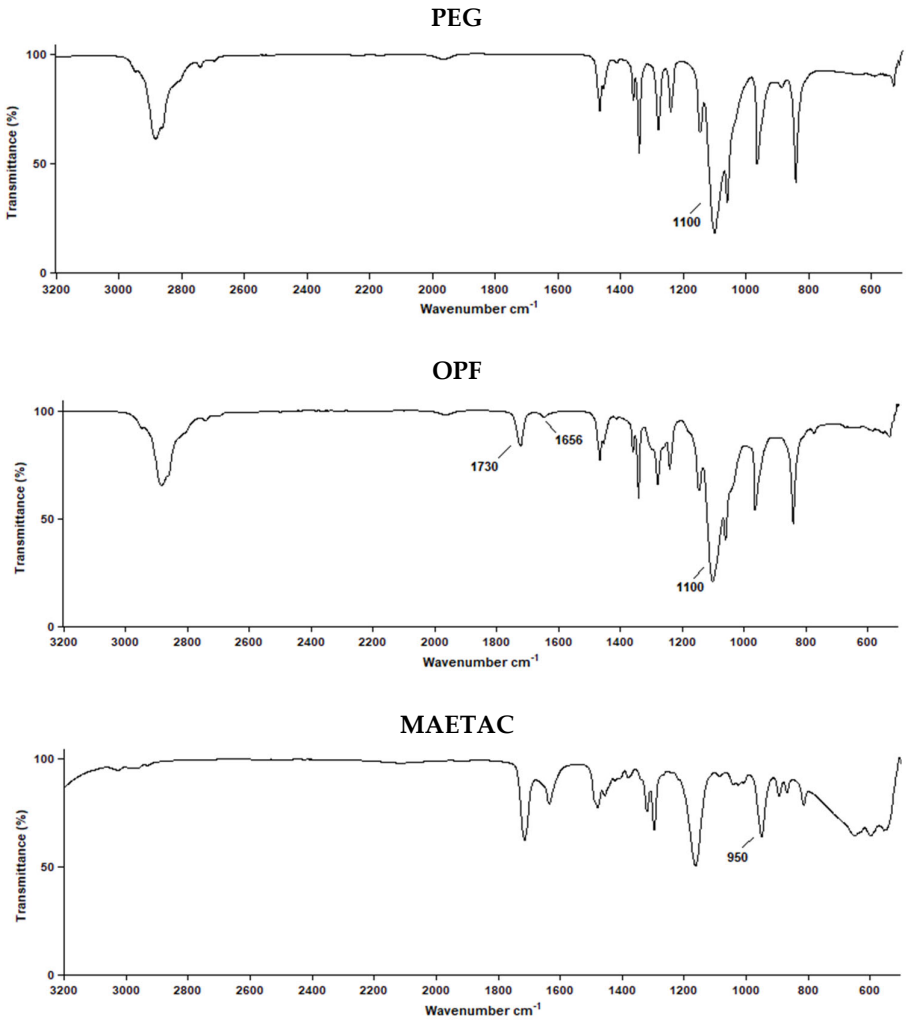
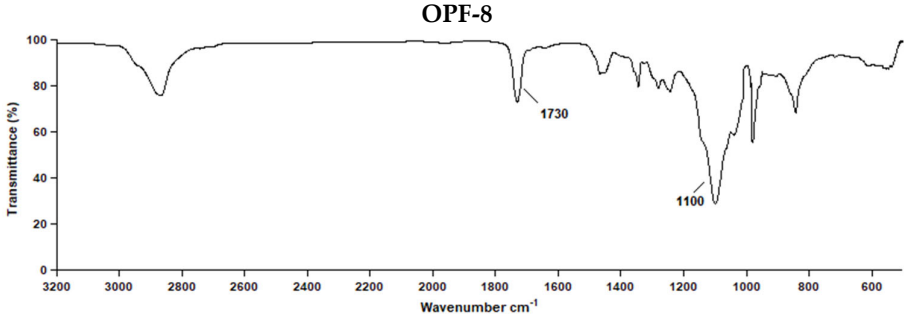
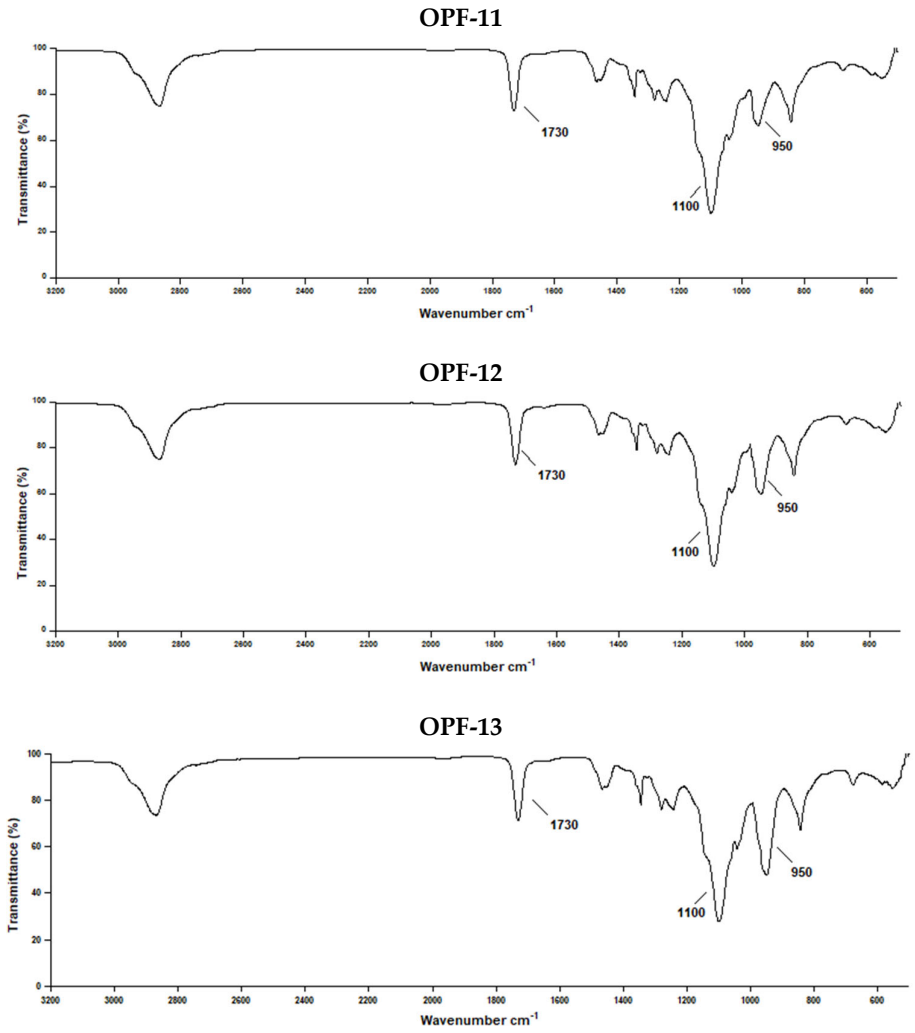
A


PEG
Transmittance (%)
100
50
0
1100
3200 3000 2800 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600
Wavenumber cm-1
OPF
Transmittance (%)
100
50
0
1730
1656
1100
3200 3000 2800 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600
Wavenumber cm-1
MAETAC
Transmittance (%)
100
50
0
950
3200 3000 2800 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600
Wavenumber cm-1

B


OPF-8
Transmittance (%)
100
80
60
40
20
0
1730
1100
3200 3000 2800 2600 2400 2200 2000 1800 1600 1400 1200 1000 800 600
Wavenumber cm-1



C

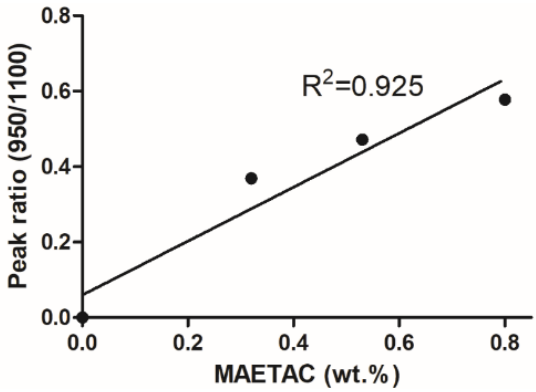
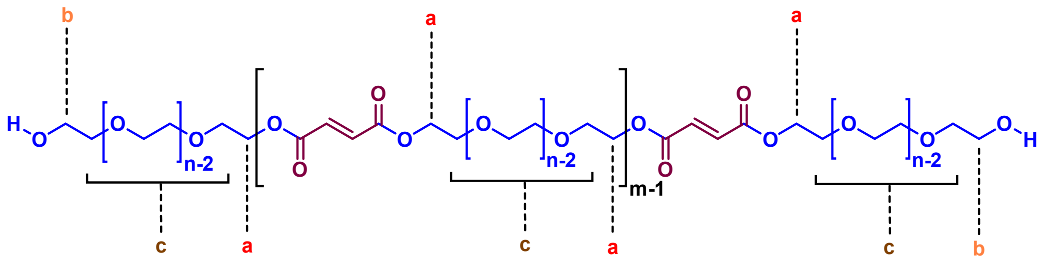
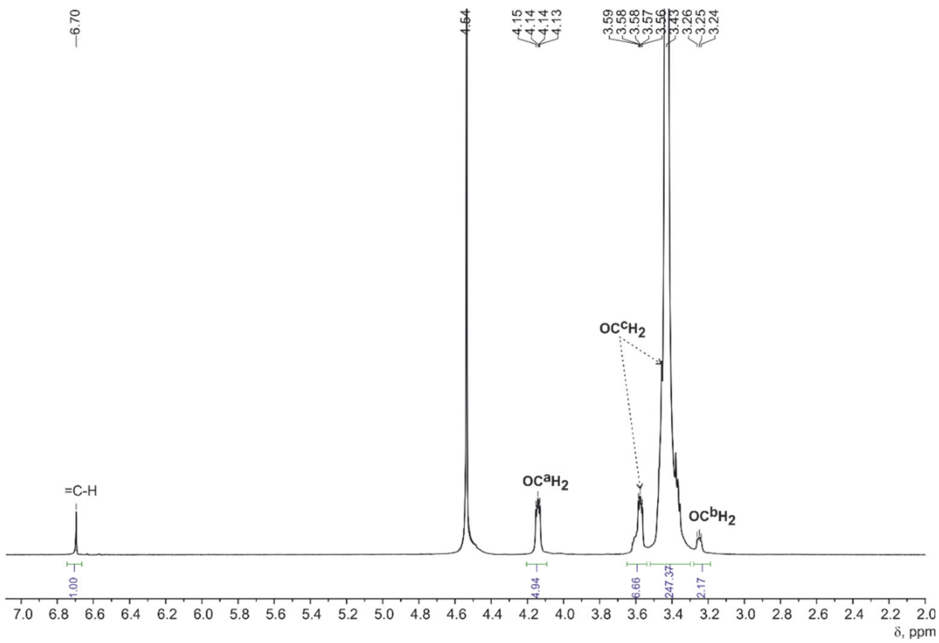


Figure S1. FTIR spectra of PEG, OPF, MAETAC (**A**) and lyophilized OPF/PEGDA cryogels with increased MAETAC amount (**B**). Relationship between MAETAC concentration in reaction solution and FTIR signal of MAETAC in cryogels determined by the peak intensity ratio 950/1100 cm^{-1} (**C**).


b
a
a
H
O
O
O
n-2
O
O
O
O
O
n-2
O
m-1
O
O
O
O
n-2
O
H
c
a
c
a
c
b

A


6.70
4.54
4.15
4.14
4.14
4.13
3.59
3.58
3.58
3.57
3.56
3.43
3.26
3.25
3.24
=C-H
OC^{a}H$_2$
OC^{c}H$_2$
OC^{b}H$_2$
1.00
4.94
6.66
247.37
2.17
δ, ppm

B

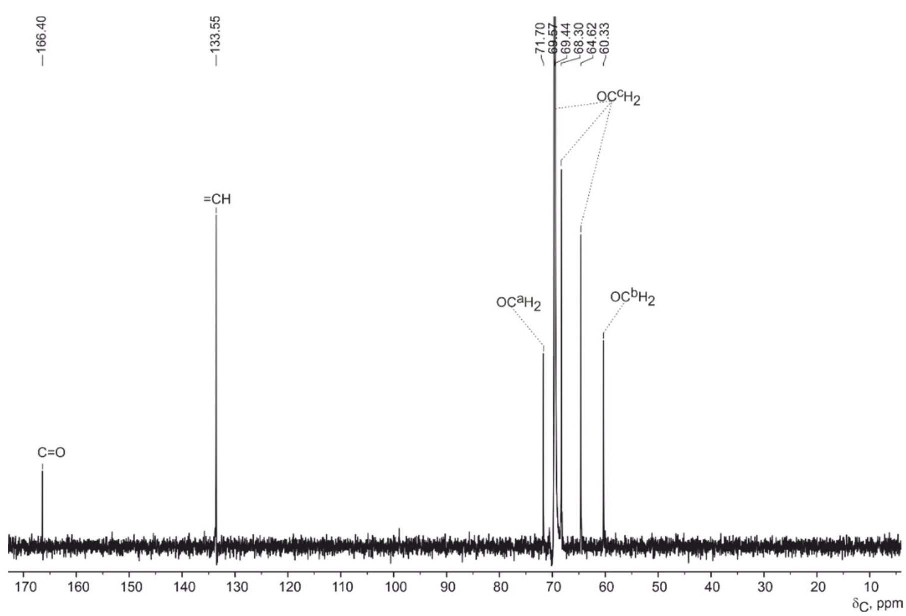

166.40
133.55
71.70
69.57
69.44
68.30
64.62
60.33
C=O
=CH
OC^{a}H$_2$
OC^{c}H$_2$
OC^{b}H$_2$
δ$_C$, ppm

Figure S2. ^{1}H NMR spectrum (400 MHz, D_2O, ambient temperature) (**A**) and $^{13}C–\{^{1}H\}$ NMR spectrum (100.6 MHz, D_2O, ambient temperature) (**B**) of oligo (poly(ethylene glycol) fumarate) (OPF) macromer.

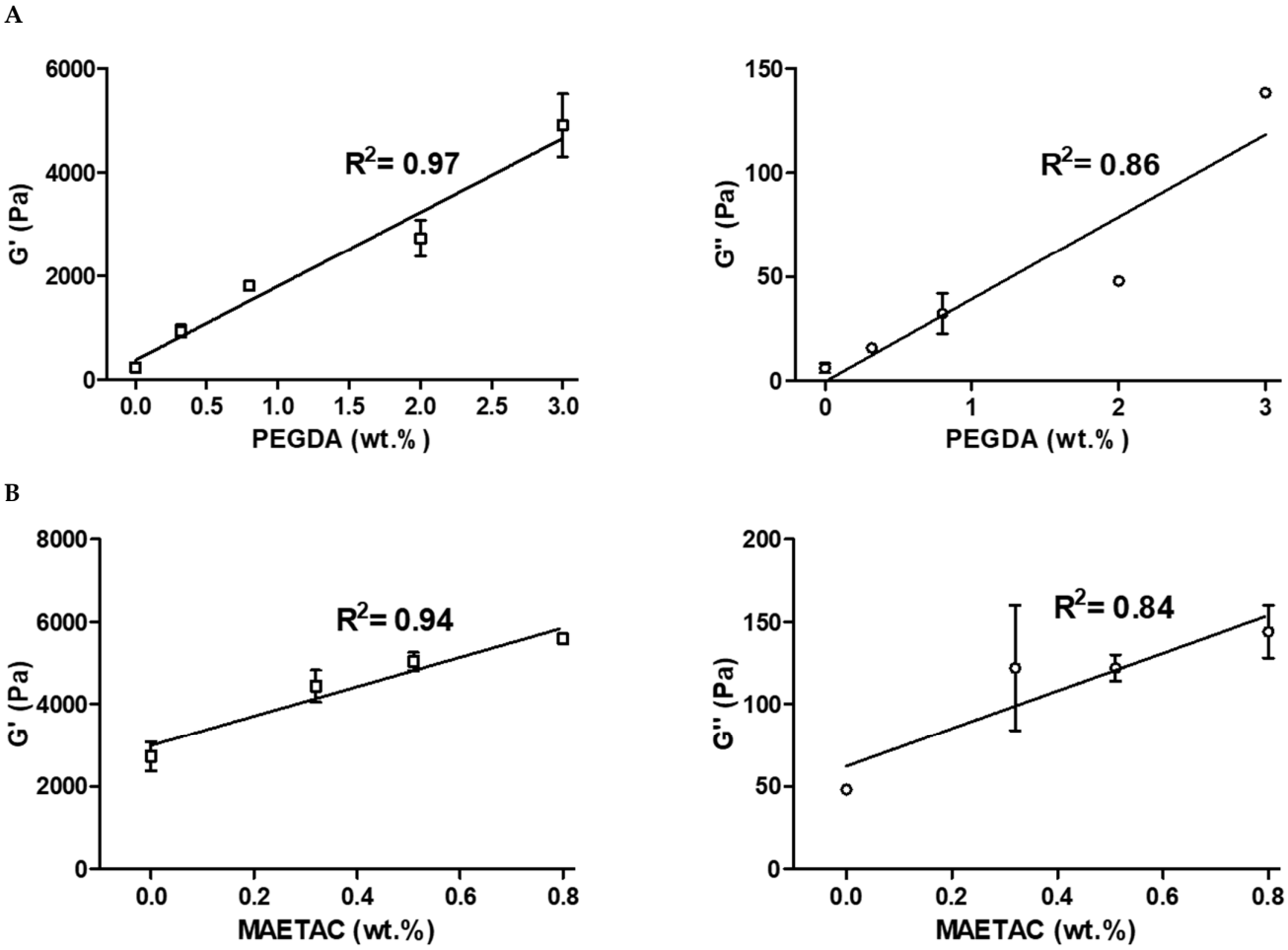


Figure S3. Relationships between G'/G'' moduli of OPF cryogels (OPF 4 wt.%) and amount of PEGDA (A) and OPF/PEGDA cryogels (OPF 4 wt.%, PEGDA 2 wt.%) and amount of MAETAC (B).

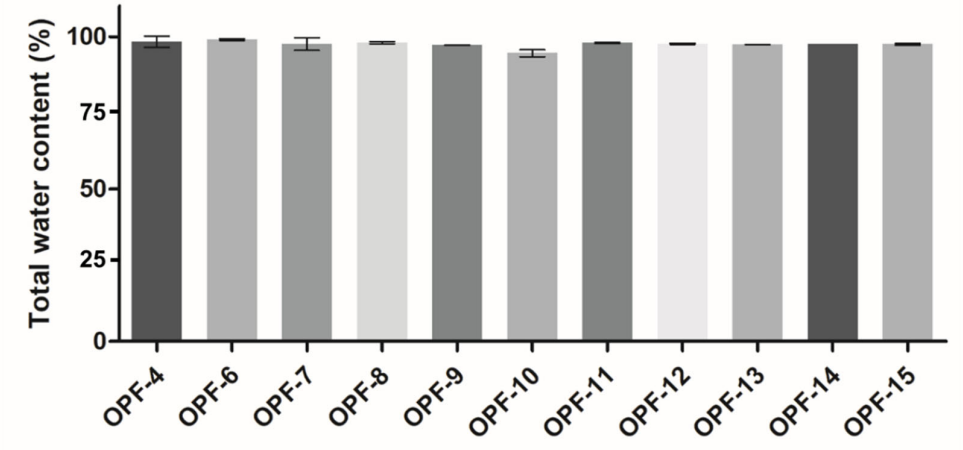


Figure S4. Overall swelling index (total water content %) for OPF-based cryogels.

Group D (OPF 4 %, *PEGDA y%*, MAETAC 0.8%)

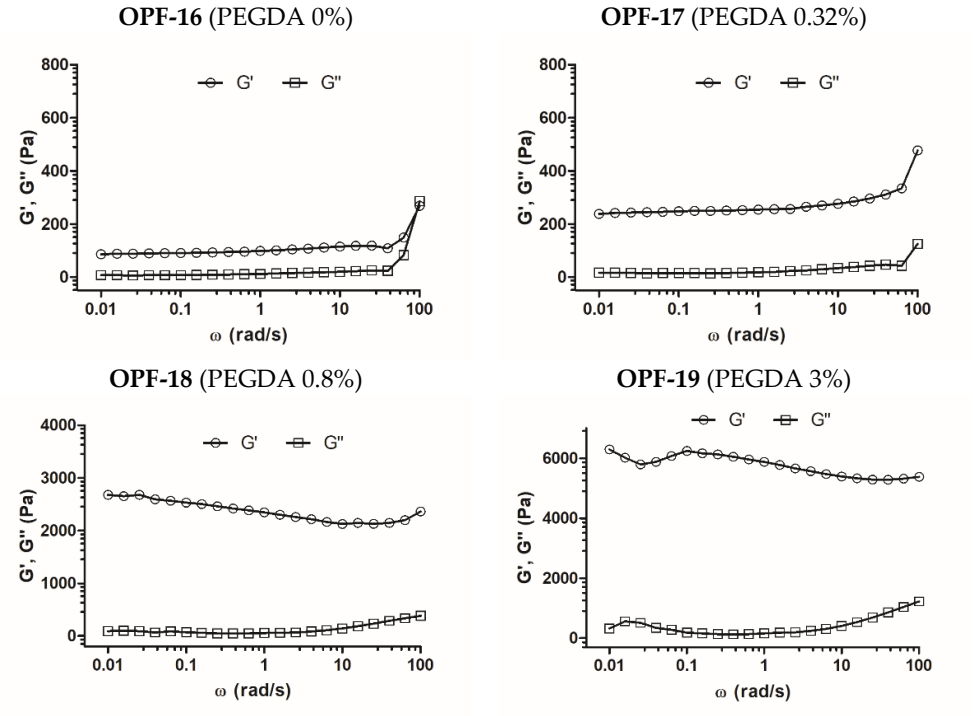


Figure S5. Frequency sweep analysis of OPF-based cryogels (group D). The measurement of frequency dependence of storage (G') and loss (G'') modulus was performed within LVR at δ = 0.5% strain deformation. Cryogel compositions (wt. %) are shown in parentheses.