Supplementary Information

Effect of high pressure on relaxation dynamics and crystallization kinetics of chiral liquid crystal in its smectic phase

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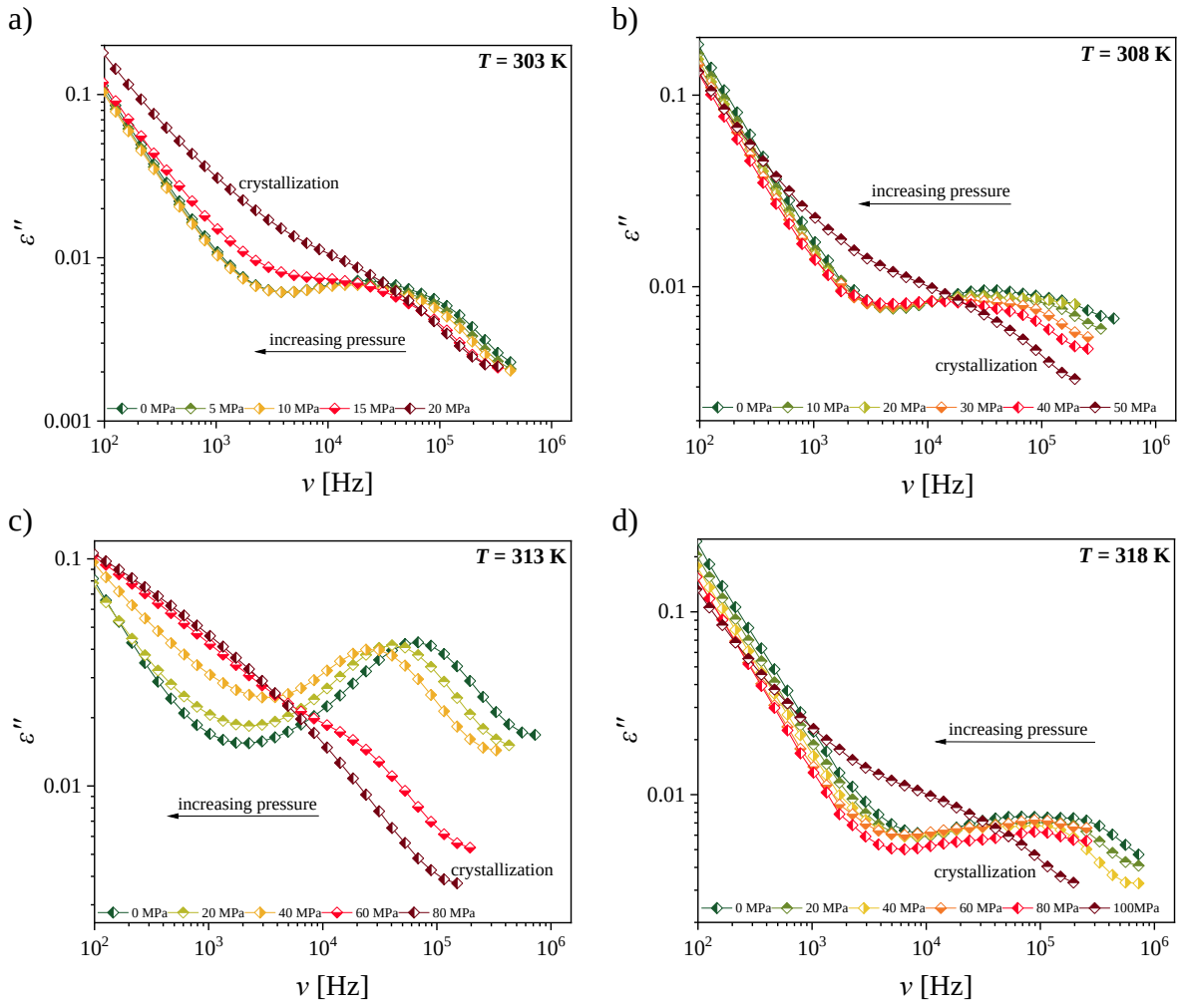
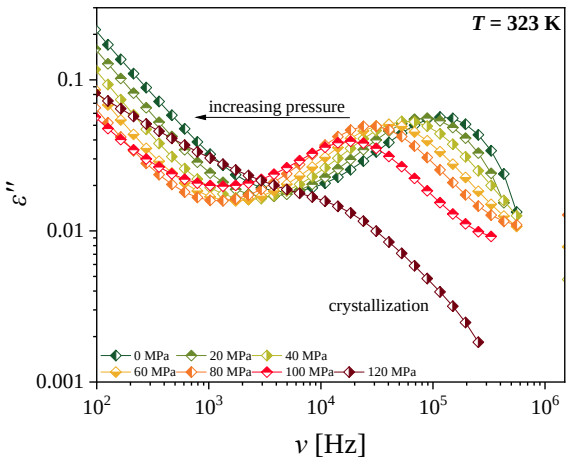
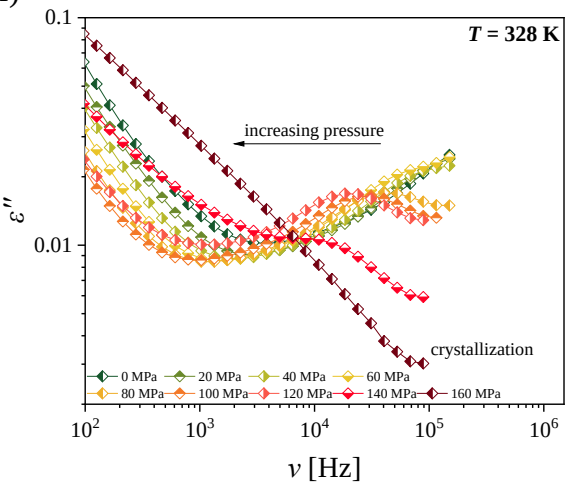


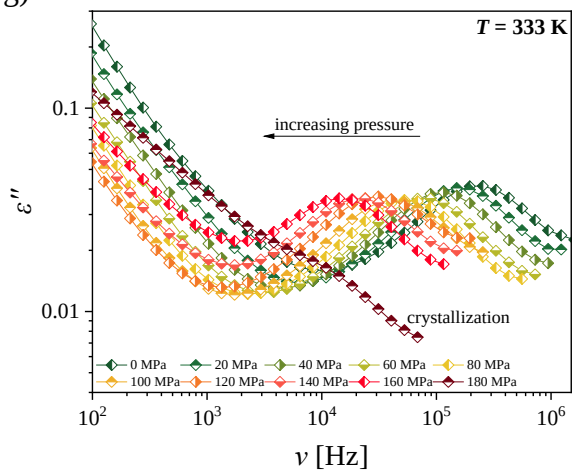
e)


T = 323 K
increasing pressure
crystallization
0 MPa
20 MPa
40 MPa
60 MPa
80 MPa
100 MPa
120 MPa
ε″
ν [Hz]

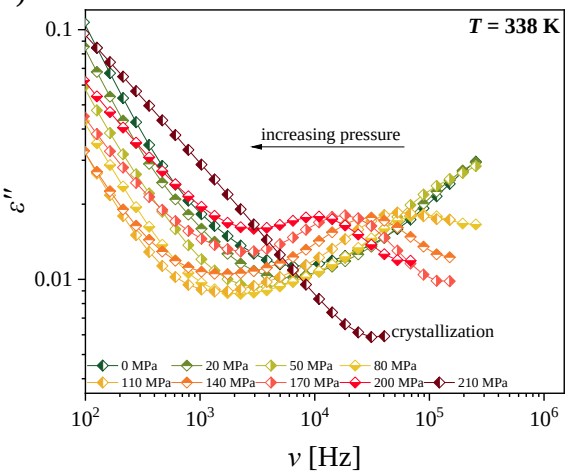
f)


T = 328 K
increasing pressure
crystallization
0 MPa
20 MPa
40 MPa
60 MPa
80 MPa
100 MPa
120 MPa
140 MPa
160 MPa
ε″
ν [Hz]

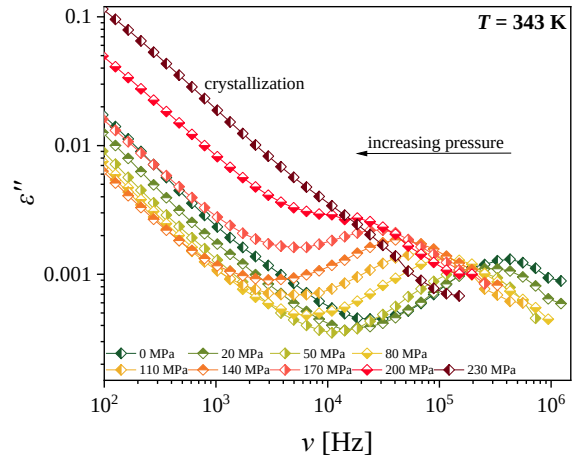
g)


T = 333 K
increasing pressure
crystallization
0 MPa
20 MPa
40 MPa
60 MPa
80 MPa
100 MPa
120 MPa
140 MPa
160 MPa
180 MPa
ε″
ν [Hz]

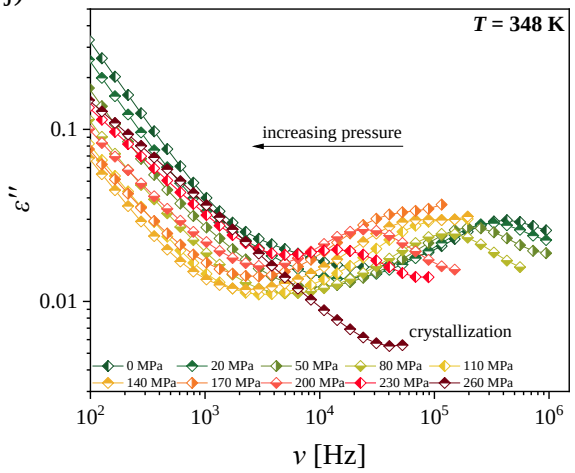
h)


T = 338 K
increasing pressure
crystallization
0 MPa
20 MPa
50 MPa
80 MPa
110 MPa
140 MPa
170 MPa
200 MPa
210 MPa
ε″
ν [Hz]

i)


T = 343 K
crystallization
increasing pressure
0 MPa
20 MPa
50 MPa
80 MPa
110 MPa
140 MPa
170 MPa
200 MPa
230 MPa
ε″
ν [Hz]

j)


T = 348 K
increasing pressure
crystallization
0 MPa
20 MPa
50 MPa
80 MPa
110 MPa
140 MPa
170 MPa
200 MPa
230 MPa
260 MPa
ε″
ν [Hz]

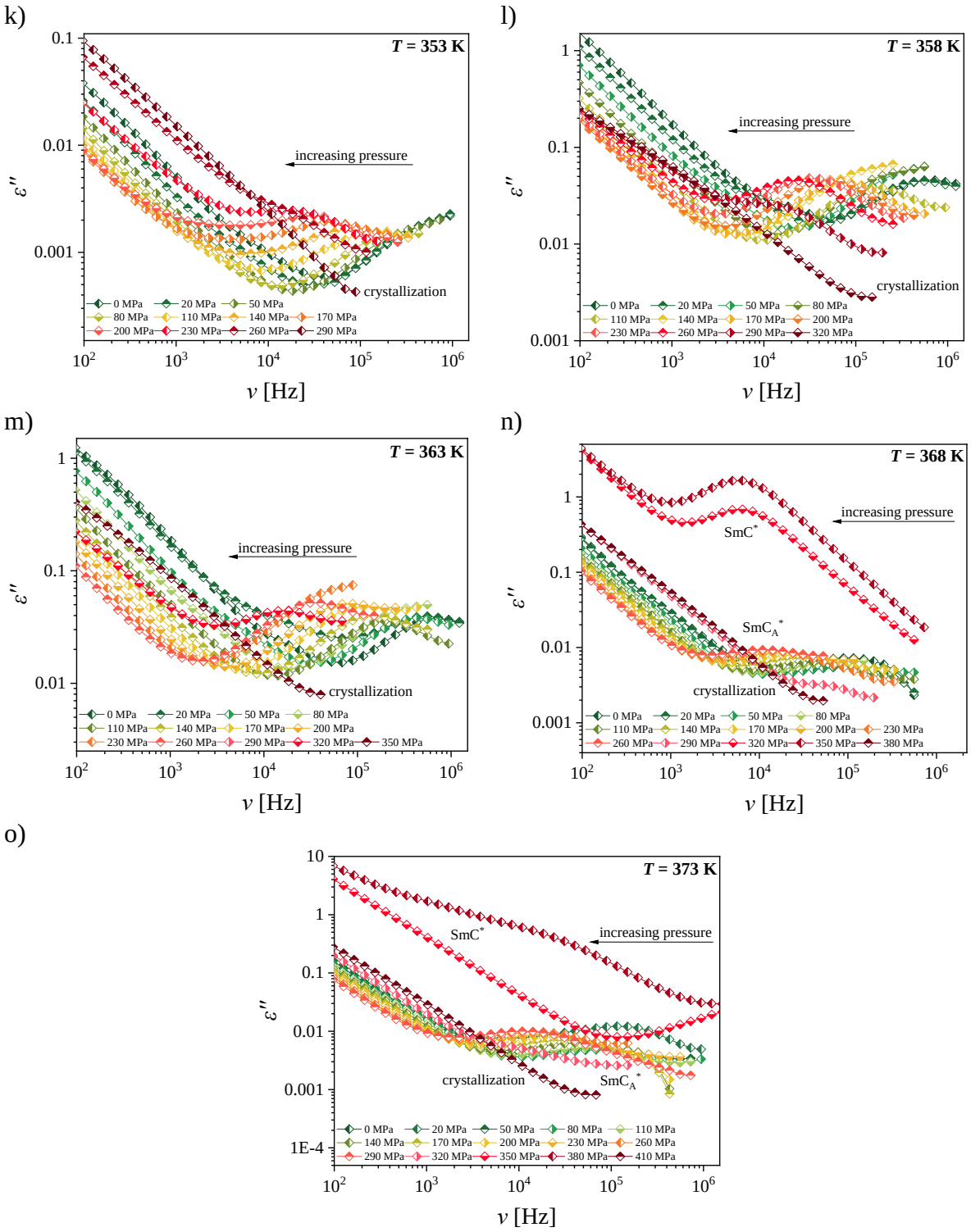


Fig. S1. The dielectric loss ε'' vs. frequency ν spectra measured under various pressure conditions at isotherms: a) 303 K; b) 308 K; c) 313 K; d) 318 K; e) 323 K; f) 328 K; g) 333 K; h) 338 K; i) 343 K; j) 348 K; k) 353 K; l) 358 K; m) 363 K; n) 368 K; o) 373 K.

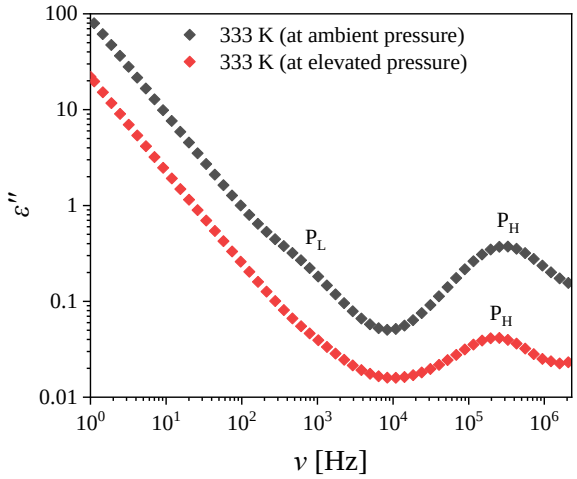
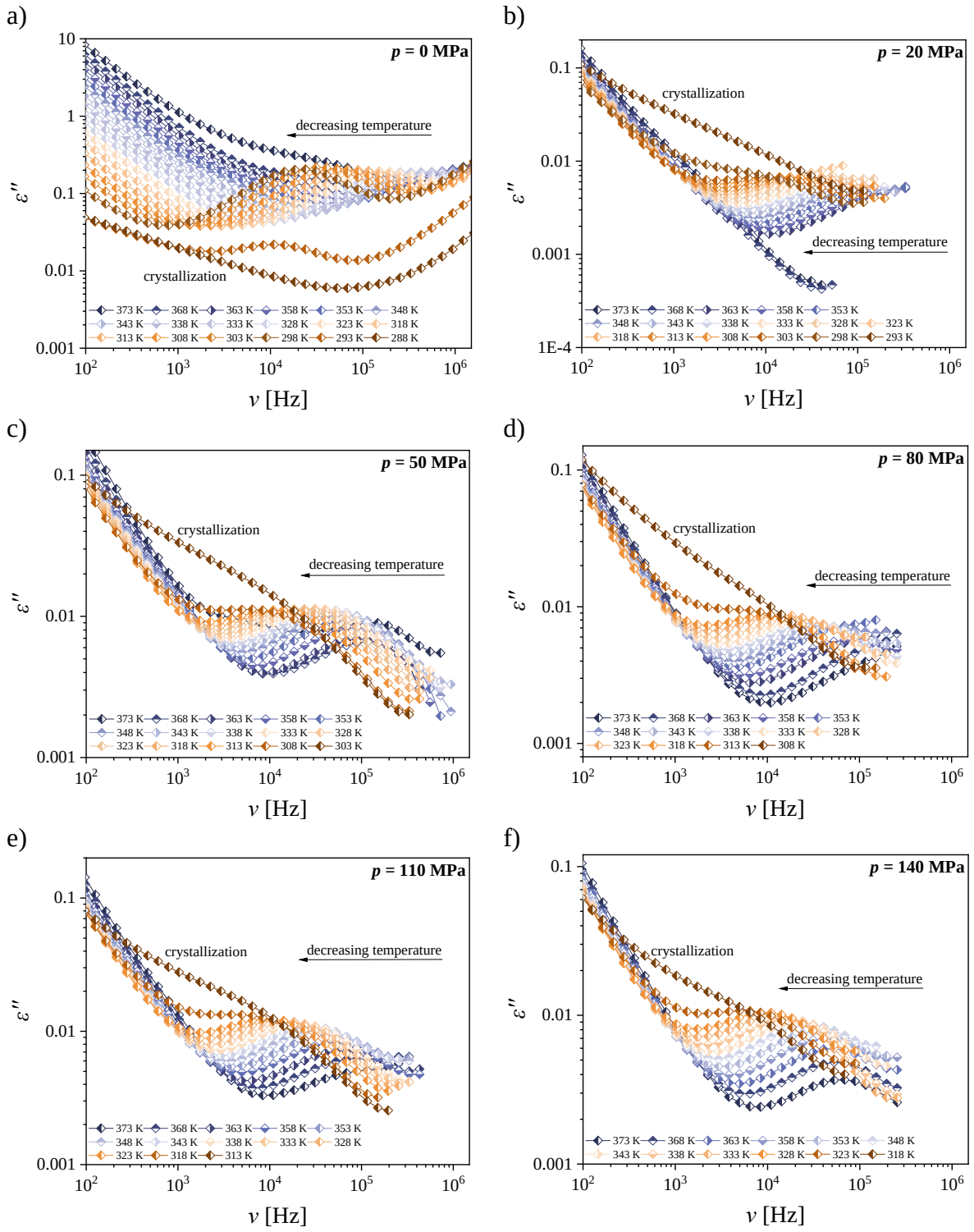


Fig. S2. The comparison of BDS spectra measured at 333 K at ambient pressure and at elevated pressure. P_H and P_L are the high-frequency anti-phase and the low-frequency in-phase phasons visible in the SmC_A^* phase, respectively.


a)
p = 0 MPa
decreasing temperature
crystallization
373 K 368 K 363 K 358 K 353 K 348 K
343 K 338 K 333 K 328 K 323 K 318 K
313 K 308 K 303 K 298 K 293 K 288 K
ε″
ν [Hz]
b)
p = 20 MPa
crystallization
decreasing temperature
373 K 368 K 363 K 358 K 353 K
348 K 343 K 338 K 333 K 328 K 323 K
318 K 313 K 308 K 303 K 298 K 293 K
c)
p = 50 MPa
crystallization
decreasing temperature
373 K 368 K 363 K 358 K 353 K
348 K 343 K 338 K 333 K 328 K
323 K 318 K 313 K 308 K 303 K
d)
p = 80 MPa
crystallization
decreasing temperature
373 K 368 K 363 K 358 K 353 K
348 K 343 K 338 K 333 K 328 K
323 K 318 K 313 K 308 K
e)
p = 110 MPa
crystallization
decreasing temperature
373 K 368 K 363 K 358 K 353 K
348 K 343 K 338 K 333 K 328 K
323 K 318 K 313 K
f)
p = 140 MPa
crystallization
decreasing temperature
373 K 368 K 363 K 358 K 353 K 348 K
343 K 338 K 333 K 328 K 323 K 318 K

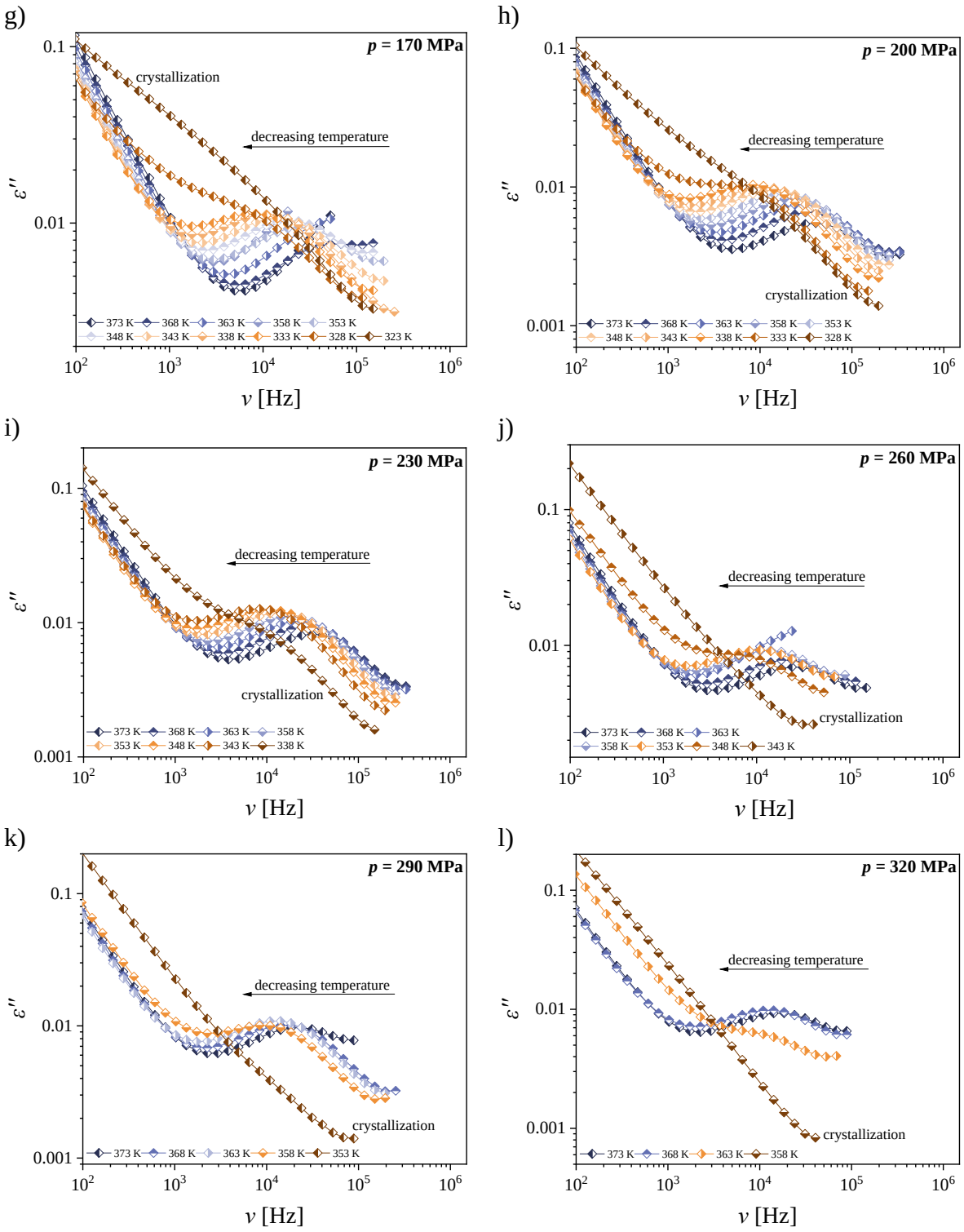


Fig. S3. The dielectric loss ε'' vs. frequency ν spectra measured under various temperatures at isobars:
a) 0 MPa; b) 20 MPa; c) 50 MPa; d) 80 MPa; e) 110 MPa; f) 140 MPa;
g) 170 MPa; h) 200 MPa; i) 230 MPa; j) 260 MPa; k) 290 MPa; l) 320 MPa.