatentable over the cited prior art. Accordingly, we will sustain the Examiner's rejections for the reasons set forth in the present record, and we add the following for emphasis only.

The Examiner properly determined that Onda teaches a dielectric support material that is coated with multilayer thin films formed by a layer-by-layer process comprising coating the solid support with alternating layers of ionic polymers having opposite net electrical charges (Answer 3-4).

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[2] We will reference this document as "Br" in this decision.
[3] Regarding the subject matter of claim 4, Appellants rely on the position presented in response to the rejection over Onda in view of Ho. Consequently, the subject matter of claim 4 will stand or fall with independent claim 1 from which it depends.

Onda discloses the positively charged polymer may be poly(diallyldimethylammonium) and that organic polymer ions such as those derived from polythiophene can also be used in the present invention (col. 4, ll. 48-51). Onda discloses the suitability of using mixtures of polymer ions (complexes) for formation of the coating solution (Onda, col. 5, l. 58- col. 6, l. 25). The Examiner recognized that Onda did not specify the use of poly(3,4-ethylene dioxythiophene) in the negatively charged layer. The Examiner determined that Ho teaches polythiophene conductive polymer complex, specifically poly(3,4-ethylene dioxythiophene)-poly(styrene sulfonate), may be used as a conductive anionic material in a layer-by-layer process to form multilayer films (Answer 4). Appellants did not dispute that Onda teaches a dielectric support material that is coated with multilayer thin films Onda and Ho teaches polythiophene conductive polymer complex.

Appellants' principal argument is "Onda's listing at col. 4, lines 48-51 of 'polymer ions such as those derived from polythiophene' in the last-quoted passage stands alone and is not, as the Examiner argues, a statement or suggestion that both anionic and cationic forms of 'polythiophene' exist or can be used." (Br. 15). Appellants also argue there is no suggestion or motivation to combine the teachings of Onda and Ho (Br. 16-20).

We do not find Appellants' arguments persuasive. Onda teaches a dielectric support material that is coated with multilayer thin films. Onda teaches organic polymer ions such as those derived from polythiophene are suitable for use in the invention. A person of ordinary skill in the art would

have recognized that poly(3,4-ethylene dioxythiophene)-poly(styrene sulfonate) was an anionic conductive polymer complex. The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). The obviousness determination "not only permits, but requires, consideration of common knowledge and common sense." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.,* 464 F.3d 1356, 1367-68, 80 USPQ2d 1641, 1650 (Fed. Cir. 2006). "[A] prior art reference must be 'considered together with the knowledge of one of ordinary skill in the pertinent art." *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). As stated above, Onda discloses suitability of using mixtures of polymer ions for formation of the coating solution. As such, a person of ordinary skill in the art would have reasonably expected that ionic polymer complexes could be utilized in the invention of Onda. Appellants have not argued that a person of ordinary skill in the art would have recognized that poly(3,4-ethylene dioxythiophene)-poly(styrene sulfonate) was not an anionic conductive polymer complex suitable for use in the formation of multilayer thin films formed by a layer-by-layer process.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

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

tf/ls

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