

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SANG KYUN LEE
and KI YONG SONG

Appeal 2008-2192
Application 10/732,227
Technology Center 1700

Decided: June 27, 2008

Before EDWARD C. KIMLIN, JEFFREY T. SMITH, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-9. A copy of illustrative claim 1 is appended to this decision.

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

Mack	4,716,098	Dec. 29, 1987
Penco	5,171,761	Dec. 15, 1992

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Malik	6,027,853	Feb. 22, 2000
Elian	6,703,190 B2	Mar. 9, 2004

Appellants' claimed invention is directed to a composition and process for forming a pattern of a conjugated polymer. The composition comprises a precursor polymer having the recited repeating unit and a photobase generator.

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

- (a) claims 1-6 and 9 over Elian in view of Penco,
- (b) claim 7 over Elian in view of Penco and Mack, and
- (c) claim 8 over Elian in view of Penco and Malik.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. In so doing, we find ourselves in agreement with Appellants that the Examiner has failed to establish a prima facie case of obviousness for the claimed subject matter. Accordingly, for essentially the reasons expressed by Appellants, we will not sustain the Examiner's rejections.

Elian, as emphasized by Appellants, discloses a pattern-forming resist composition comprising a polymer which changes polarity upon exposure to an acid, a thermal acid generator and a photobase generator. The polymer composition is uniformly heated to release acid in the composition, and is also imagewise exposed to light to produce a base in the exposed areas. The base scavenges the released acid in the light exposed areas, leaving the polymer in the unexposed areas to undergo a change in polarity by exposure to the acid. The change in the polarity of the polymer from hydrophobic to

hydrophilic in the unexposed areas allows the unexposed areas to be dissolved away.

The Examiner acknowledges that Elian does not disclose the presently claimed precursor polymer. The Examiner cites Penco for citing polyphenylene ethers (PPE), and concludes that it would have been obvious for one of ordinary skill in the art to employ the PPEs of Penco in the composition of Elian.

The flaw in the Examiner's rejection is that it does not establish that the PPEs of Penco would operate in the system of Elian, i.e., the Examiner has not established that the PPE of Penco changes polarity when exposed to an acid and then becomes soluble in a developer. Consequently, the Examiner has not established that one of ordinary skill in the art would have had the requisite reasonable expectation of success when using the PPE of Penco in the process of Elian.

Furthermore, the Examiner has not refuted Appellants' argument that the PPE of Penco does not correspond to the claimed precursor polymer inasmuch as the PPE includes an ether moiety whereas the claimed precursor does not. The Examiner responds that "[w]hile appellant [sic] has argued that these compounds do not meet the limitation for the polymer precursor, one compound of the few related compounds disclosed is preferred by the instant application for this compound, therefore, it is the position of the examiner that the precursor compounds of Penco do meet the instant claim limitations" (sentence bridging pages 8 and 9). However, the ambiguity of this statement falls far short of refuting the detailed analysis offered by Appellants with respect to the difference in chemical structures between the claimed precursor polymer and the PPE of Penco.

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The Examiner's additional citation of Mack and Malik for dependent claims 7 and 8, respectively, does not remedy the basic deficiency of the combination of Elian and Penco outlined above.

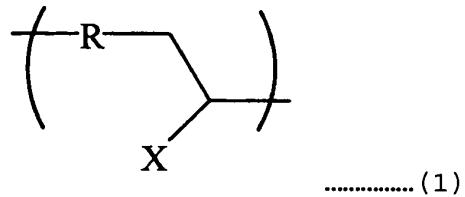
In conclusion, based on the foregoing, we are constrained to reverse the Examiner rejections.

REVERSED

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1. A composition for forming a pattern of conjugated polymer, comprising a precursor polymer having a repeating unit represented by the following formula (1) and a photobase generator:



wherein,

R is an aromatic monocyclic hydrocarbon, an aromatic polycyclic hydrocarbon, an acyclic unsaturated hydrocarbon or a monocyclic unsaturated heterocyclic compound; and

X is Br, Cl or I.