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Supporting information
Self-assembled chitosan-PEG nanocarriers for *Cordyceps militaris* extract: process optimization and enhanced biological activities

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2022.06.27 10:30:58

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

5-5.nsz

Measurement Results

Date	: Monday, June 27, 2022 10:17:33
Measurement Type	: Particle Size
Sample Name	: 5:5
Scattering Angle	: 90
Temperature of the Holder	: 24.8 °C
Dispersion Medium Viscosity	: 0.898 mPa·s
Transmission Intensity before Meas.	: 31387
Distribution Form	: Standard
Distribution Form(Dispersity)	: Monodisperse
Representation of Result	: Scattering Light Intensity
Count Rate	: 4919 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	149.5 nm	98.8 nm	142.5 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	149.5 nm	98.8 nm	142.5 nm

Cumulant Operations

Z-Average	: 927.9 nm
PI	: 0.547

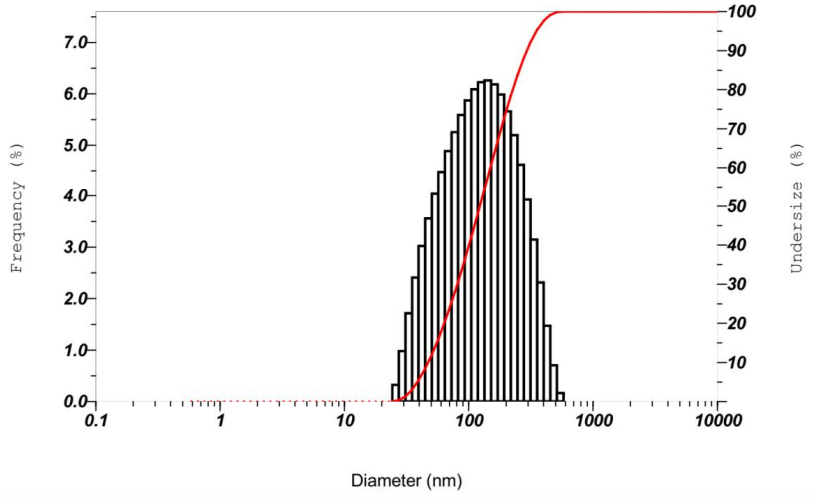

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Figure S1. Size distribution of at Cts:PEG 5:5.

2022.06.27 10:37:42

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SZ-100

7-3.nsz

Measurement Results

Date	: Monday, June 27, 2022 10:35:44
Measurement Type	: Particle Size
Sample Name	: 7:3
Scattering Angle	: 90
Temperature of the Holder	: 24.9 °C
Dispersion Medium Viscosity	: 0.897 mPa·s
Transmission Intensity before Meas.	: 33269
Distribution Form	: Standard
Distribution Form(Dispersity)	: Monodisperse
Representation of Result	: Scattering Light Intensity
Count Rate	: 3705 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	20.1 nm	14.1 nm	12.4 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	20.1 nm	14.1 nm	12.4 nm

Cumulant Operations

Z-Average	: 14.1 nm
PI	: 0.366

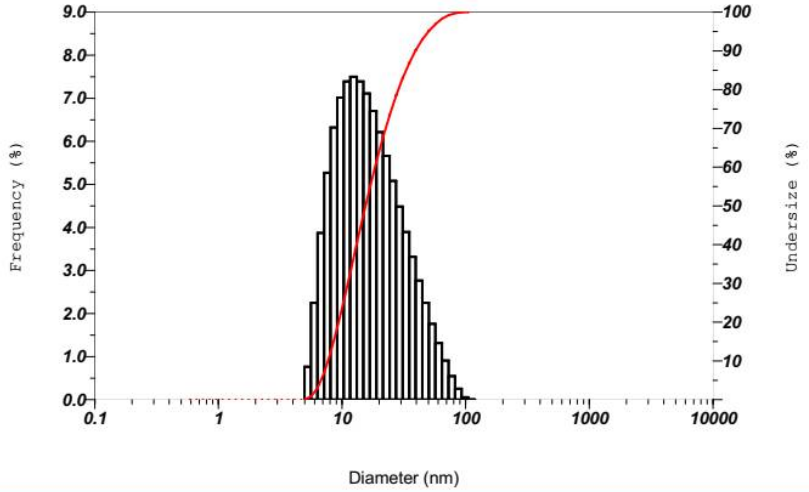

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Figure S2. Size distribution at Cts:PEG 7:3.

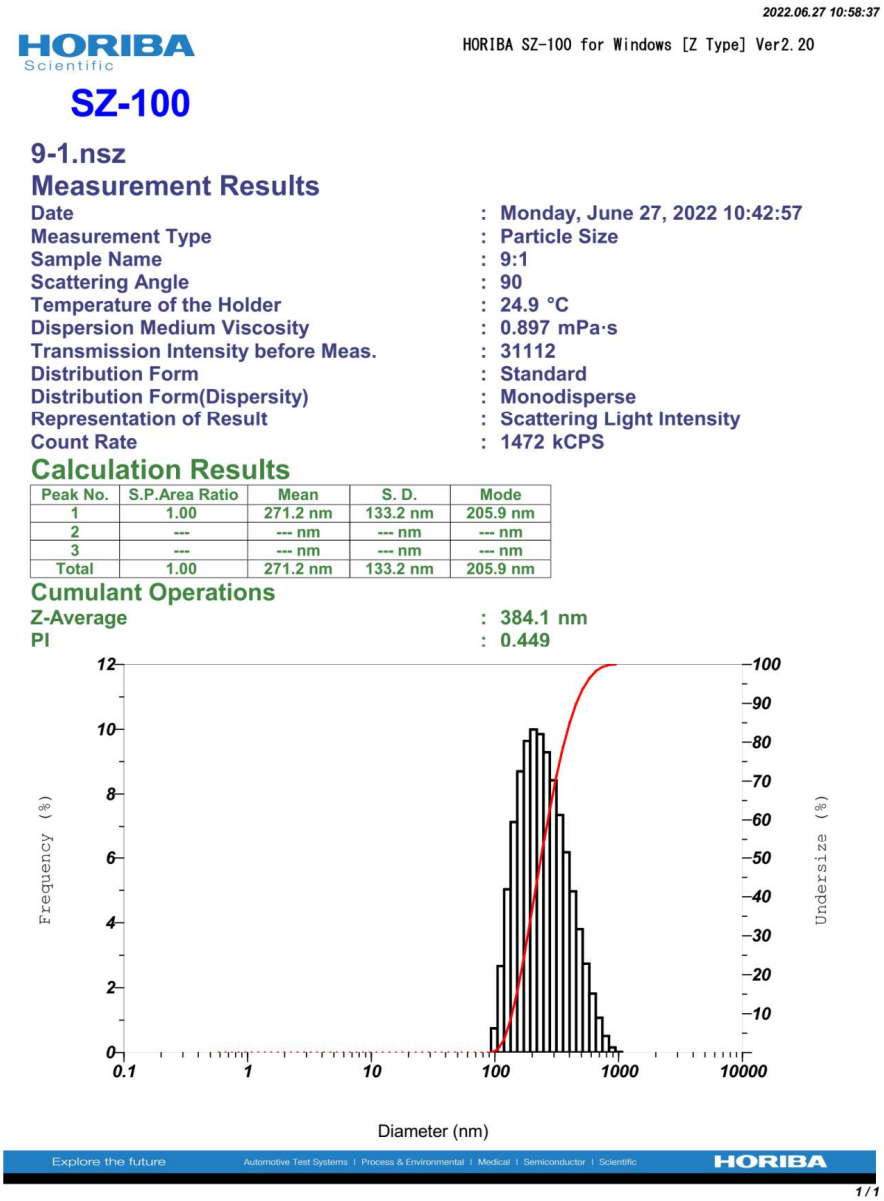

Figure S3. Size distribution of at Cts:PEG 9:1.

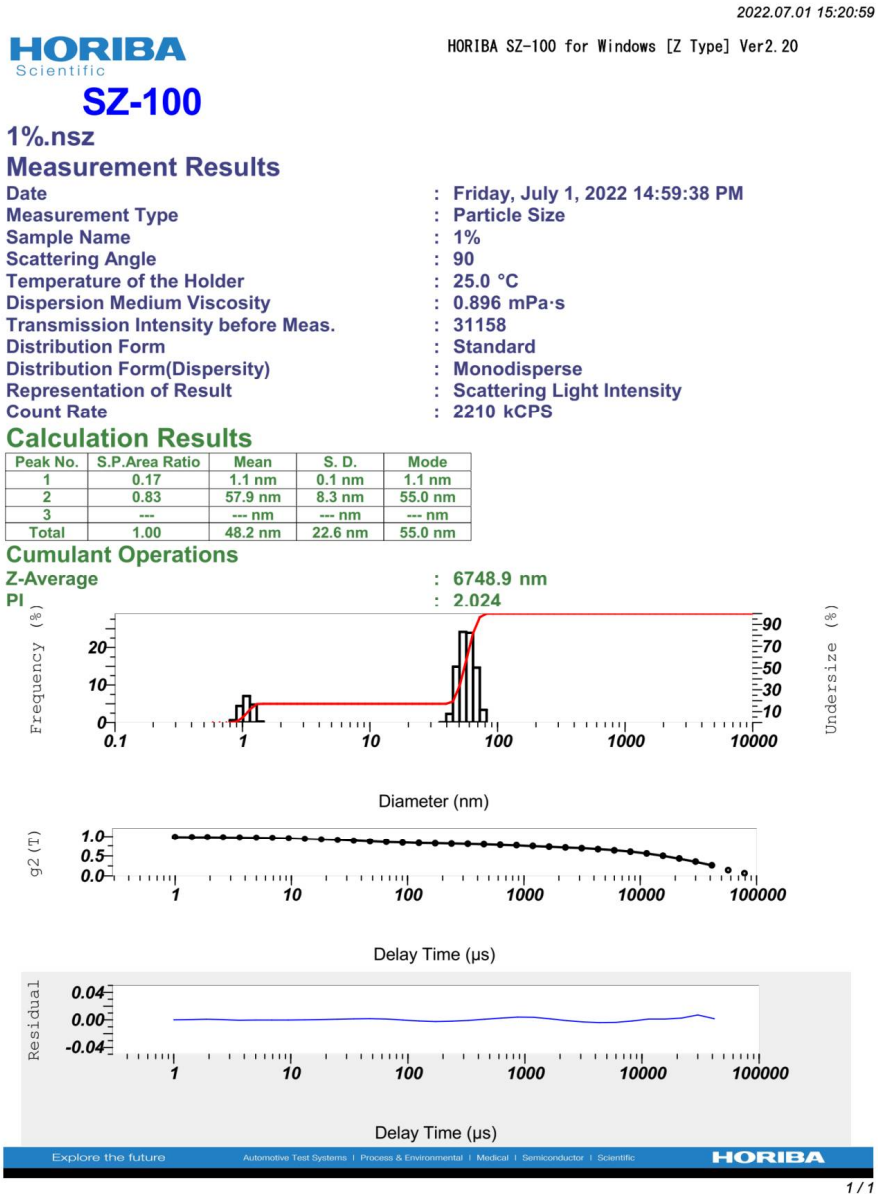

Figure S4. Size distribution of at 1.0% Tween 80.

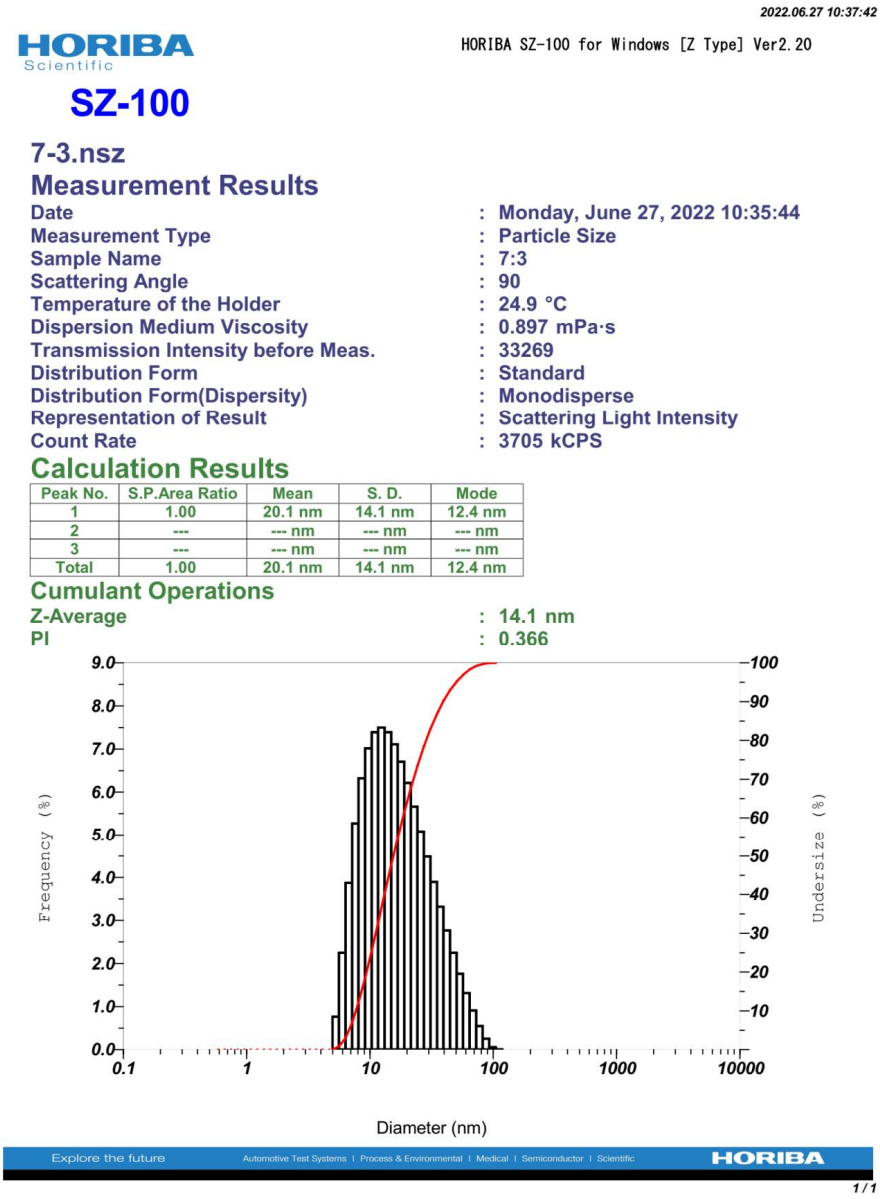

Figure S5. Size distribution of at 3.0% Tween 80.

2022.07.01 15:10:43

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

5%.nsz

Measurement Results

Date	: Friday, July 1, 2022 15:09:11 PM
Measurement Type	: Particle Size
Sample Name	: 5%
Scattering Angle	: 90
Temperature of the Holder	: 24.9 °C
Dispersion Medium Viscosity	: 0.897 mPa·s
Transmission Intensity before Meas.	: 31377
Distribution Form	: Standard
Distribution Form(Dispersity)	: Monodisperse
Representation of Result	: Scattering Light Intensity
Count Rate	: 1253 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	17.9 nm	10.7 nm	12.4 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	17.9 nm	10.7 nm	12.4 nm

Cumulant Operations

Z-Average	: 14.0 nm
PI	: 0.308

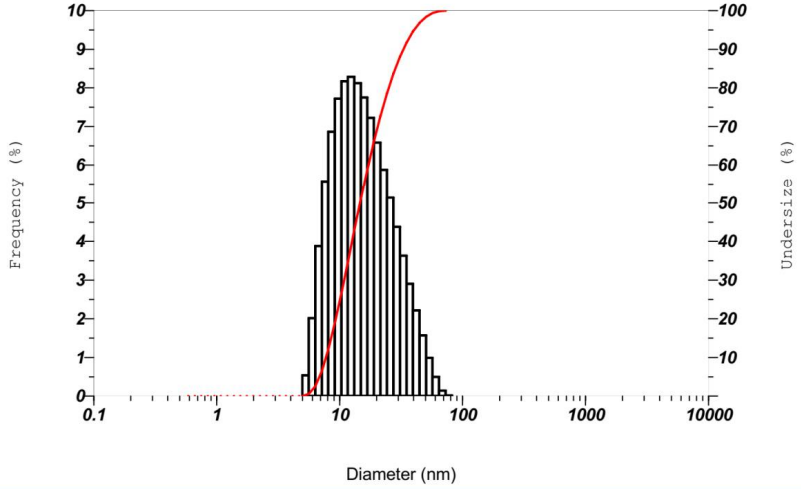

Figure S6. Size distribution of at 5.0% Tween 80.

2022.07.01 15:21:57

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

7%.nsz

Measurement Results

Date	:	Friday, July 1, 2022 14:55:14 PM
Measurement Type	:	Particle Size
Sample Name	:	7%
Scattering Angle	:	90
Temperature of the Holder	:	25.0 °C
Dispersion Medium Viscosity	:	0.895 mPa·s
Transmission Intensity before Meas.	:	30703
Distribution Form	:	Standard
Distribution Form(Dispersity)	:	Monodisperse
Representation of Result	:	Scattering Light Intensity
Count Rate	:	3267 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	9.9 nm	4.9 nm	7.6 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	9.9 nm	4.9 nm	7.6 nm

Cumulant Operations

Z-Average	:	9.0 nm
PI	:	0.045

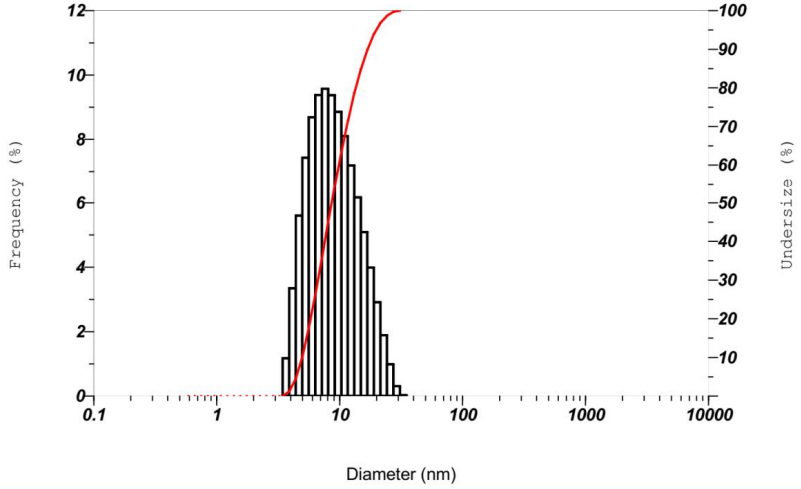

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Figure S7. Size distribution of at 7.0% Tween 80.

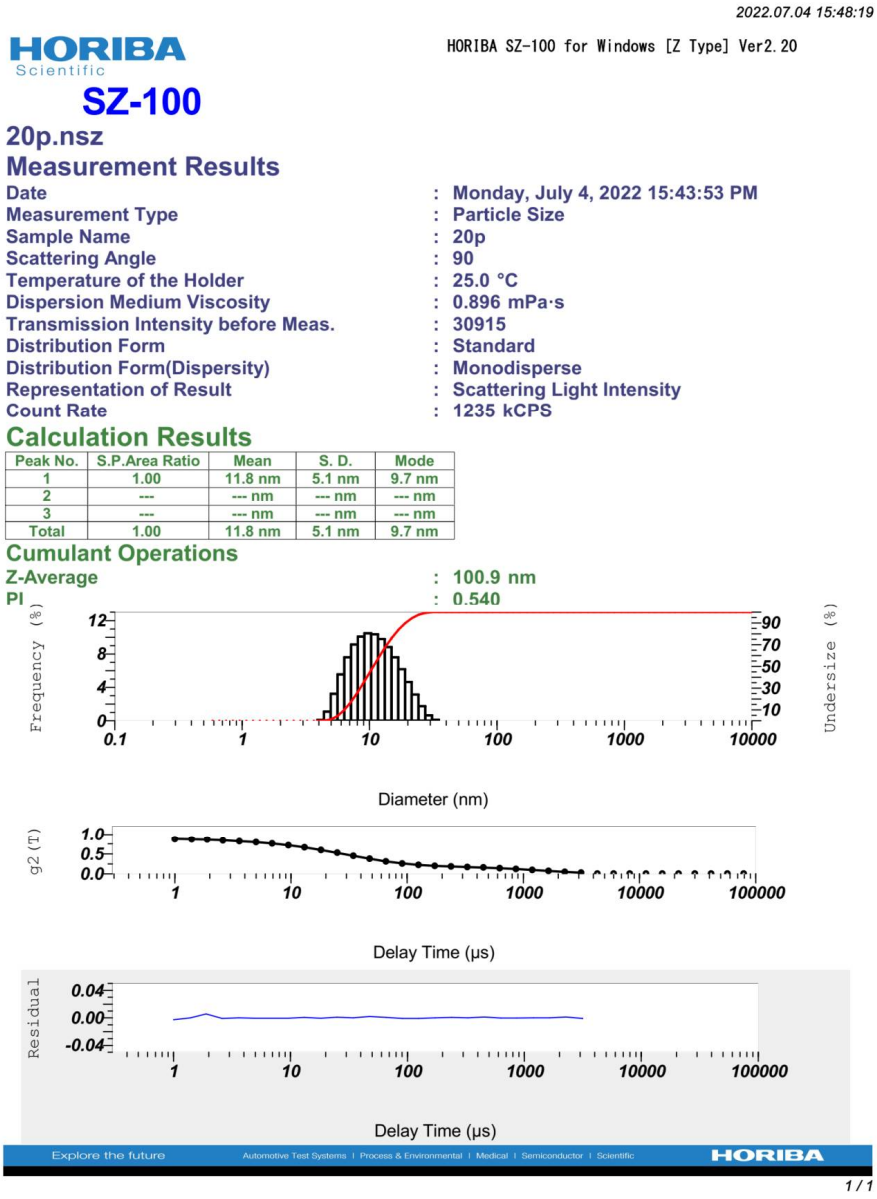

Figure S8. Size distribution of NCCs at of 20 min of stirring.

2022.07.25 17:37:26

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

B.nsz

Measurement Results

Date	:	Monday, July 25, 2022 17:14:46
Measurement Type	:	Particle Size
Sample Name	:	B
Scattering Angle	:	90
Temperature of the Holder	:	25.0 °C
Dispersion Medium Viscosity	:	0.896 mPa·s
Transmission Intensity before Meas.	:	33411
Distribution Form	:	Standard
Distribution Form(Dispersity)	:	Polydisperse
Representation of Result	:	Scattering Light Intensity
Count Rate	:	1206 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	14.4 nm	6.3 nm	12.4 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	14.4 nm	6.3 nm	12.4 nm

Cumulant Operations

Z-Average	:	12.2 nm
PI	:	0.267

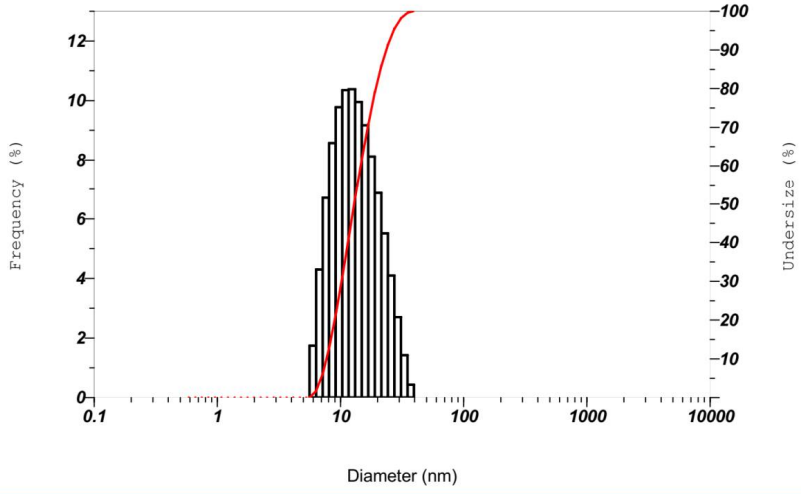

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Figure S9. Size distribution of NCCs at of 30 min of stirring.

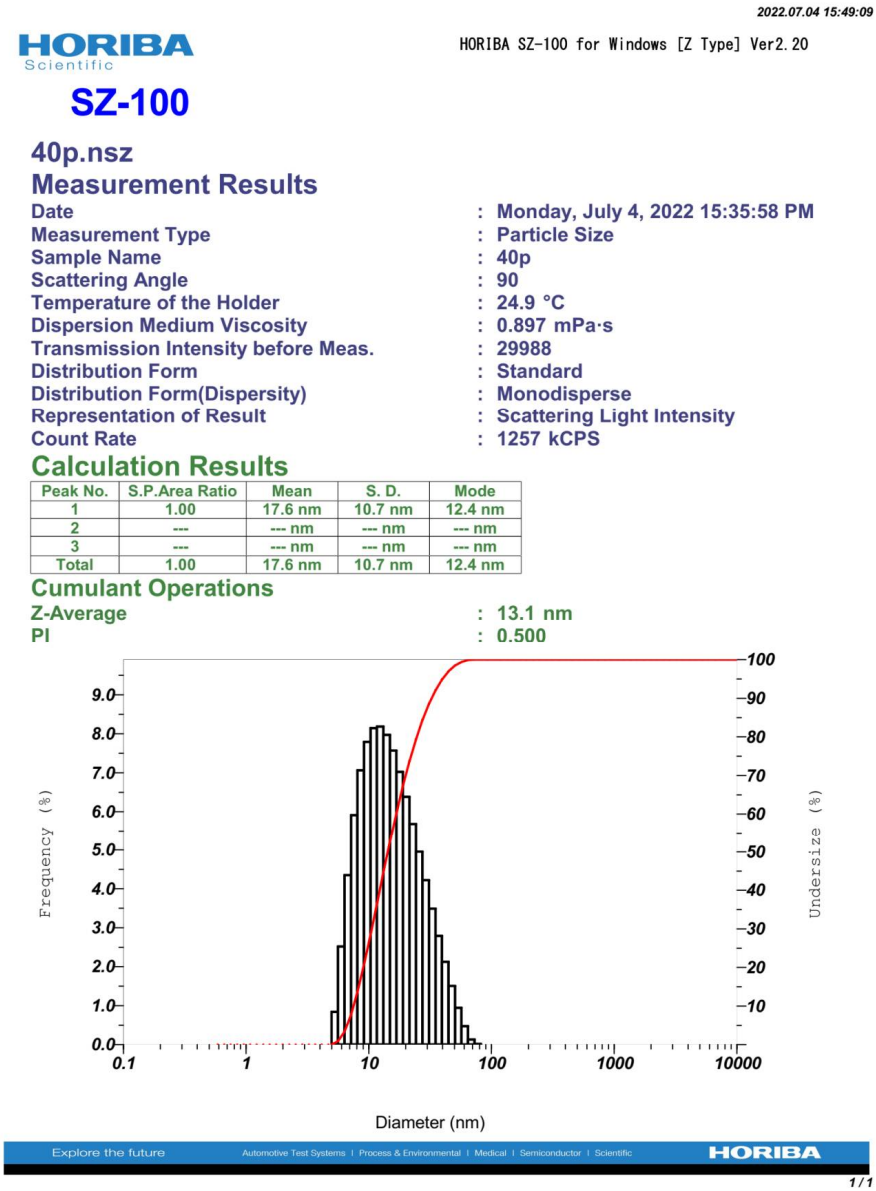

Figure S10. Size distribution of NCCs at of 40 min of stirring.

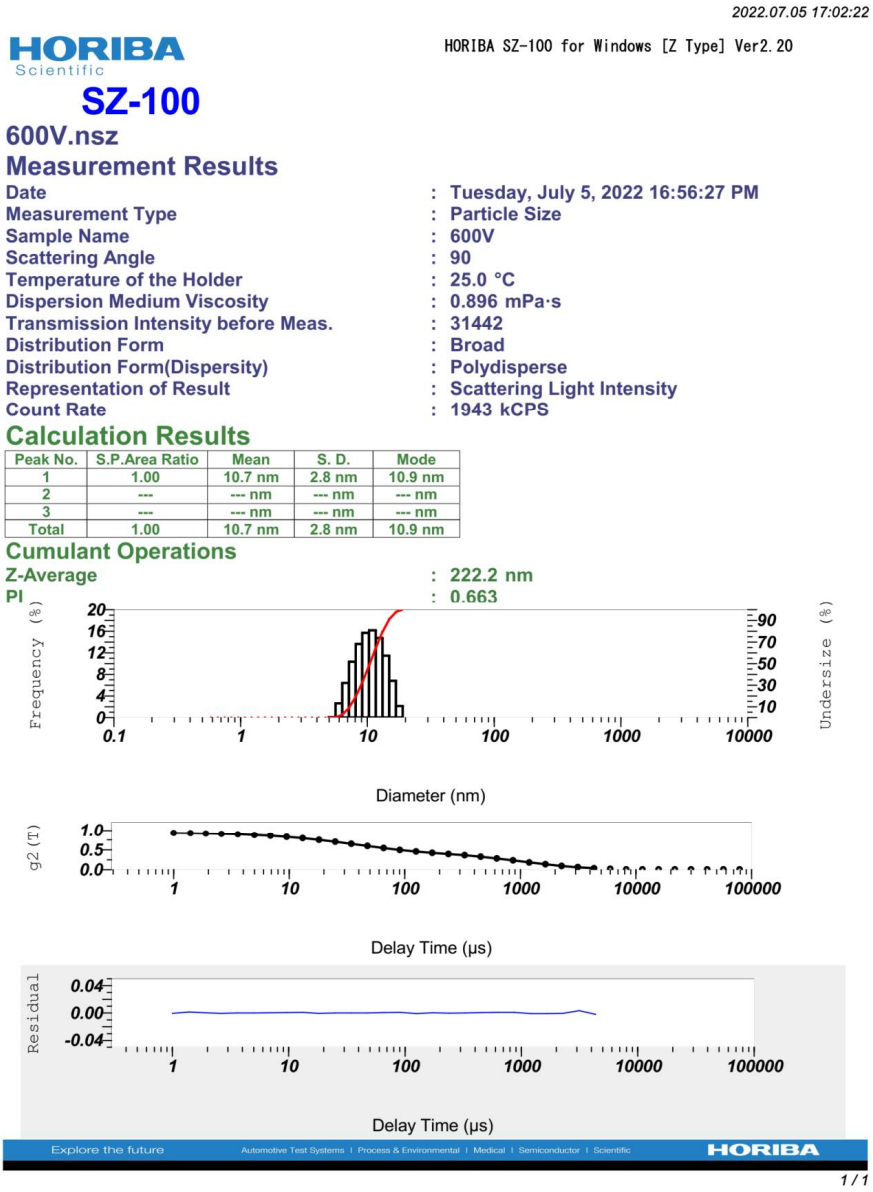

Figure S11. Size distribution of NCCs at 600 rpm.

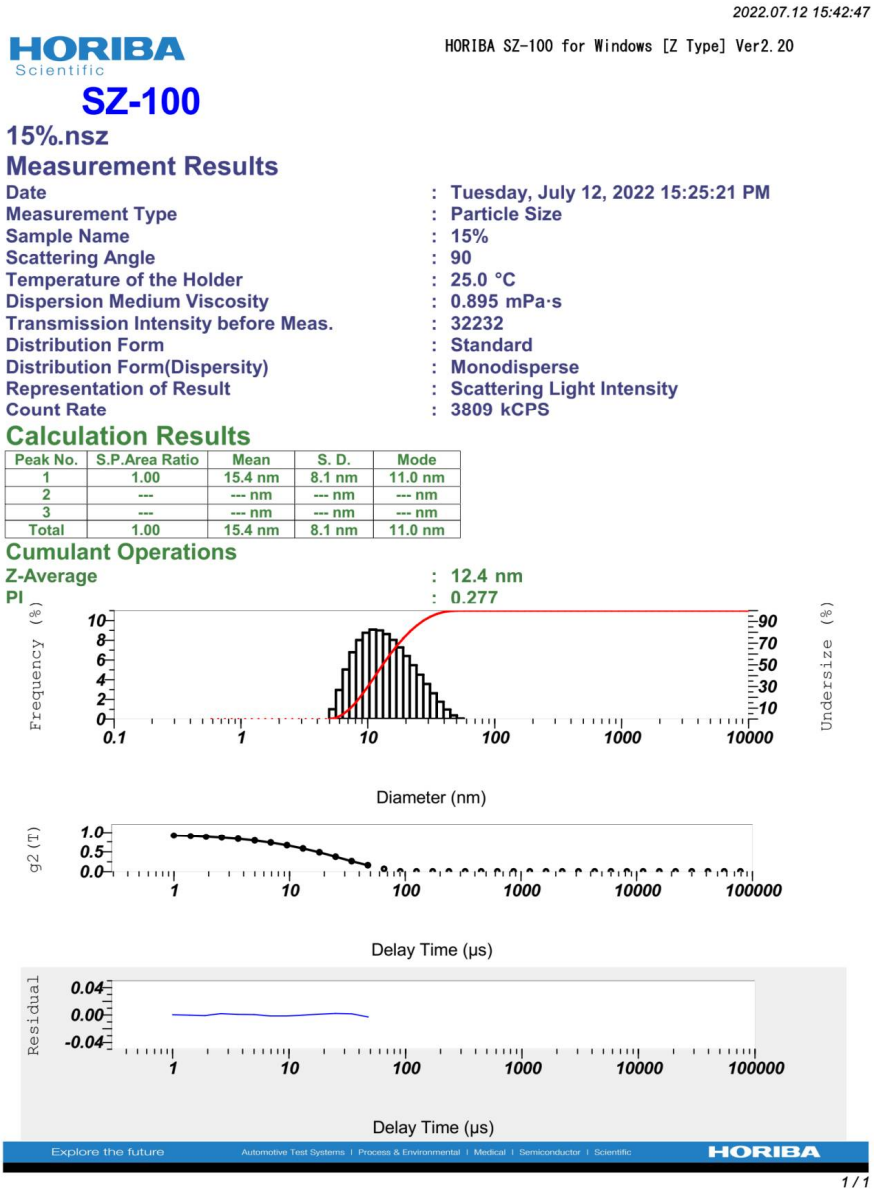

Figure S12. Size distribution of NCCs at 900 rpm.

2022.07.05 17:02:41

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

1200V.nsz

Measurement Results

Date	:	Tuesday, July 5, 2022 16:45:15 PM
Measurement Type	:	Particle Size
Sample Name	:	1200V
Scattering Angle	:	90
Temperature of the Holder	:	24.8 °C
Dispersion Medium Viscosity	:	0.898 mPa·s
Transmission Intensity before Meas.	:	32562
Distribution Form	:	Broad
Distribution Form(Dispersity)	:	Polydisperse
Representation of Result	:	Scattering Light Intensity
Count Rate	:	1367 kCPS

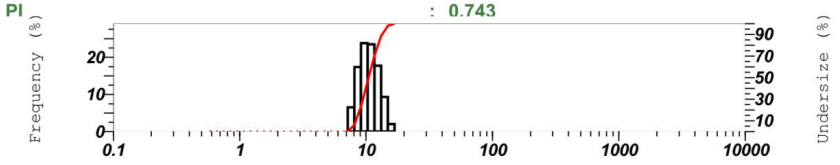
Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	10.7 nm	1.9 nm	9.9 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	10.7 nm	1.9 nm	9.9 nm

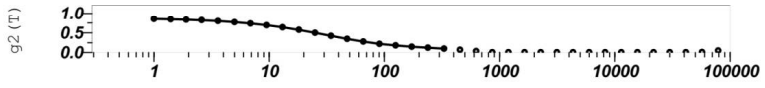
Cumulant Operations

Z-Average : 20.8 nm

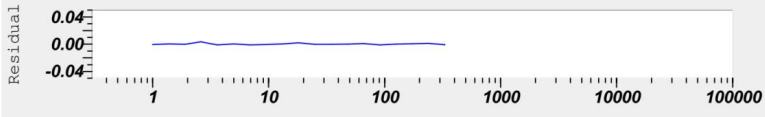
PI : 0.743



Diameter (nm)



Delay Time (μs)



Delay Time (μs)

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Figure S13. Size distribution of NCCs at 1200 rpm.

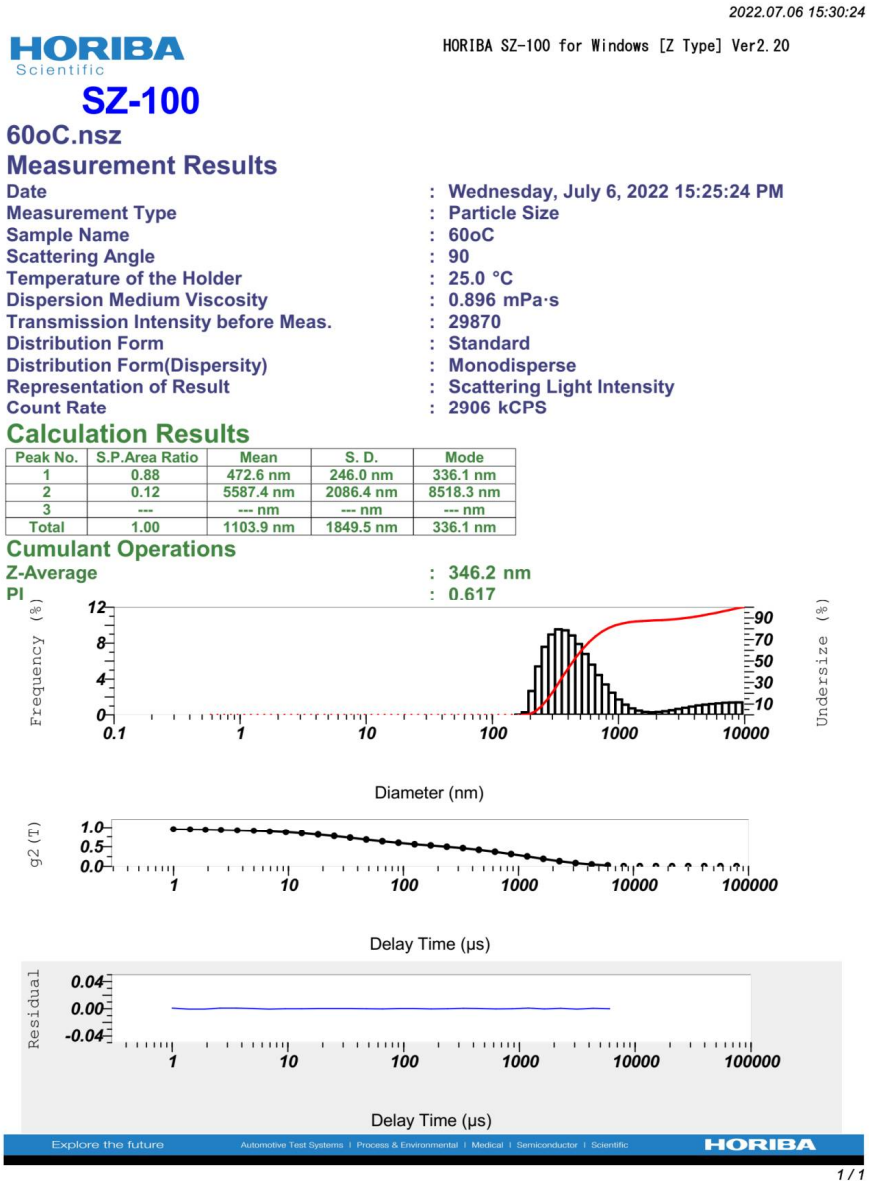

Figure S14. Size distribution of NCCs at 60°C of PIT.

2022.07.25 17:36:33

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HORIBA SZ-100 for Windows [Z Type] Ver2.20

SZ-100

A.nsz

Measurement Results

Date	:	Monday, July 25, 2022 17:20:46
Measurement Type	:	Particle Size
Sample Name	:	A
Scattering Angle	:	90
Temperature of the Holder	:	25.0 °C
Dispersion Medium Viscosity	:	0.896 mPa·s
Transmission Intensity before Meas.	:	32546
Distribution Form	:	Standard
Distribution Form(Dispersity)	:	Polydisperse
Representation of Result	:	Scattering Light Intensity
Count Rate	:	3459 kCPS

Calculation Results

Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	11.2 nm	1.6 nm	11.0 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	11.2 nm	1.6 nm	11.0 nm

Cumulant Operations

Z-Average	:	11.0 nm
PI	:	0.275

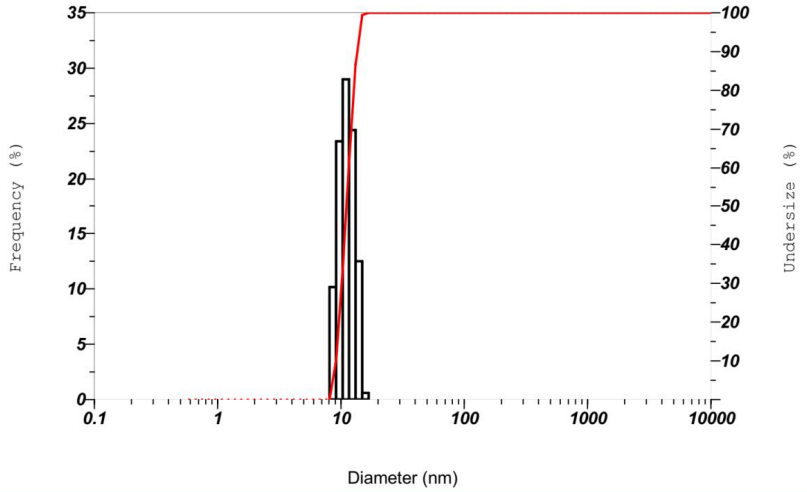

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Figure S15. Size distribution of NCCs at 70°C of PIT.

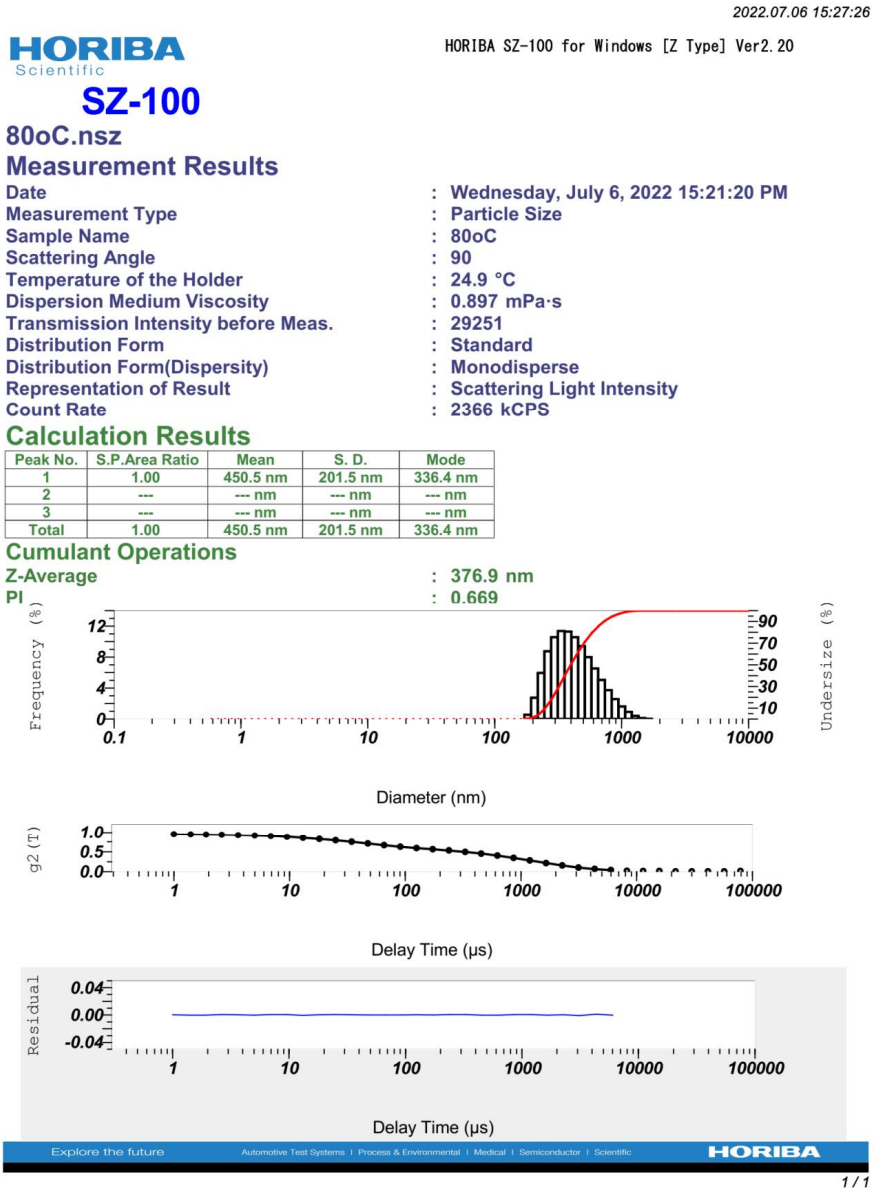

Figure S16. Size distribution of NCCs at 80°C of PIT.

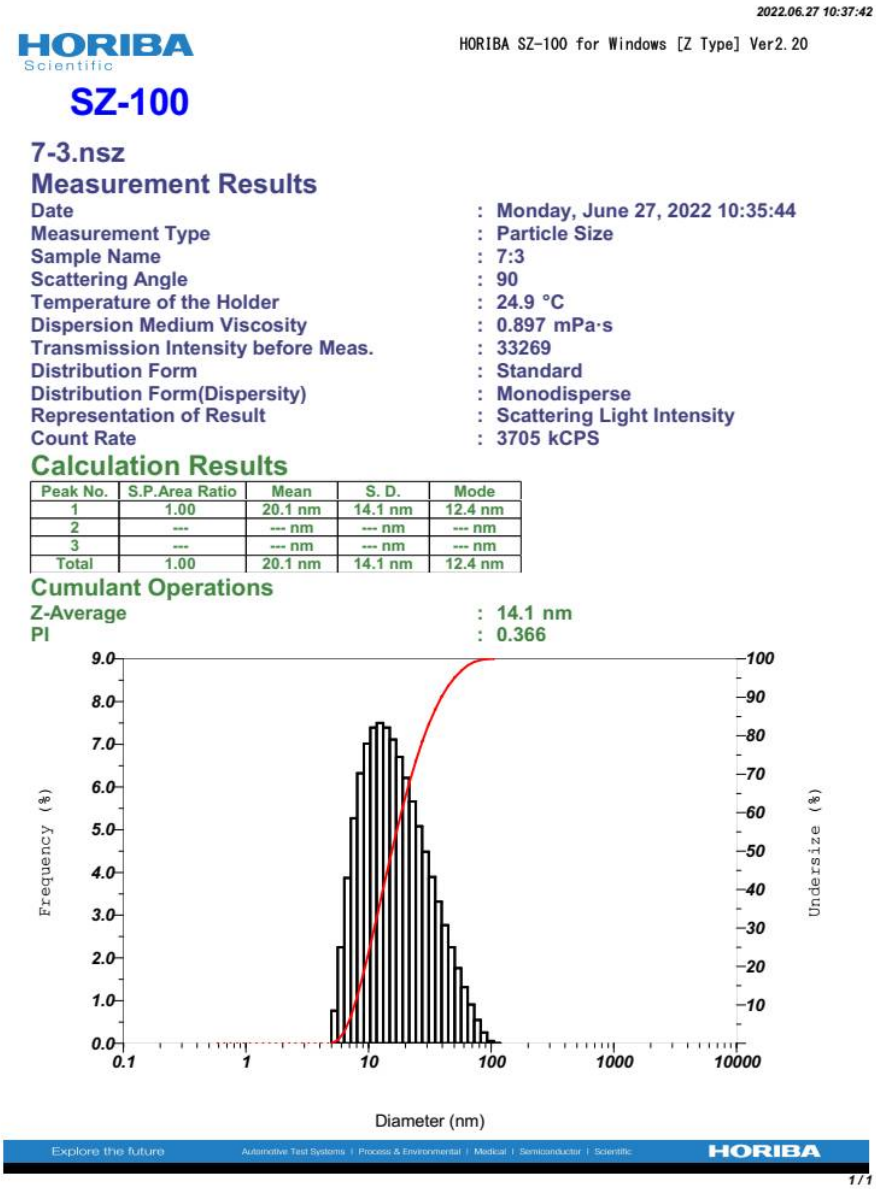

Figure S17. Size distribution of NCCs at optimized condition (first measurement).