

# default configuration setup of DLS

1. Make sure every component (laser source, motor, digital correlator, detector, temperature controller) is on; the shutter is open.
2. Click on software icon.



- 3. Accept default configuration

The screenshot displays the ALV-5000/E software interface for Windows 95/NT 4.0. The main window is titled "ALV-5000/E/JEPP & ALV-60XD for WINDOWS-95/NT 4.0 Software". The interface includes a menu bar (File, Edit, Window, Sample, QuickSet, Run, Setup, Fit, Display, Script, Help) and a toolbar with various icons. The main display area is divided into several panels:

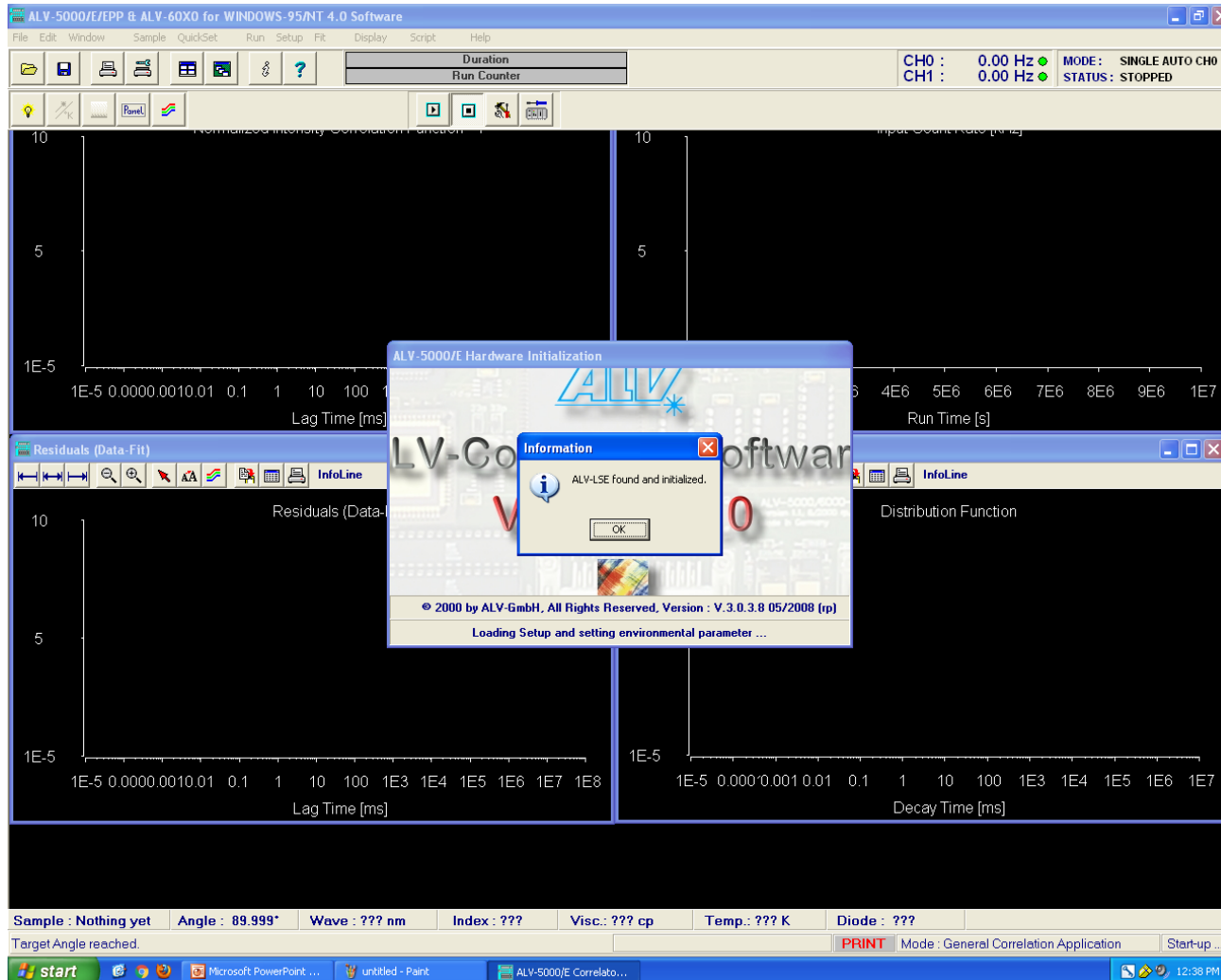
- Top Panel:** Shows "Duration" and "Run Counter" fields. On the right, it displays "CH0 : 0.00 Hz", "CH1 : 0.00 Hz", "MODE : SINGLE AUTO CH0", and "STATUS : STOPPED".
- Left Panel:** A graph showing "Normalized Intensity Correlation Function" vs "Lag Time [ms]". The y-axis ranges from 1E-5 to 10, and the x-axis ranges from 1E-5 to 100.
- Right Panel:** A graph showing "Input Count Rate [Hz]" vs "Run Time [s]". The y-axis ranges from 1E-5 to 10, and the x-axis ranges from 4E6 to 1E7.
- Bottom Panel:** A graph showing "Residuals (Data-Fit)" vs "Lag Time [ms]". The y-axis ranges from 1E-5 to 10, and the x-axis ranges from 1E-5 to 1E8.

A "Confirm" dialog box is overlaid on the interface, asking: "The last time you used this software, Stepper Motor Control and/or Temperature Measurement and/or Laser Intensity Measurement was initialized. Do you want to use this configuration this time as well?". The "Yes" button is highlighted with a red arrow. Below the dialog, a status bar shows "© 2000 by ALV-GmbH, All Rights Reserved, Version : V.3.0.3.8 05/2008 (rp)" and "Loading Setup and setting environmental parameter ...".

At the bottom of the window, a status bar displays various parameters: "Sample : Nothing yet", "Angle : 90.000°", "Wave : ??? nm", "Index : ???", "Visc.: ??? cp", "Temp.: ??? K", "Diode : ???". There are also "PRINT" and "Start-up ..." buttons.

The Windows taskbar at the bottom shows the "start" button and several open applications: "Microsoft PowerPoint ...", "untitled - Paint", and "ALV-5000/E Correlato...". The system clock shows "12:37 PM".

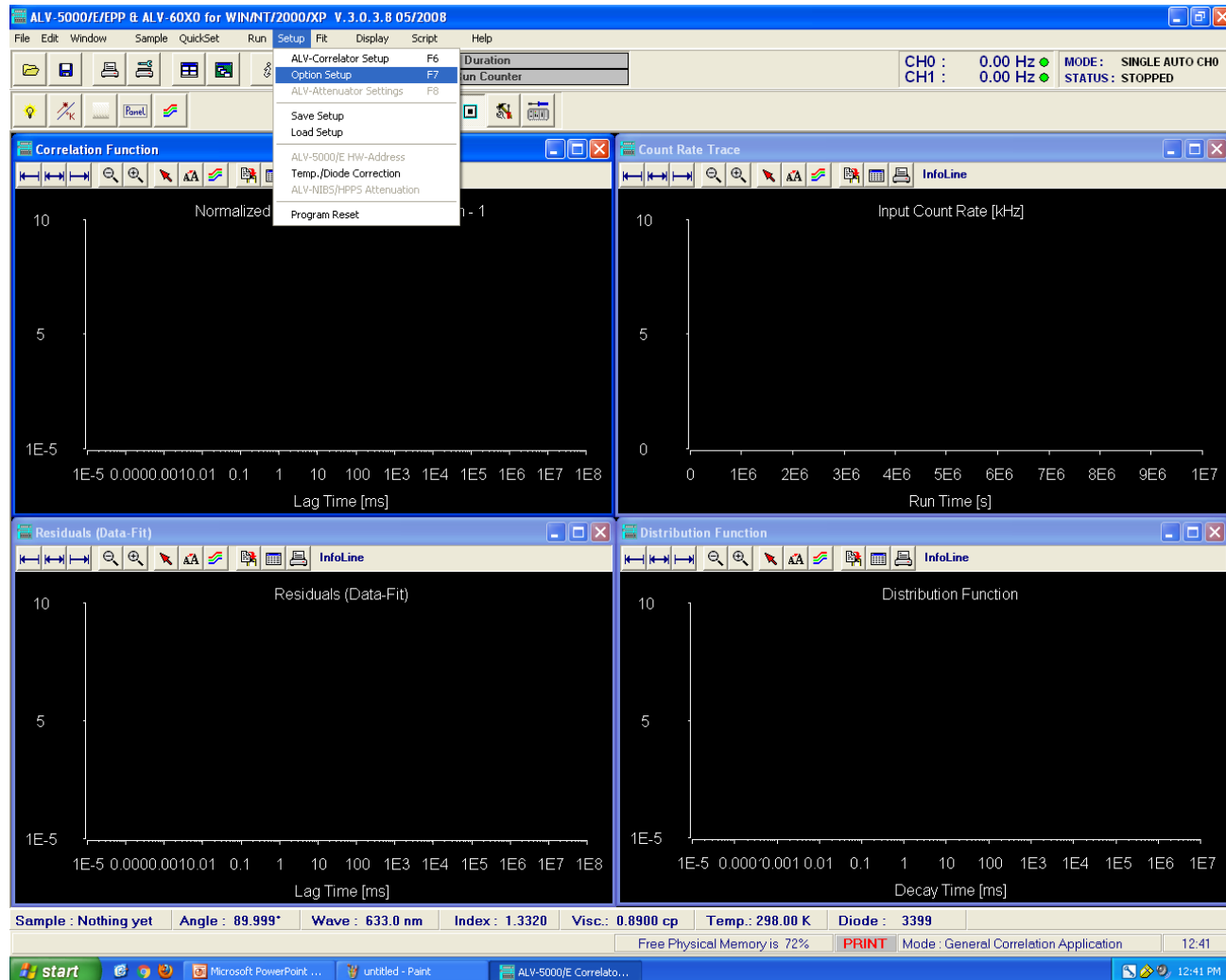
- Successful initiation will be notified as follows



- Sometime communication failure between PC and devices or miss click results in lost of default setup.

# How to manually set up the default configuration

- 1. Reboot PC; initiate software; setup > option setup; (or hotkey F7)



## 2. Choose AIV/LSE-5002/3 on port COM1

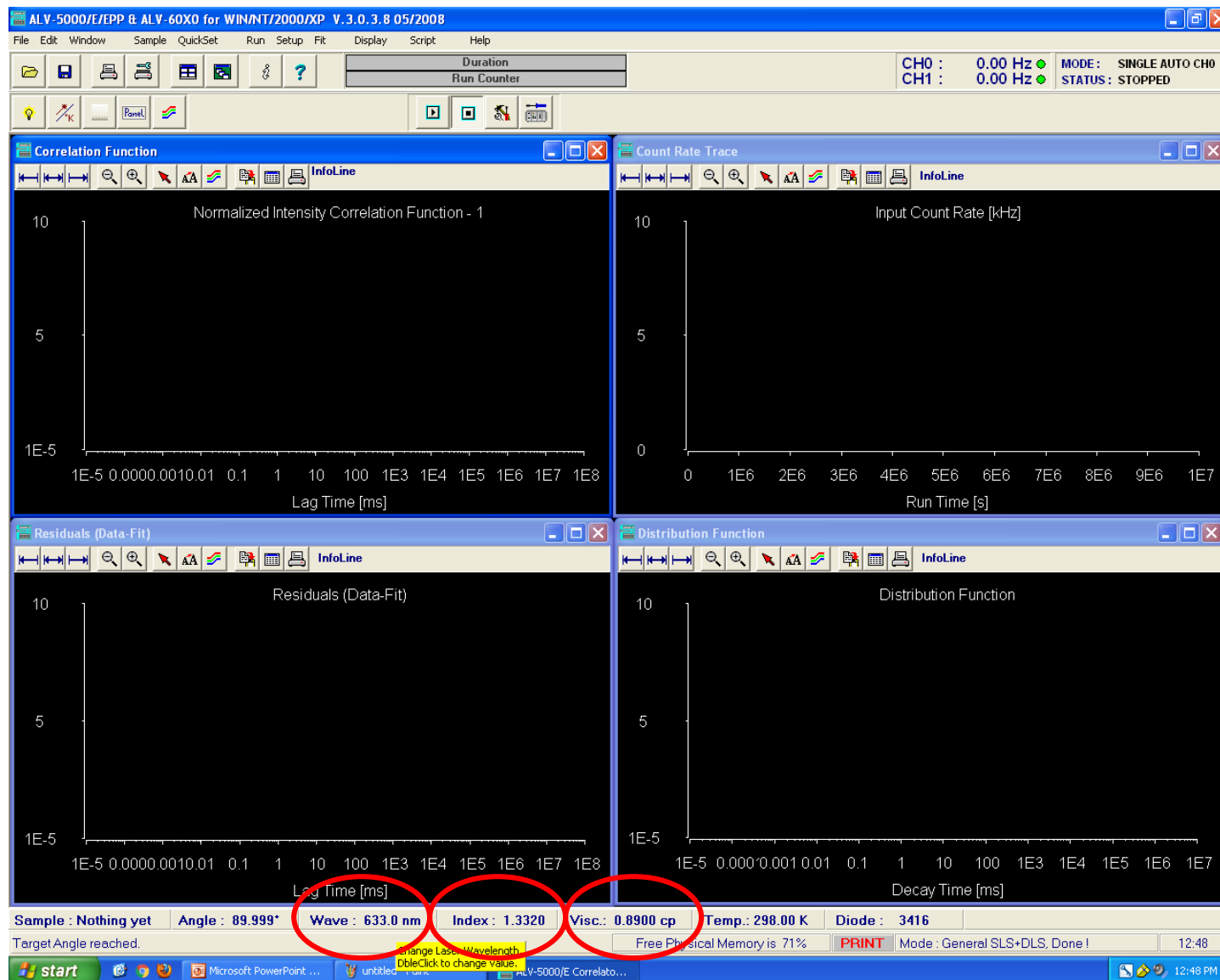
The screenshot displays the ALV-5000/E/EPP & ALV-60XO software interface for Windows NT/2000/XP. The main window shows a "Correlation Function" plot of Normalized Intensity Correlation Function - 1 and a "Count Rate Trace" plot of Input Count Rate [kHz]. A dialog box titled "ALV-Correlator Options Setup" is open, showing the following settings:

- ALV-LSE Support:**
  - No additional Hardware is present
  - ALV-LSE is present on Port
  - ALV/LSE-5002/3 is present on Port COM1
  - ALV/LSE-5004 is present on Port
- Control Goniometer Type:** ALV/CGS-8F, CGS-5022F
- Motor Speed:** Medium
- Angle Encoder present
- Keep "Emergency Motor Stop Button" on top

The dialog also includes sections for "General" (User Name: ALV-User, Password: [empty], Online-Display Rate: Fast (2/s), "Run Done" Beep Active checked, Rerandomized instead of averaged CF unchecked) and "Detector and Detector Safety" (Count Rate Alert at 5000.000 kHz, "Pseudocross" detection used unchecked).

At the bottom of the software interface, the status bar shows: Sample: Nothing yet, Angle: 89.999°, Wave: 633.0 nm, Index: 1.3320, Visc.: 0.8900 cp, Temp.: 297.99 K, Diode: 3410. The system tray shows the Start button and several open applications, including Microsoft PowerPoint, Paint, and the ALV-5000/E Correlator software. The system clock shows 12:44 PM.

### 3. Enter wavelength(633nm), index and visc (depending on the solution)





# 4. Adjust toluene solvent parameters

The screenshot displays the ALV-5000/E/EPP & ALV-60X0 software interface for Windows NT/2000/XP, version 3.0.3.8, dated 05/2008. The main window is titled "General Correlation Application" and includes a menu bar with options: File, Edit, Window, Sample, QuickSet, Run, Setup, Fit, Display, Script, and Help. A toolbar contains icons for file operations and analysis. The interface is divided into several panels:

- General Correlation Application:** Shows "Duration" settings for CH0 (0.00 Hz) and CH1 (0.00 Hz), with "MODE: SINGLE AUTO CH0" and "STATUS: STOPPED".
- Correlation Function:** A plot titled "Normalized Intensity Correlation" with a y-axis from 1E-5 to 10 and an x-axis "Lag Time [ms]" from 1E-5 to 1E8.
- Count Rate Trace:** A plot titled "Input Count Rate [kHz]" with a y-axis from 0 to 10 and an x-axis "Run Time [s]" from 0 to 1E7.
- Residuals (Data-Fit):** A plot titled "Residuals (Data-Fit)" with a y-axis from 1E-5 to 10 and an x-axis "Lag Time [ms]" from 1E-5 to 1E8.
- Distribution Function:** A plot titled "Distribution Function" with a y-axis from 1E-5 to 10 and an x-axis "Decay Time [ms]" from 1E-5 to 1E7.

A context menu is open over the "Correlation Function" plot, listing options: "Particle Sizing, Single Angle", "Particle Sizing, Multi Angle", "General DLS and SLS", "DLS, Non-Ergodic Samples", "Time Resolved DLS / SLS", "Temperature Dependent DLS / SLS", and "ALV-q[4] DLS/SLS".

The bottom status bar displays the following parameters: Sample: Nothing yet, Angle: 89.999°, Wave: 633.0 nm, Index: 1.3320, Visc.: 0.8900 cp, Temp.: 297.99 K, Diode: 3422. It also shows "Target Angle reached.", "Free Physical Memory is 71%", a "PRINT" button, "Mode: General SLS+DLS, Done!", and the time "12:55".

# Toluene index: 1.4954

ALY-5000/E/EPP & ALY-60X0 for WIN/NT/2000/XP V.3.0.3.8 05/2008

File Edit Window Sample QuickSet Run Setup Fit Display Script Help

Duration Run Counter CH0 : 0.00 Hz CH1 : 0.00 Hz MODE: SINGLE AUTO CH0 STATUS: STOPPED

Correlation Function Count Rate Trace

### Angular Dependent Dynamic and Static Light Scattering

**STEP 1 Measurement Control**

Min. Angle	Max. Angle	Angular Step
30.00	150.00	10.00

Runs: 3 Duration[s]: 10

Remeasure if dRate exceeds 5 %

	Lower	Upper	Step	Runs
Range 1				
Range 2				
Range 3				
Range 4				
Range 5				

**STEP 2 Static & Dynamic LS Options**

Measure and correct for detector dark counts

Use Toluene Rayleigh Ratios as standard

... presuming a Refractive Index of 1.4954

Compute Rayleigh Ratio for VV-Scattering

Instead use this RR : 1.0e-5 [1/cm]

Correct for index matching fluids refractive index

Refractive Index = 1.4954

Compute and store Cumulants Analysis

Data cutoff at: 10 % of maximum

Generate measurement protocol

**STEP 3 Measurement Type**

Standard  Solvent  Solution

Standard File : STANDARD.TOL

Solvent File : SOLVENT.TOL

Solution File :

Measure without solvent information/file

Append solution data to solution file

Create Angular Dependent Report

Sample Concentration : 1e-3 [g/ml]

Sample dn/dc : 0.1 [ml/g]

Sample : Nothing yet Angle : 89.999° Wave : 633.0 nm Index : 1.3320 Visc.: 0.8900 cp Temp.: 297.99 K Diode : 3411

Free Physical Memory is 71% PRINT Mode : General SLS+DLS 12:57

start Microsoft PowerPoint ... untitled - Paint ALY-5000/E Correlato... 12:57 PM

