

# Supporting Information

## Hierarchically Macroporous Cryogels of Polyisobutylene and Silica Nanoparticles

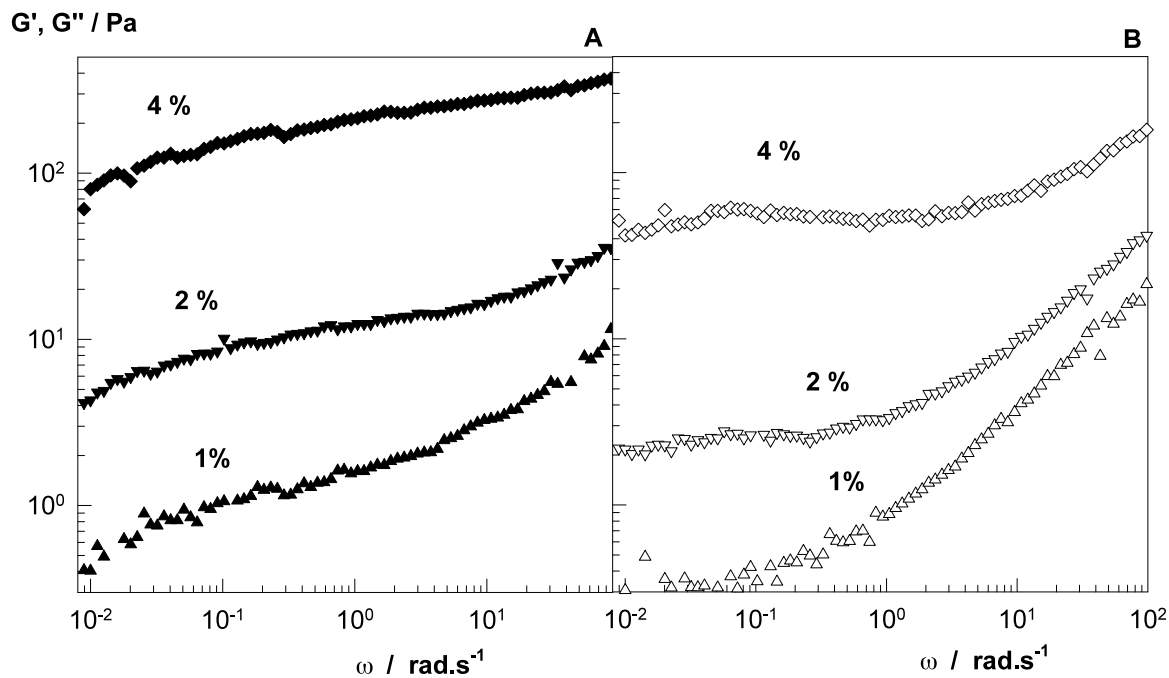
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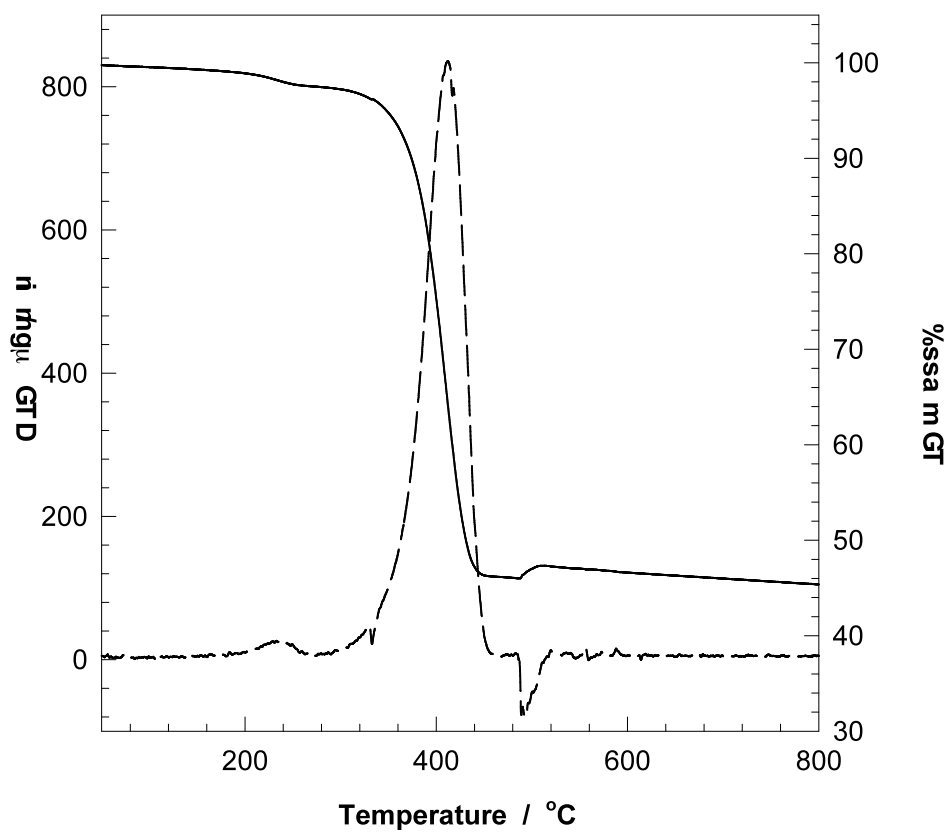
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Silica % in the feed	Gel preparation temperature				
	+13 °C	-2 °C	-7 °C	-10 °C	-18 °C
0	0 (1.0)	0 (1.0)	0 (1.0)	0 (0.9)	0 (0.8)
1	0.60 (0.42)	0.80 (1.0)	0.98 (1.0)	1.00 (1.0)	0.64 (1.0)
2	1.88 (0.74)	1.66 (1.0)	2.00 (1.0)	2.00 (1.0)	0.76 (1.0)
4	4.00 (0.81)	3.84 (1.0)	3.96 (1.0)	3.84 (1.0)	3.88 (1.0)

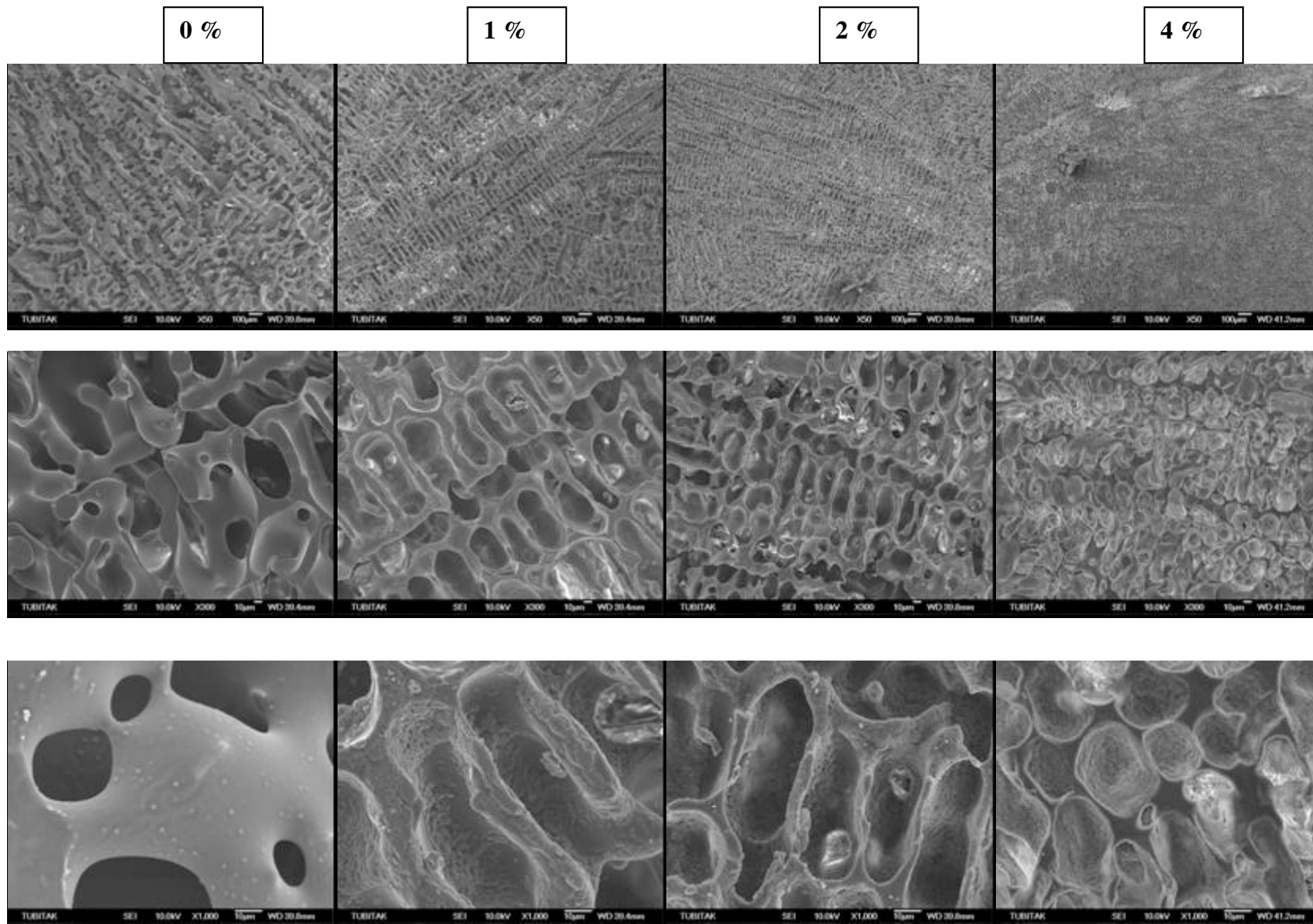
**Table S1:** Silica content of hybrid gel networks formed at various temperatures and silica concentrations. The values of gel fractions  $W_g$  are given in parenthesis.



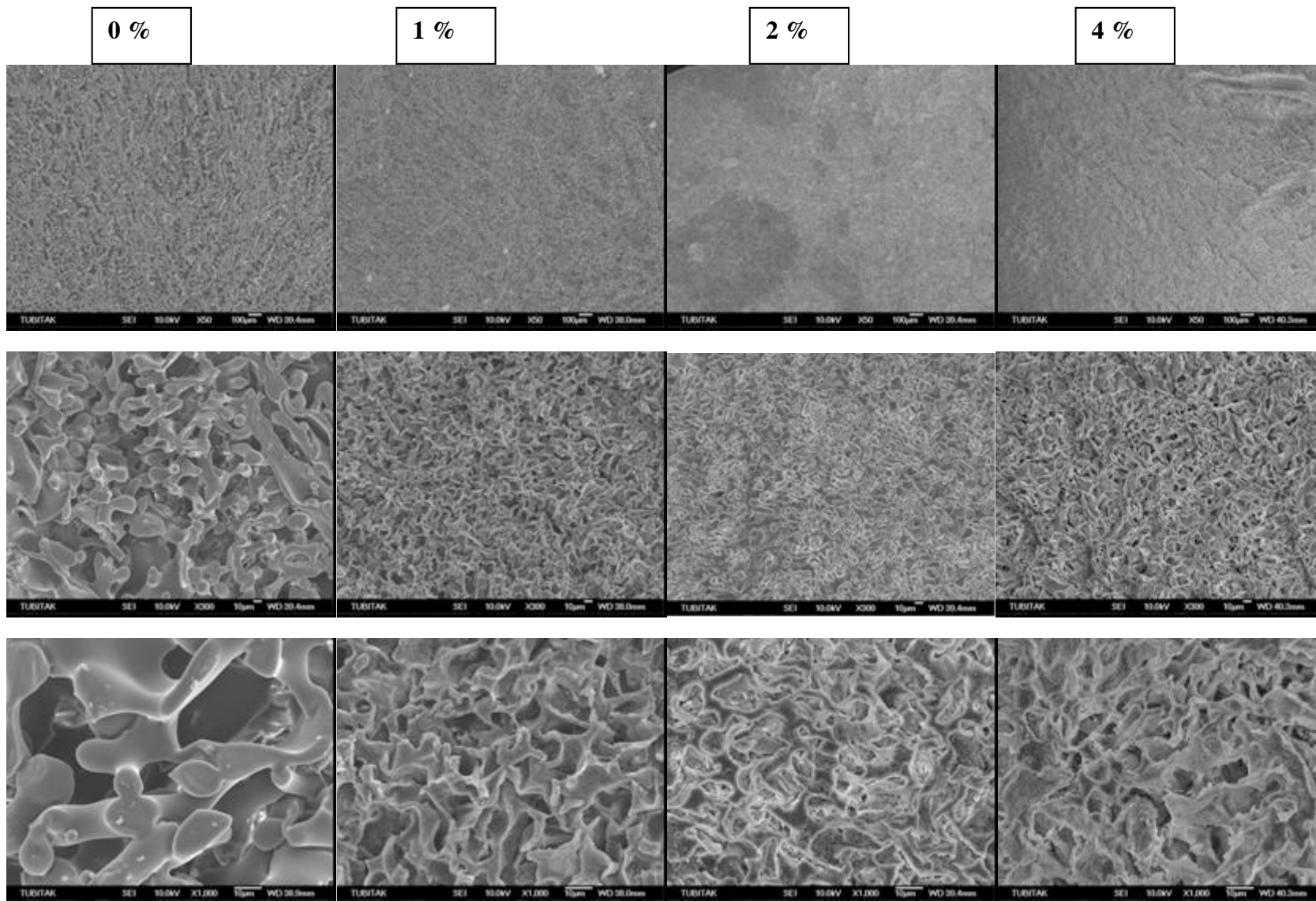
**Figure S1.** Elastic modulus  $G'$  (A, filled symbols) and viscous modulus  $G''$  (B, open symbols) shown as a function of the angular frequency  $\omega$  at 25°C for 5% PIB solution in cyclohexane in the presence of various amounts of silica indicated.



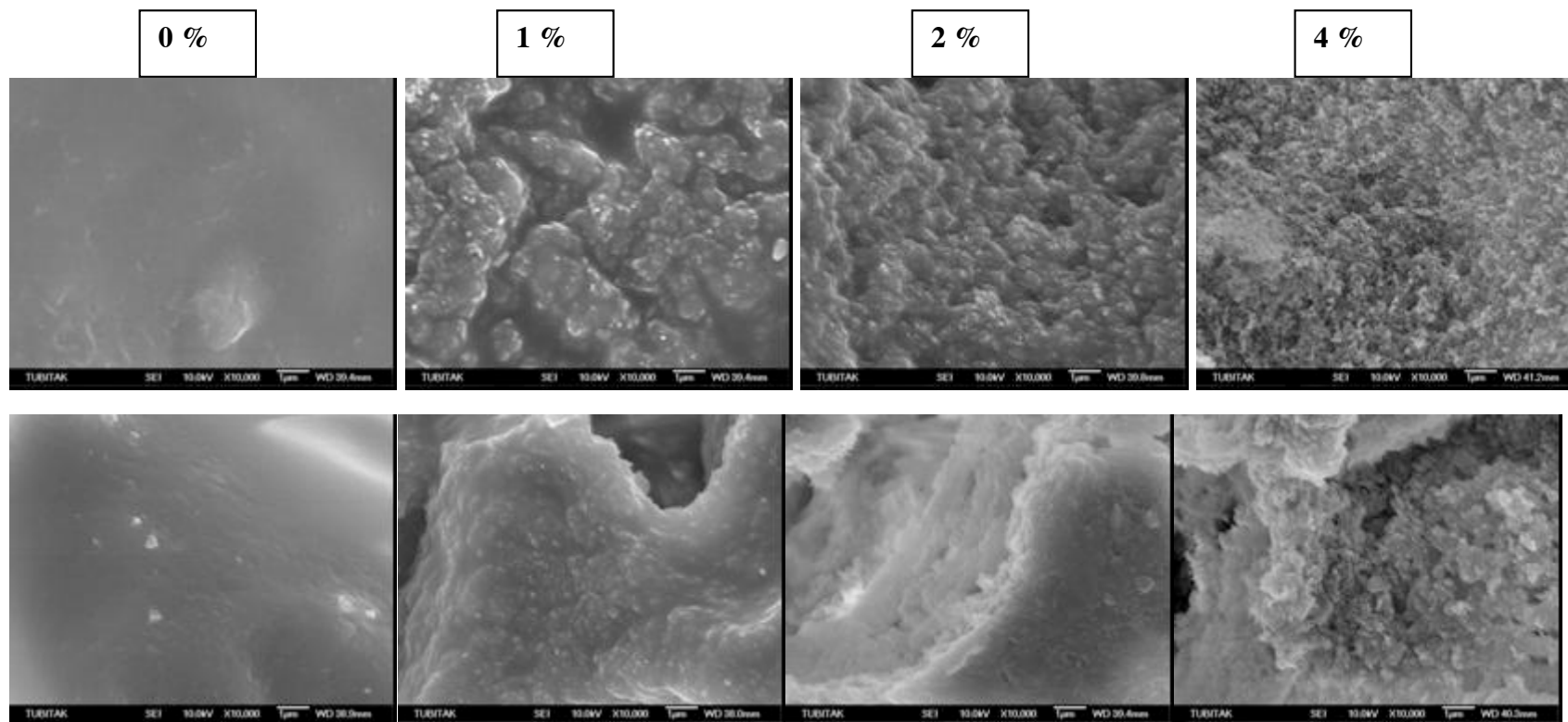
**Figure S2:** TG-DTG curves of a hybrid network formed at -18°C in the presence of 4 % silica.



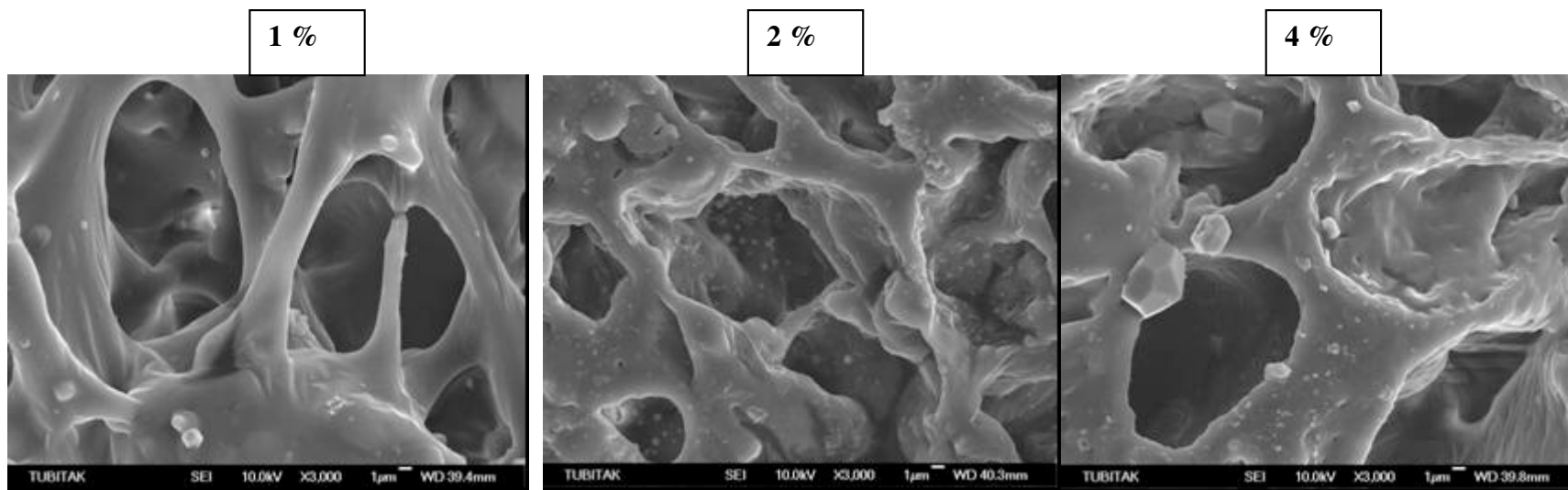
**Figure S3:** (A): SEM Images of hybrid networks formed at  $-2^{\circ}\text{C}$  and at various silica contents indicated. Scale bars are = 100  $\mu\text{m}$  (1st row), 10  $\mu\text{m}$  (2nd and 3rd rows)



**Figure S3:** (B): SEM Images of hybrid networks formed at  $-18^{\circ}\text{C}$  and at various silica contents indicated. Scale bars are = 100  $\mu\text{m}$  (1st row), 10  $\mu\text{m}$  (2nd and 3rd rows)



**Figure S4:** SEM Images of hybrid networks formed at -2°C (1<sup>st</sup> row) and -18°C (2<sup>nd</sup> row) at various silica contents indicated. Scale bars are 1 µm.



**Figure S5:** SEM Images of hybrid networks formed at  $-18^{\circ}\text{C}$  after treatment with aqueous HF. Initial silica contents indicated. Scale bars are  $1\ \mu\text{m}$ .



