Supplementary Materials

Heat-Resistant Polymers with Intense, Visible Photoluminescence Functionality and Fluorescence Probing Application

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Table S1. Commercial sources, drying condition, and melting points of common monomers and fluorophore-containing monofunctional compounds used for the polycondensation of polybenzoxazoles and polyazomethines.

Monomer or monoaldehyde	Source	Vacuum-drying condition	Melting point (°C) [a]
4,6-Diaminoresorcinol dihydrochloride (DAR)	Tokyo Chemical Industry (TCI)	30 °C/24 h	302/322 [b]
4,4′-Diamino-3,3′-dihydroxybiphenyl (*p*-HAB)	Wakayama Seika	60 °C/12 h	300
3,3′-Diamino-4,4′-dihydroxybiphenyl (*m*-HAB)	Sumitomo Bakelite	60 °C/12 h	333
3,3′-Diamino-4,4′-dihydroxydiphenylether (ADPE)	Nippon Kayaku	60 °C/12 h	202
2,2-Bis(3-amino-4-hydroxypheny)hexafluoropropane (6FAP)	Central Glass	200 °C/12 h	248
1,3-Cyclohexanedicarboxylic acid (mixture of isomers) (1,3-CHDCA)	Aldrich	100 °C/24 h	119
1,4-Cyclohexanedicarboxylic acid (mixture of isomers) (1,4-CHDCA)	TCI	120 °C/24 h	312/346 [b]
4,4′-Oxybisbenzoic acid (OBA)	TCI	100 °C/24 h	315
2,2-Bis(4-aminophenyl)hexafluoropropane (Bis-B-AF)	Central Glass	50 °C/12 h	198 [c]
Terephthalaldehyde (TPAL)	TCI	40 °C/24 h [d]	115
2,2-Bis[4-(4-aminophenoxy)phenyl]hexafluoropropane (HFBAPP)	Wakayama Seika	50 °C/24 h	159
1-Pyrenecarboxaldehyde (1-PYAL)	TCI	-	128 [c]
9-Anthracenecarboxaldehyde (9-AAL)	TCI	-	107 [c]

[a] Data determined from the endothermic peak measured at a heating rate of 5 °C min^{-1} on DSC.
[b] Double endothermic peak in the DSC thermogram.
[c] Data from safety data sheet.
[d] Prior to vacuum-drying, the monomer was recrystallized from water.

Table S2. Commercial sources, drying condition, and melting points of common monomers and fluorophore-containing monofunctional compounds used for the polyaddition of polyimide precursors.

Monomer or monoamine	Source	Vacuum-drying condition	Melting point (°C) [a]
1,2,3,4-Cyclobutanetetracarboxylic dianhydride (CBDA)	Nissan Chemical	160 °C/12 h	241
Pyromellitic dianhydride (PMDA)	TCI	150 °C/12 h	287
3,3′,4,4′-Biphenyltetracarboxylic dianhydride (*s*-BPDA)	TCI	200 °C/12 h	300
2,3′,3,4′-Biphenyltetracarboxylic dianhydride (*a*-BPDA)	Ube Industries	200 °C/12 h	199
2,2′,3,3′-Biphenyltetracarboxylic dianhydride (*i*-BPDA)	JSR	200 °C/12 h	272
Hydoroquinone diphthalic anhydride (HQDA)	Chriskev Company	150 °C/12 h	267
1,4,5,8-Naphthalenetetracarboxylic dianhydride (1,4,5,8-NTDA)	Aldrich	180 °C/12 h	451
2,3,6,7-Naphthalenetetracarboxylic dianhydride (2,3,6,7-NTDA)	JFE Chemical	180 °C/12 h	360
3,3″,4,4″-*p*-Terphenyltetracarboxylic dianhydride (TPDA)	Hitachi Chemical	200 °C/12 h	317
9,10-Bis(4-aminophenyl)anthracene (BAPA)	-	100 °C/24 h [b]	323
HTA-44BP	-	160 °C/24 h [c]	254
4,4′-Methylenebis(cyclohexylamine) (MBCHA)	New Japan Chemical		
4,4′-Methylenebis(2-methylcyclohexylamine) (M-MBCHA)	Aldrich		
Trans-1,4-cyclohexanediamine (*t*-CHDA)	Iwatani Industrial Gases	30 °C/12 h	70
2,2′-Bis(trifluoromethyl)benzidine (TFMB)	Wakayama Seika	50 °C/12 h	184
p-Phenylenediamine (*p*-PDA)	Wako Chemical	50 °C/12 h	142
1-Aminopyrene (1-APY)	TCI		117
1-Aminoanthracene (1-AAN)	TCI		122
2-Aminoanthracene (2-AAN)	TCI		242

[a] Data determined from the endothermic peak measured at a heating rate of 5 °C min^{-1} on DSC.

[b] Prior to vacuum-drying, the monomer was recrystallized from benzene.

[c] Prior to vacuum-drying, the monomer was recrystallized from 1,4-dioxane.

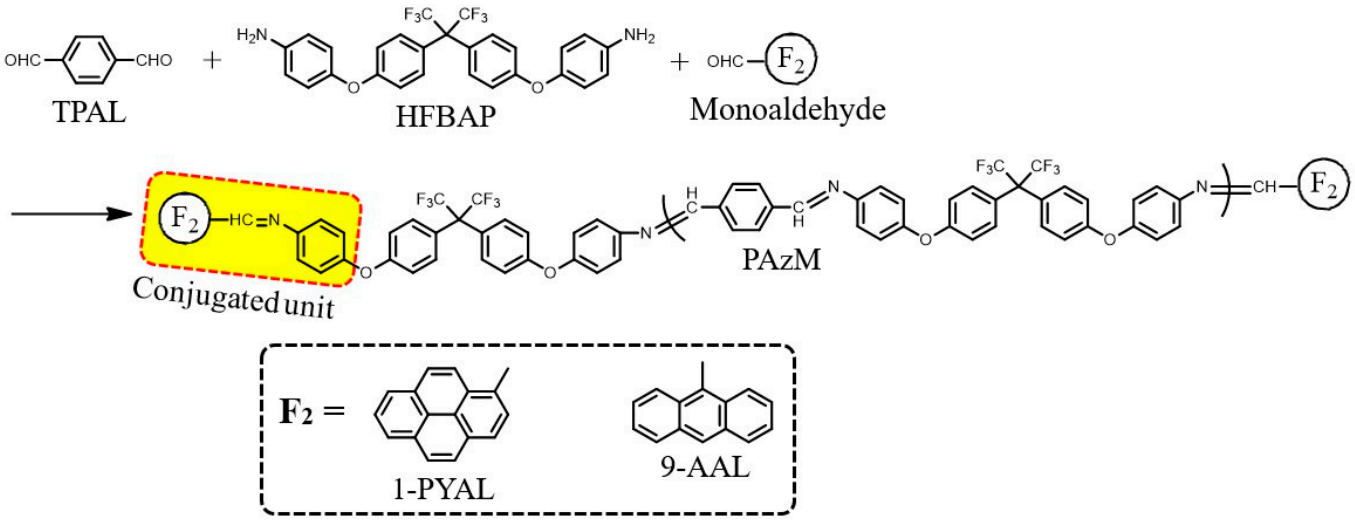

Figure S1. Structures of the polyazomethines (PAzM) terminated with conjugated monoaldehydes.