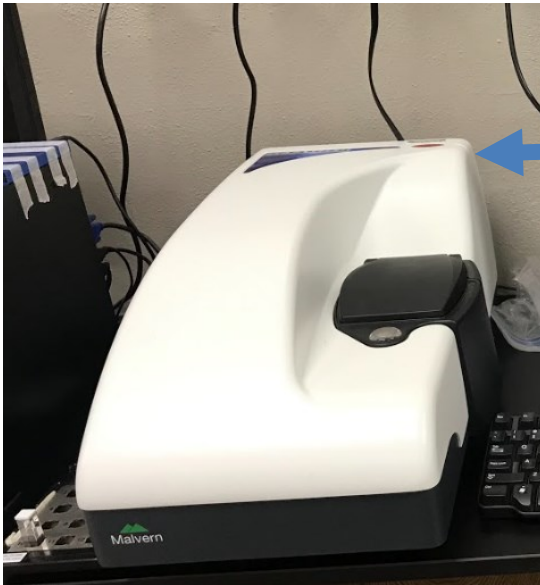
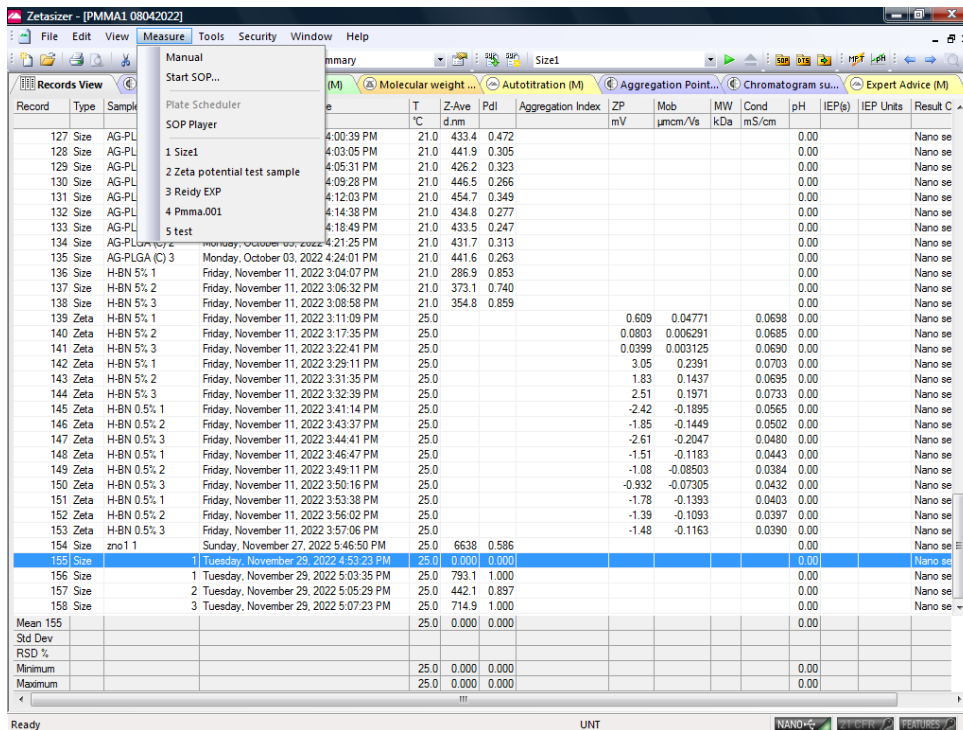


Operation manual for ZetaSizer Nano ZS90

1. log onto the computer connected to the ZetaSizer Nano ZS90.
2. Turn the power on from the back of the system. The system will beep during initialization.

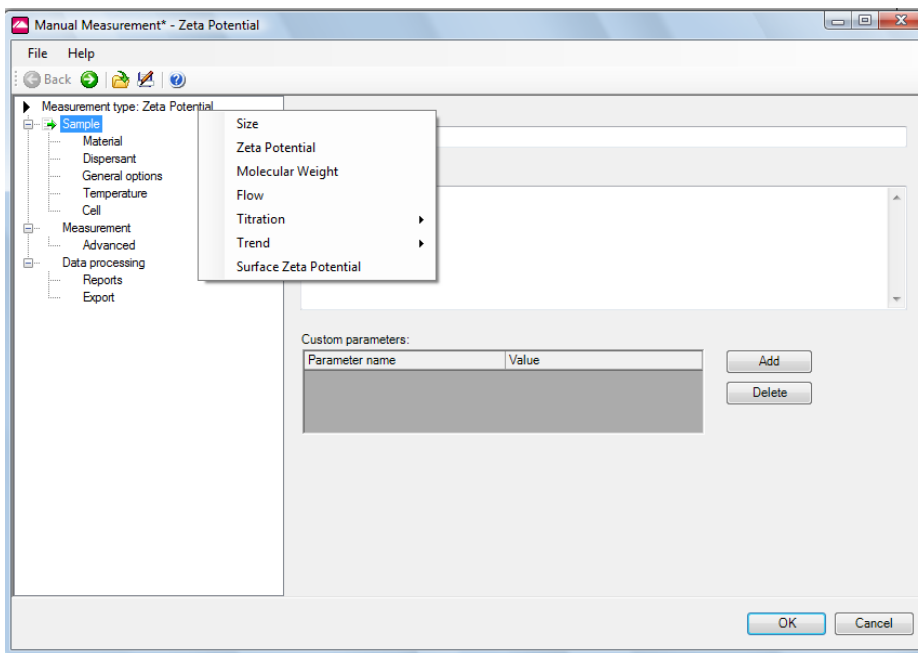


3. Run the software “Zetasizer” on the desktop. Select the Manual from the dropdown list of Measure on the toolbar.

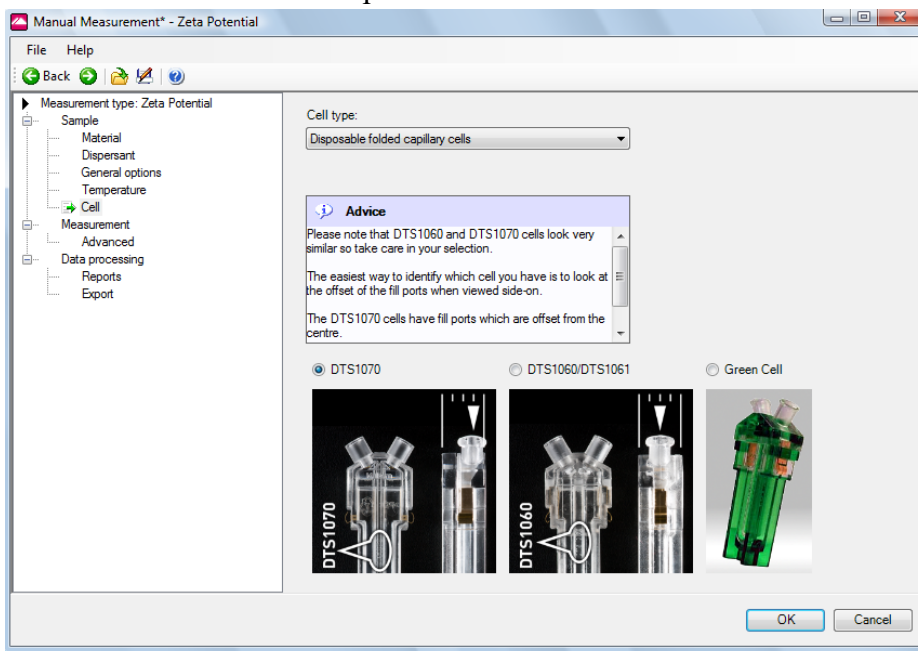


Record	Type	Sample	T °C	Z-Ave d.nm	Pdl	Aggregation Index	ZP mV	Mob µcm ² /Vs	MW kDa	Cond mS/cm	pH	IEP(s)	IEP Units	Result C
127	Size	AG-PL	4:00:39 PM	21.0	433.4	0.472								Nano se
128	Size	AG-PL	4:03:05 PM	21.0	441.9	0.305								Nano se
129	Size	AG-PL	4:05:31 PM	21.0	426.2	0.323								Nano se
130	Size	AG-PL	4:09:28 PM	21.0	446.5	0.266								Nano se
131	Size	AG-PL	4:12:03 PM	21.0	454.7	0.349								Nano se
132	Size	AG-PL	4:14:38 PM	21.0	434.8	0.277								Nano se
133	Size	AG-PL	4:18:49 PM	21.0	433.5	0.247								Nano se
134	Size	AG-PL	Monday, October 03, 2022 4:21:25 PM	21.0	431.7	0.313								Nano se
135	Size	AG-PLGA (C) 3	Monday, October 03, 2022 4:24:01 PM	21.0	441.6	0.263								Nano se
136	Size	H-BN 5% 1	Friday, November 11, 2022 3:04:07 PM	21.0	286.9	0.853								Nano se
137	Size	H-BN 5% 2	Friday, November 11, 2022 3:06:32 PM	21.0	373.1	0.740								Nano se
138	Size	H-BN 5% 3	Friday, November 11, 2022 3:08:58 PM	21.0	354.8	0.859								Nano se
139	Zeta	H-BN 5% 1	Friday, November 11, 2022 3:11:09 PM	25.0			0.609	0.04771		0.0698	0.00			Nano se
140	Zeta	H-BN 5% 2	Friday, November 11, 2022 3:17:35 PM	25.0			0.0803	0.006291		0.0685	0.00			Nano se
141	Zeta	H-BN 5% 3	Friday, November 11, 2022 3:22:41 PM	25.0			0.0399	0.003125		0.0690	0.00			Nano se
142	Zeta	H-BN 5% 1	Friday, November 11, 2022 3:29:11 PM	25.0			3.05	0.2391		0.0703	0.00			Nano se
143	Zeta	H-BN 5% 2	Friday, November 11, 2022 3:31:35 PM	25.0			1.83	0.1437		0.0695	0.00			Nano se
144	Zeta	H-BN 5% 3	Friday, November 11, 2022 3:32:39 PM	25.0			2.51	0.1971		0.0733	0.00			Nano se
145	Zeta	H-BN 0.5% 1	Friday, November 11, 2022 3:41:14 PM	25.0			-2.42	-0.1895		0.0565	0.00			Nano se
146	Zeta	H-BN 0.5% 2	Friday, November 11, 2022 3:43:37 PM	25.0			-1.85	-0.1449		0.0502	0.00			Nano se
147	Zeta	H-BN 0.5% 3	Friday, November 11, 2022 3:44:41 PM	25.0			-2.61	-0.2047		0.0480	0.00			Nano se
148	Zeta	H-BN 0.5% 1	Friday, November 11, 2022 3:46:47 PM	25.0			-1.51	-0.1183		0.0443	0.00			Nano se
149	Zeta	H-BN 0.5% 2	Friday, November 11, 2022 3:49:11 PM	25.0			-1.08	-0.08503		0.0384	0.00			Nano se
150	Zeta	H-BN 0.5% 3	Friday, November 11, 2022 3:50:16 PM	25.0			-0.932	-0.07305		0.0432	0.00			Nano se
151	Zeta	H-BN 0.5% 1	Friday, November 11, 2022 3:53:38 PM	25.0			-1.78	-0.1393		0.0403	0.00			Nano se
152	Zeta	H-BN 0.5% 2	Friday, November 11, 2022 3:56:02 PM	25.0			-1.39	-0.1093		0.0397	0.00			Nano se
153	Zeta	H-BN 0.5% 3	Friday, November 11, 2022 3:57:06 PM	25.0			-1.48	-0.1163		0.0390	0.00			Nano se
154	Size	zno 1 1	Sunday, November 27, 2022 5:46:50 PM	25.0	6638	0.586								Nano se
155	Size	1	Tuesday, November 29, 2022 5:03:23 PM	25.0	0.000	0.000					0.00			Nano se
156	Size	1	Tuesday, November 29, 2022 5:03:35 PM	25.0	793.1	1.000					0.00			Nano se
157	Size	2	Tuesday, November 29, 2022 5:05:29 PM	25.0	442.1	0.897					0.00			Nano se
158	Size	3	Tuesday, November 29, 2022 5:07:23 PM	25.0	714.9	1.000					0.00			Nano se
Mean 155				25.0	0.000	0.000					0.00			
Std Dev														
RSD %														
Minimum				25.0	0.000	0.000					0.00			
Maximum				25.0	0.000	0.000					0.00			

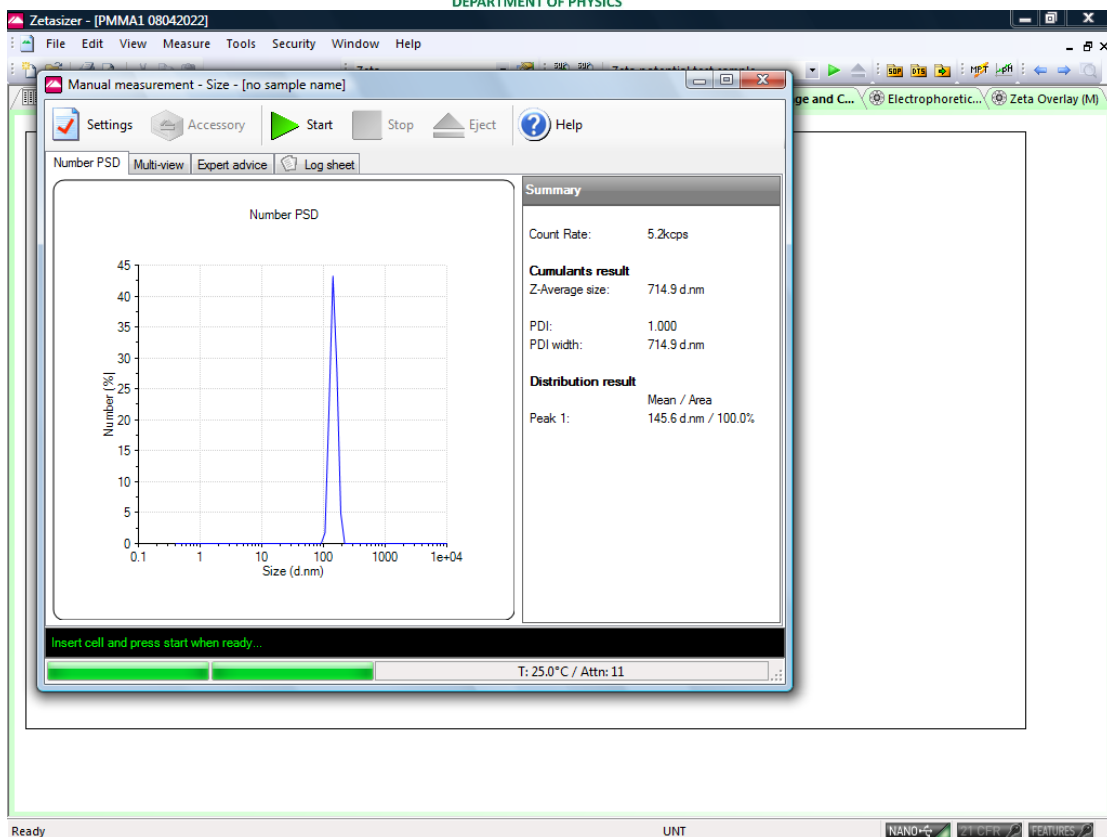
- Follow the guidance on the left one by one. Make sure the selected option is fitted for your sample and application. Available measurement types are “Size”, “Zeta Potential” and “Molecular Weight”.



Make sure the cell you used is the one selected from the setup. Make sure to choose a folder and name for the “Export” location.



- Once saved the manual setup, you can recall it in the future to repeat measurements, or make any edits based on the saved setup parameters. A window of the measurement will appear after setup. Mount your sample cell in the holder and start measurement.



6. Once you are done with the ZetaSizer Nano ZS90, close the software, turn off the power of the system, and log out of the computer.
7. Fill in your name, date, time in, and time out on the logbook.

Learning materials

[1] [User manual](#) from the manufacturer. Including system information and working principles.

[2] [Accessories manual](#) on cuvettes and cells. Detailed guidance on sample preparation.

[3] Introductory video on Dynamic Light Scattering:
<https://www.youtube.com/watch?v=ET6S03GeMKE>