

List of Abbreviations

ΔG°	standard Gibbs free energy change
ΔH°	standard enthalpy change
ΔS°	standard entropy change
AIBN	2,2'-azobisisobutyronitrile
ATRP	atom transfer radical polymerization
bde	bis(N,N'-dimethylaminoethyl) ether
<i>n</i> BMA	<i>n</i> -butyl methacrylate
Brij 98	polyoxyethylene (20) oleyl ether
Bpy	2,2'-bipyridine
c_s	solute concentration in the stationary phase
c_m	solute concentration in the mobile phase
CFRP	conventional free-radical polymerization
CMC	critical micelle concentration
CRT	cathode ray tube
DB	diblock copolymer
DMDBHD	di-methyl-2,6-dibromoheptanedioate
DMF	dimethyl formamide
DOWEX MSC-1	macroporous ion-exchange resin
dNbpy	4,4'-di(5-nonyl)-2,2'-bipyridine
DP_n	degree of polymerization
$\overline{DP}_n$	number average degree of polymerization
DSC	differential scanning calorimeter
DT	degenerative (exchange) chain transfer
DTAB	dodecyltrimethylammonium bromide
EDS	energy dispersive spectroscopy
Ems	electron microscopes
EDX	energy-dispersive x-ray
EELS	electron energy loss spectrum
EF-TEM	energy filtered transmission electron microscopy
EHMA	2-ethylhexyl methacrylate

EBiB	ethyl 2-bromoisobutyrate
FRP	free radical polymerization
GPC	gel permeation chromatography
HLB	hydrophilic-lipophilic balance
IC	interaction chromatography
ICI	imperial chemical industries
IFFT	inverse fast Fourier transformation
K	distribution constant
k'	retention factor
k_{act}	activation rate constant
k_{deact}	deactivation rate constant
K-Naph	potassium naphthalide
KPS	potassium persulfate
LC	liquid chromatography
LCCC	liquid chromatography at critical condition
LC-CAP	liquid chromatography at the critical adsorption point
LC-PEAT	liquid chromatography at the point of exclusion- adsorption transition
L/CRP	living/controlled radical polymerization
LFRP	living free-radical polymerization
Li-Naph	lithium naphthalide
LP	living polymerization
MC	malonyl chloride
MEK	methyl ethyl ketone
MMA	methyl methacrylate
M_n	number average molecular weight
M_w	weight average molecular weight
MWD	molecular weight distribution
$\bar{n}$	average number of radicals per particle
<i>n</i> BA	<i>n</i> -butylacrylate
<i>n</i> BMA	<i>n</i> -butylmethacrylate

NMP	nitroxide mediated polymerization
NMR	nuclear magnetic resonance
OH-EBiB	2-hydroxyethyl 2-bromoisobutyrate
PDI	polydispersity index
PEG	poly (ethylene glycol)
PEO	poly(ethylene oxide)
PMDETA	N,N,N,N',N'-pentamethyldiethylenetriamine
PnBMA	poly(n-butyl methacrylate)
PMMA	poly(methyl methacrylate)
P2VP	poly(2-vinyl pyridine)
PVA-co-PVAc	poly(vinyl alcohol-co-vinyl acetate)
RAFT	reversible addition-fragmentation (chain) transfer
RP	reversed-phase
RP-TGIC	reversed-phase temperature gradient interaction chromatography
R-TeMe	organotellurium mediators
SB	star-block copolymer
SEC	size exclusion chromatography
SDS	sodium dodecyl sulfate
SEM	scanning electron microscope
SEC-MALLS	size-exclusion chromatography multiangle laser light scattering
TB	triblock copolymer
TD	thermal dissociation
TEA	triethylamine
TEM	transmission electron microscope
TEMPO	2,2,6,6-tetramethylpiperidiny-1-oxy
TERP	organotellurium-mediated living radical polymerization
T _g	glass transition temperatures
TGA	thermogravimetric analysis
TGIC	temperature gradient interaction chromatography

THF	tetrahydrofuran
TMS	tetramethysilane
TPE	thermoplastic elastomers
TTAB	tetradecyltrimethylammonium bromide
V_m	retention volume of mobile phase
V_r	retention volume
V_s	retention volume of stationary phase
V-50	2,2'-azobis(2-amidinopropane) dihydrochloride
VA-044	2,2'-azobis[2-(2-imidazolin-2-yl) propane] dihydrochloride