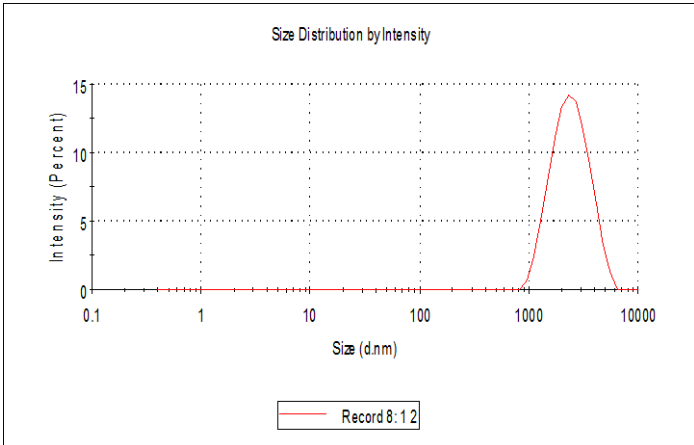
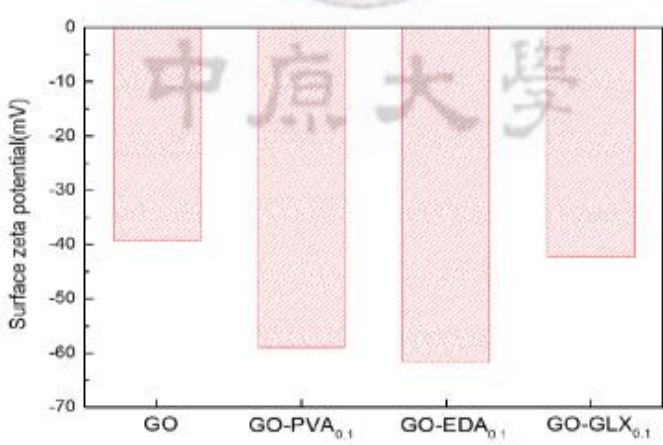
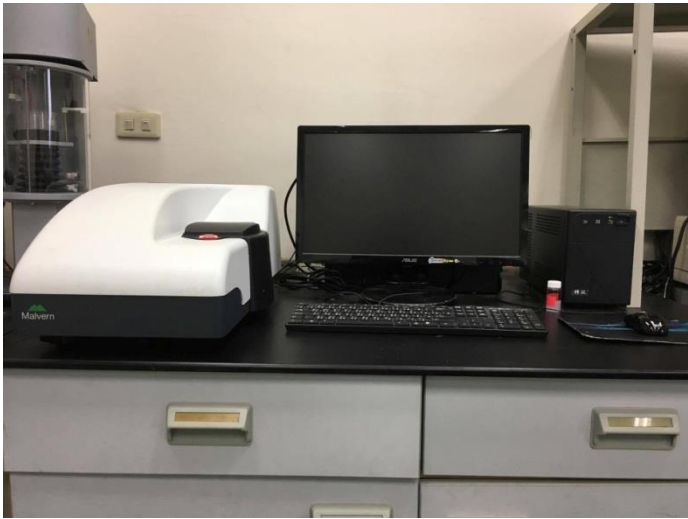
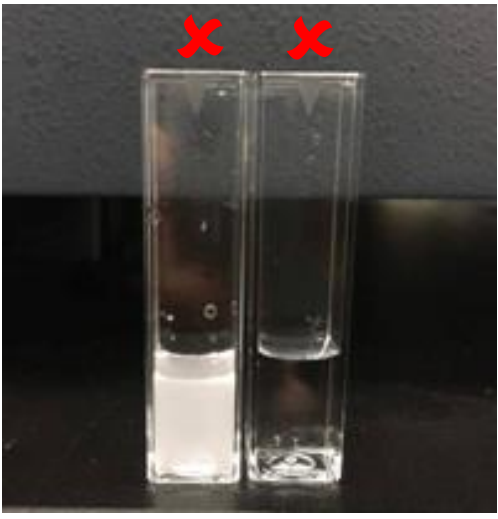


中原大學 薄膜中心 儀器簡介 - 19. 雷射奈米粒量徑儀

<p>儀器編號：19</p> <p>中英文名稱 APD 雷射奈米粒量徑儀 Malvern Zetasizer Nano Series, nano-zs90</p> <p>廠牌/型號 Malvern / NANO ZS90</p>	<p>功能</p> <ol style="list-style-type: none"> 1. 測定樣品粒徑大小(0.6nm-6000nm) 2. 粉體的 Zeat-Potential
<p>圖例-1</p> <p>測定樣品粒徑大小</p>  <p>The graph shows a single peak in the size distribution. The x-axis is Size (d.nm) on a logarithmic scale from 0.1 to 10000. The y-axis is Intensity (Percent) from 0 to 15. The peak is centered around 2000 nm with an intensity of approximately 14%. The legend indicates 'Record 8:12'.</p>	<p>圖例-2</p> <p>粉體的 Zeat-Potential</p>  <p>The bar chart shows the surface zeta potential (mV) for four samples. The y-axis ranges from 0 to -70 mV. The x-axis categories are GO, GO-PVA_{0.1}, GO-EDA_{0.1}, and GO-GLX_{0.1}. The zeta potentials are approximately -40 mV for GO, -60 mV for GO-PVA_{0.1}, -65 mV for GO-EDA_{0.1}, and -45 mV for GO-GLX_{0.1}.</p>
<p>儀器外觀</p>  <p>The photograph shows the Malvern Zetasizer Nano Series instrument, a white and black device, placed on a desk next to a computer monitor and keyboard. The instrument is used for measuring particle size and zeta potential.</p>	<p>拒絕樣品：顆粒太小以及不透光樣品</p>  <p>The photograph shows two test tubes. The left tube contains a white precipitate at the bottom, and the right tube contains a clear liquid. Red 'X' marks are placed above each tube, indicating that these samples are not suitable for measurement due to being too small or not transparent.</p>

Zetasizer Nano 檢測原理

1. 粒徑檢測: 動態光散射原理檢測(粒徑範圍 0.6~6000 nm)，懸浮粒子進行布朗運動時所產生散射條紋對時間的變化，檢測器將散射光信號轉化為電流再通過數字相關器運算得到顆粒在溶液中擴散係數。通過 Stockes-Einstein 方程可得到粒徑大小。
2. 界面電位: 在毛細管兩側加一電場，帶電顆粒會往相反電極移動測量粒子移動速度，藉由 Henry Equation 計算界面電位。當粒子平衡後分散液與分散粒子間電位差，其電位差差越大越容易維持穩定懸浮狀態，電位差絕對值『>30 mV 穩定分散；<30mV 系統不穩定，容易聚集；=0 等電位點(IEP)』。

資料來源: http://www.che.ntu.edu.tw/ntuche/p equip_booking/files/Nano-ZS.pdf