

Material	Type of modulation	Preparation method	Thickness ( $\mu\text{m}$ )	Recording wavelength (nm)	Sensitivity ( $\text{J}/\text{cm}^2$ )	Resolution (lines/mm)	Diffraction efficiency (%)
<b>Liquid photopolymerizable compositions</b>							
Barium and lead acrylate	Surface and refractive index	Liquid between two glass plates	10-20	694	0.3	3000	45
Multifunctional acrylates	Refractive index	Liquid between two glass plates	55	450-550	0.1-0.2	>2500	80
Methacrylate	Refractive index	Liquid between two glass plates	120	457	0.5-0.7	--	14
<b>Photopolymerizable dry films</b>							
Du Pont's photopolymer	Refractive index	Coated on glass substrate	1.25-200.00	350-550	0.1-0.4	3000	85-90
Du Pont's Omnidex (HRF series)	Refractive index	Coated on plastic sheet	6-78	450-650	0.01-0.10	6000	99
DMP-128	Voids and solid	Coated on flexible plastic	1-30	442-647	0.005-0.030	5000	80-95
Methyl methacrylate	Refractive index	PMMA samples	2000	325	50-150	5000	70
Titanocene chloride PMMA	Refractive index	PMMA blocks	500-3000	514	3.9	--	= 100
Acrylamide	Refractive index	Coated on glass	100	633	0.1	3000	80

表 1. 光聚合系統之感光高分子材料的組成及特性

Material	Type of modulation	Preparation method	Thickness ( $\mu\text{m}$ )	Recording wavelength (nm)	Sensitivity ( $\text{J}/\text{cm}^2$ )	Resolution (lines/mm)	Diffraction efficiency (%)
DCPVA	Refractive index	Coated on glass	30-60	488	0.5	3000	68
DCPAA	Refractive index	Coated on glass	40-60	488	4.0	3000	28
DCPAA-DMF	Refractive index	Coated on glass	40-60	488	0.2	3000	70
FePVA	Refractive index	Coated on glass	60	488	17	3000	80
PVCz	Refractive index	Coated on glass	1.4-7.1	488	0.05, 0.5	>3500	96

表 2. 光交鏈系統之感光高分子材料的組成及特性

Material	Type of modulation	Thickness ( $\mu\text{m}$ )	Recording wavelength (nm)	Sensitivity ( $\text{J}/\text{cm}^2$ )	Resolution (lines/mm)	Diffraction efficiency (%)
MO/PVA	Polarization grating	--	488	0.6	--	35.0
Azo dye/PVA	Polarization grating	15-30	488	--	500-4000	0.3
Acidified MR/PVA	Polarization grating	30	488	--	500-4000	1
Azo dye/PMMA	Polarization grating	10	488	--	--	5.0
Spiropyran/PVCz	--	10	350	300	--	10.5
Azo-side chain	Polarization grating	0.5	514	--	1000	--
Bacteriorhodopsin	--	200-500	350-620	--	>5000	10

表 3. 高分子摻雜系統之感光材料的組成及特性