

**THIS OPINION WAS NOT WRITTEN FOR PUBLICATION**

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** HYMAN R. LUBOWITZ and CLYDE H. SHEPPARD

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Appeal No. 95-3097  
Application 07/639,051<sup>1</sup>

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ON BRIEF

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Before JOHN D. SMITH, GARRIS and ELLIS, **Administrative Patent Judges**.

ELLIS, **Administrative Patent Judge**.

**DECISION ON APPEAL**

This is an appeal from the examiner's final rejection of claims 5, 6, 9, 10, 12, 18 through 20, 27, 28, 30, 32, 34 through 37, 40, 41, 43 through 46, 54 through 57, 63 through 66 and 69. Claims 11, 16, 29, 31, 33, 42, 67, 68, 70 and 71 are also pending, however, the examiner has now withdrawn the rejection

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<sup>1</sup> Application for patent filed January 9, 1991.

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and indicated that these claims would be allowable when provided in an independent form. Answer, pp. 2-3. Claims 1 through 4, 7, 8, 13 through 15, 17, 21 through 26, 38 through 39, 47 through 53 and 58 through 62 have been canceled.

Claims 5, 63, 65 and 66 are illustrative of the subject matter on appeal and are attached as an appendix to this decision.

The references relied on by the examiner are:

Edmonds et al.	(Edmonds)	3,354,129	Nov. 21, 1967
Fischer et al.	(Fischer)	4,649,080	Mar. 10, 1987
Rüsseler et al.	(Rüsseler)	5,066,776	Nov. 19, 1991

(filed Aug. 13, 1990)

Claims 9, 10, 12, 18 through 20, 27, 28, 30, 32, 34 through 37, 40, 41, 43 through 46, 54 through 57, 63 through 66 and 69 stand rejected under 35 U.S.C. § 103 as being unpatentable over Edmonds in view of Fisher.<sup>2</sup> Claims 5 and 6 stand rejected under

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<sup>2</sup> Although included in the final office action, the examiner inadvertently omitted claim 9 from the rejection in the Answer. Answer, p. 4. The appellants have treated the rejection as if claim 9 is included and we shall do the same. We also point out that although the examiner indicated on p. 2 of the Answer that the rejection of claim 16 was withdrawn, said claim was, nevertheless, included in the rejection on p. 4 of the Answer. Since claim 16 has the same limitation of "i is 2" as those claims from which the rejection was withdrawn, we have considered the rejection with respect to claim 16 to be withdrawn.

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35 U.S.C. § 103 as being unpatentable over Edmonds in view of Fisher and in further view of Russeler.<sup>3</sup>

Having carefully considered the entire record which includes the specification, the appellants' Brief (Paper No. 19) and the examiner's Answer (Paper No. 20), we find ourselves in substantial agreement with the appellants' position.

Accordingly, we **reverse** both rejections for the reasons set forth in the Brief and comment only briefly.

As developed in the appeal Brief, the Fischer patent does not teach or suggest the basic structure of an end cap monomer having the claimed formula "<sub>Ohtsuka</sub>-Ar-X." Fischer discloses several imide structures in cols. 2-3, but we do not find any disclosure of the claimed monomers. Rather, we find that the examiner is asking us to believe that those of ordinary skill in the art would have inferred that the imide-containing formulas taught by Fischer could have been used to build an end-capped monomer as described in the appellants' claims. Answer, p. 6. However, even if these persons would have made such inferences, we point out that Fischer teaches that the monomers are initiators of the cross-linking reaction. Thus, in our opinion,

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<sup>3</sup> The examiner erroneously included claims 7 and 8 in the rejection. Answer, p. 5. Claims 7 and 8 were canceled by amendment filed August 8, 1994 in Paper No. 16.

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Fisher would have suggested that the imide-containing monomers would keep the reaction going, and not act as end cappers. Accordingly, we do not find that the examiner has established through the use of factual evidence or sound scientific reasoning that the claimed compositions would have been obvious to one person of ordinary skill in the art at the time the application was filed. A conclusion of obviousness must be based on facts, not unsupported generalities. *In re Freed*, 425 F.2d 785, 788, 165 USPQ 570, 572 (CCPA 1970).

As to the examiner's argument that Fischer contemplates "halogen substituents in the reactive groups which initiate the cross-linking reaction(s),"<sup>4</sup> we point out that the patent does not specify where the halogen group(s) are to be placed. Rather, the teachings of Fischer suggest that the location of the halogen groups is immaterial. Moreover, even though Fischer discloses that the halogen substituents act as reactant groups, the reference still fails, in the first instance, to teach the claimed "<sub>Ohtsuka</sub>-Ar-X" formula.

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<sup>4</sup> Answer, p. 6.

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The decision of the examiner is reversed.

**REVERSED**

JOHN D. SMITH	)	
Administrative Patent Judge)	)	
	)	
	)	
BRADLEY R. GARRIS	)	BOARD OF PATENT
Administrative Patent Judge)	)	APPEALS AND
	)	INTERFERENCES
	)	
	)	
JOAN ELLIS	)	
Administrative Patent Judge)	)	

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**APPENDIX**

5. A process as set forth in claim 63 wherein said alkali metal sulfide is generated in situ by reaction of an alkali metal hydrosulfide and a base.

63. A process for the preparation of a crosslinkable poly(arylene sulfide) oligomer, comprising reacting:  
n equivalents of a dihaloaromatic compound;  
n+1 equivalents of a sulfur compound that is reactive with halo organic compounds to form thioethers; and  
2 equivalents of an end cap monomer corresponding to the formula:

$A_i$ -Ar-X

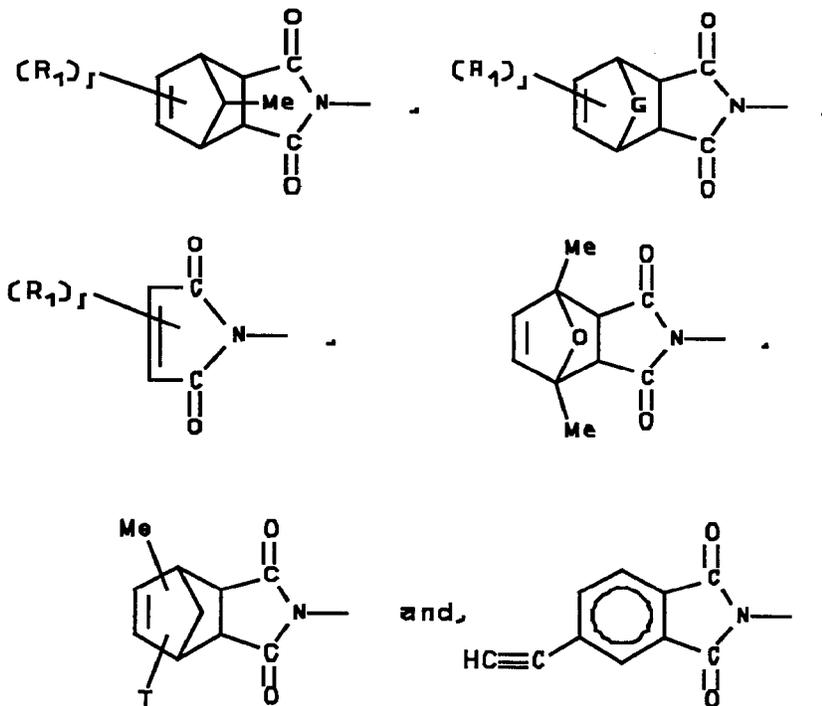
wherein:

X is halogeno;

Ar is arylene;

i is 1 or 2;

A is selected from the group consisting of



Me is Methyl;

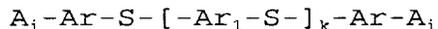
G is -O-, -SO<sub>2</sub>-, -CH<sub>2</sub>-, or -S-;

T is allyl or methallyl;

R<sub>1</sub> is lower alkoxy, aryl, substituted aryl,  
lower alkyl, substituted alkyl, aryloxy,  
or halogen; and

j is 0, 1 or 2.

65. A crosslinkable oligomer corresponding to the formula:



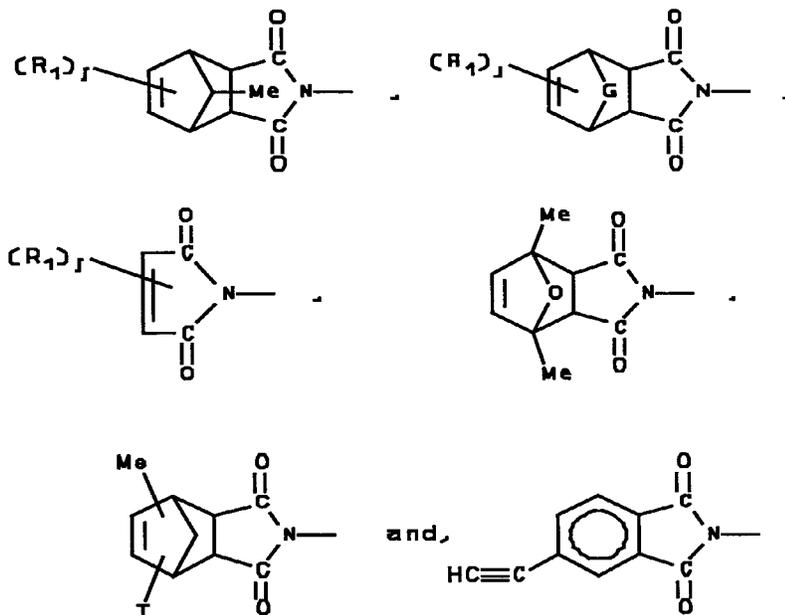
wherein:

i is 1 or 2;

Ar and Ar<sub>1</sub> are arylene;

k is an integer such that the oligomer has a molecular weight of between about 500 and about 40,000;

A is selected from the group consisting of



Me is Methyl;

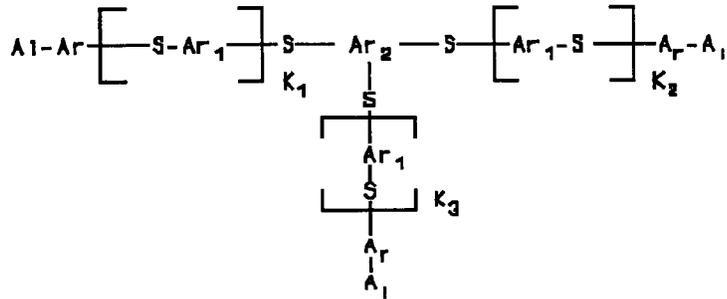
G is -O-, -SO<sub>2</sub>-, -CH<sub>2</sub>-, or -S-;

T is allyl or methallyl;

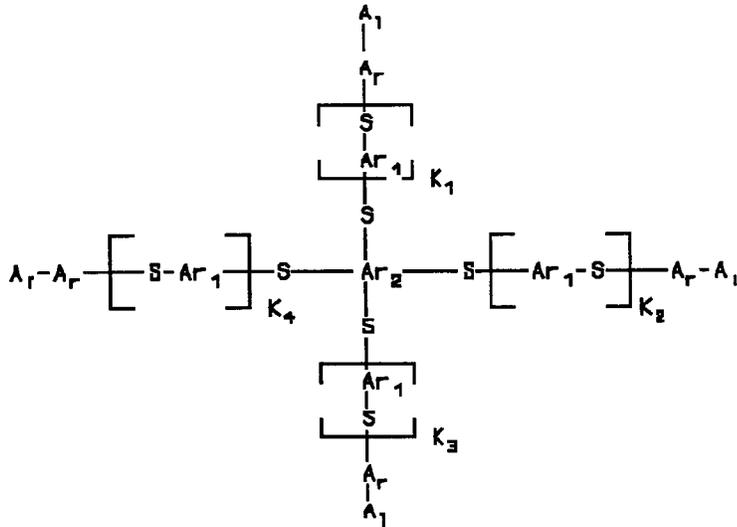
R<sub>1</sub> is lower alkoxy, aryl, substituted aryl, lower alkyl, substituted alkyl, aryloxy, or halogen; and

j is 0, 1 or 2.

66. A multidimensional crosslinkable arylene sulfide oligomer corresponding to the formula:



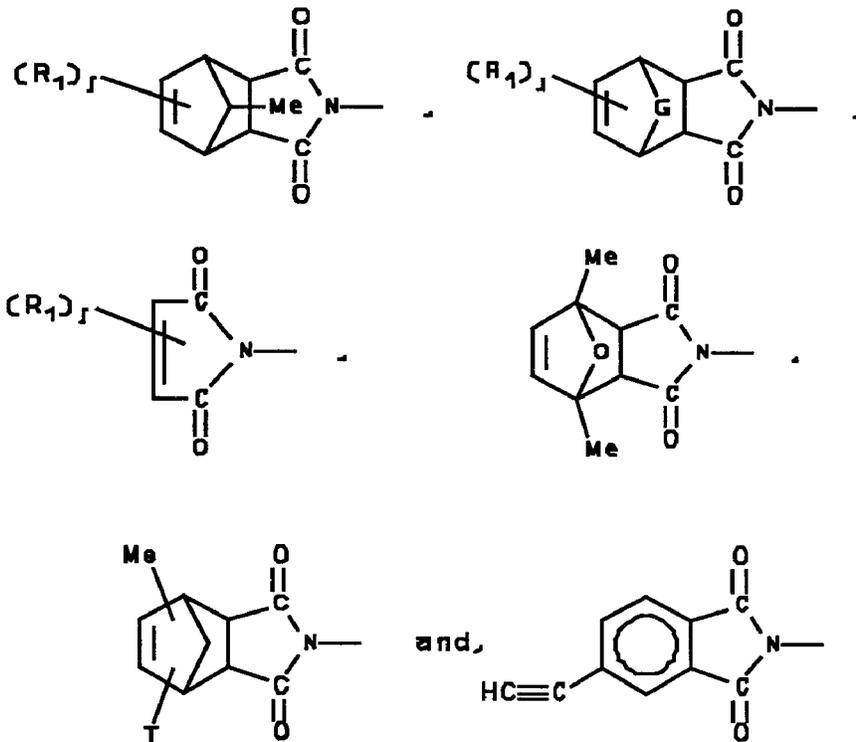
or



wherein:

- Ar and Ar<sub>1</sub> are arylene;
- Ar<sub>2</sub> is a polyvalent aromatic hub moiety;
- i is 1 or 2;
- K<sub>1</sub>, K<sub>2</sub>, K<sub>3</sub> and K<sub>4</sub> are integers such that the oligomer has a molecular weight between about 2,000 and 40,000;

A is selected from the group consisting of



Me is Methyl;

G is -O-, -SO<sub>2</sub>-, -CH<sub>2</sub>-, or -S-;

T is allyl or methallyl;

R<sub>1</sub> is lower alkoxy, aryl, substituted aryl,  
lower alkyl, substituted alkyl, aryloxy,  
or halogen; and

j is 0, 1 or 2.

APPEAL NO. 95-3097 - JUDGE ELLIS

APPLICATION NO. 07/639,051

APJ ELLIS

APJ JOHN SMITH

APJ GARRIS

DECISION: **REVERSED**

Typed By: Jenine Gillis

**DRAFT TYPED:** 17 SEP 97

**FINAL TYPED:**

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