## Colorless polyimides derived from 2R, 5R, 7S, 10S-

## naphthanetetracarboxylic dianhydride

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Figure S1. <sup>1</sup>H NMR spectra of HNTDA in DMSO- $d_6$ .



Figure S2. <sup>13</sup>C NMR spectra of HNTDA in DMSO- $d_6$ .



Figure S3. Representative <sup>1</sup>H NMR spectra of HNTDA- and HPMDA-based polyimides



Figure S4. Representative FT-IR spectra of HNTDA- and HPMDA-based polyimides



Figure S5. TMA curves of HNTDA- and HPMDA-based polyimides

Table S1. Solubility of HNTDA- and HPMDA-based polyin	nides.
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Polyimide	<i>m</i> -Cresol	NMP	DMAc	DMSO	Chloroform	1,4-dioxane	THF	
HNTDA/ODA	++	++	++	++	-	-	-	
HNTDA/APB	++	++	+-	+-	-	-	-	
HNTDA/BAPB	++	++	++	++	-	-	-	
HNTDA/MBCHA	+	+-	+-	+-	-	-	-	
HPMDA/ODA	++	++	++	++	-	-	-	

HPMDA/APB	+	++	++	++	-	-	-
HPMDA/MBCHA	+	+	+-	+-	-	-	-

Key: ++: soluble at room temperature; +: soluble upon heating; +-: partially soluble upon heating; -: insoluble; NMP: *N*-methyl-2-pyrrolidone; DMAc: N, N-dimethylacetamide; DMSO: dimethyl sulfoxide; THF: tetrahydrofuran.

Table S2. Color coordinates of HNTDA- and HPMDA-based polyimide films<sup>a</sup>.

Polyimide	$L^*$	<i>a</i> *	<i>b</i> *
HNTDA/ODA	94.86	0.01	1.68
HNTDA/APB	94.84	-0.06	2.02
HNTDA/BAPB	94.28	0.09	2.44
HNTDA/MBCHA	95.37	-0.01	1.21
HPMDA/ODA	95.44	0.09	0.82
HPMDA/APB	95.22	0.09	1.10
HPMDA/MBCHA	96.04	-0.01	0.75

<sup>a</sup> The color parameters were calculated according to a CIE LAB equation, and the film thickness was around 20

 $\mu$  m. L\* refers to lightness; 100 means white, while 0 indicates black. A positive a\* means red color, a negative a\* indicates green color. A positive b\* means yellow color, a negative b\* indicates blue color.