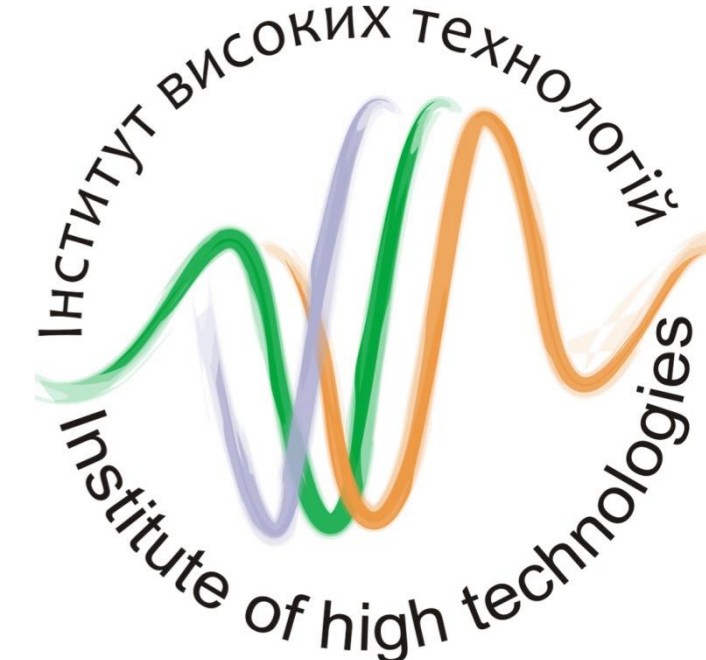


# Nanocomposites and nanomaterials Web application for analysis of nanoparticles properties



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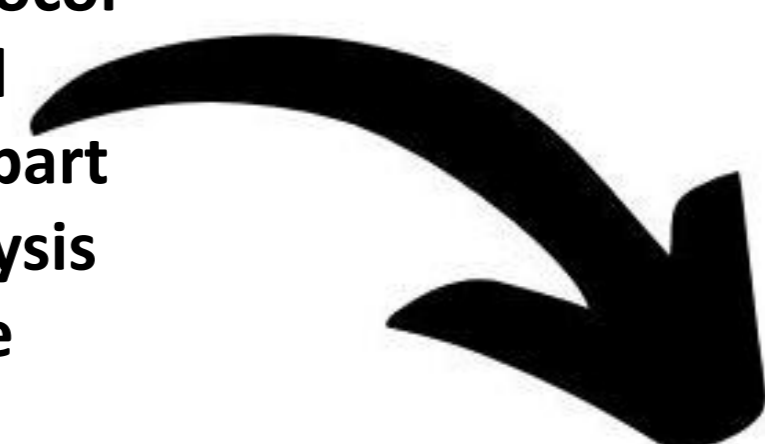
## Introduction

Nanocolloids are widely used in electronics including sensors and solar cells, in medicine for targeted drug delivery and disinfection, etc. Hence, nanoparticle properties and nanocolloids behaviour are of high importance in modern research.

This poster illustrates the basic Zeta potential

measurement by Zetasizer Nano. Zeta potential is calculated using Henry equation (would be nice to have the formula here). Where electrophoretic mobility and particle velocity were determined from the electrophoresis and LDV measurements of the samples, respectively.

**Extensive research is required to develop a synthesis protocol and analysis of material properties is a paramount part of this research. Data analysis is often incredibly time consuming.**



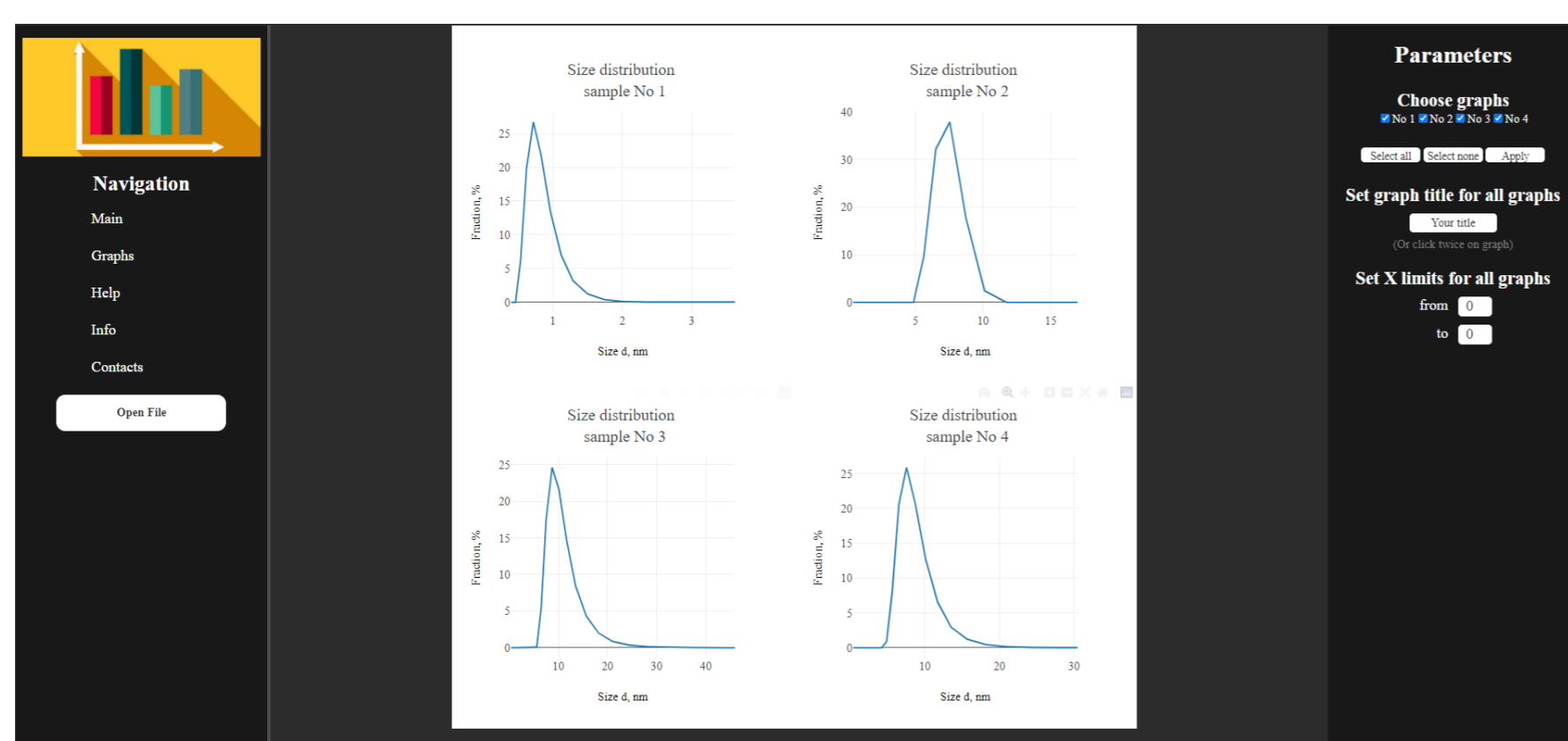
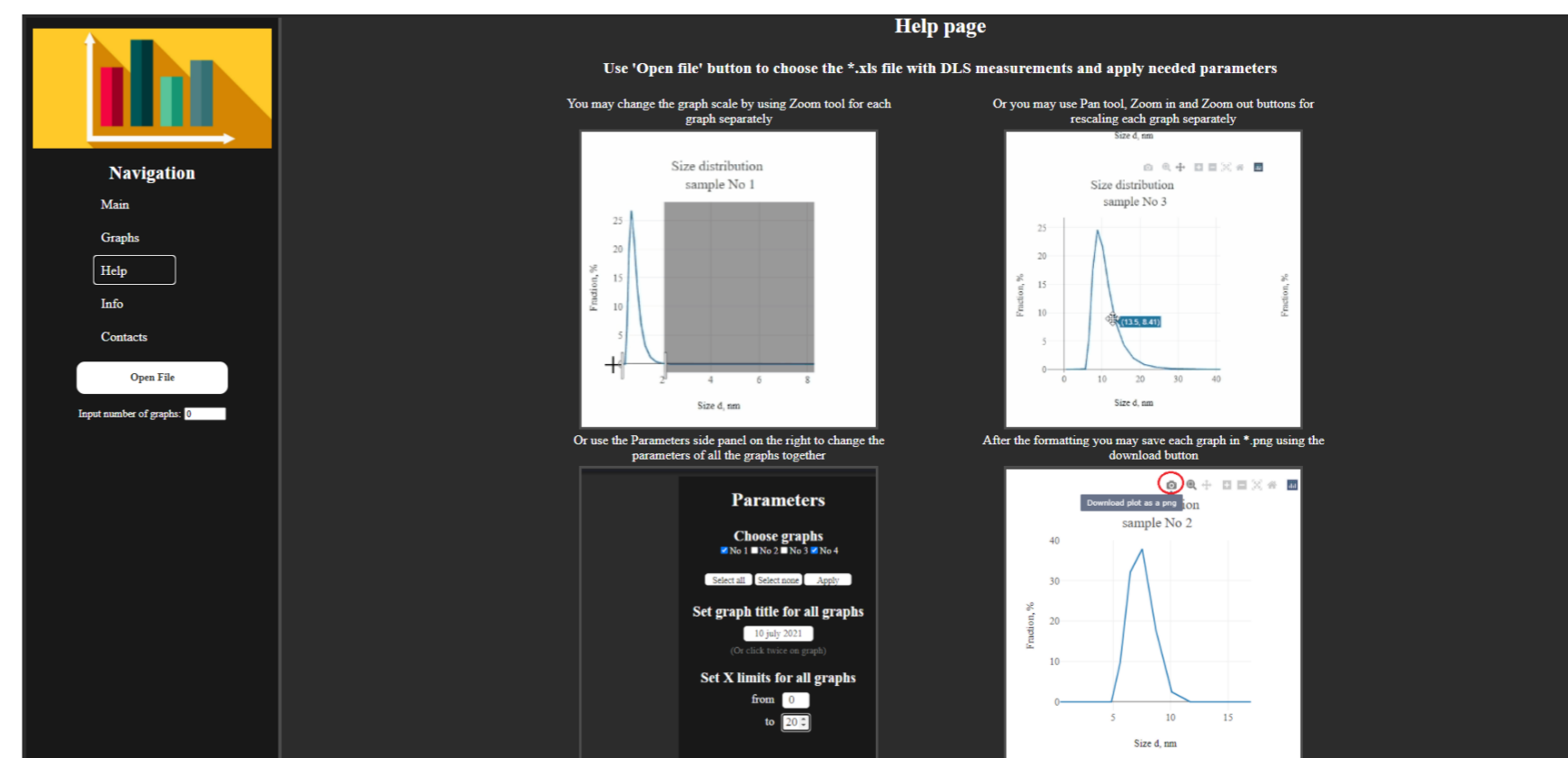
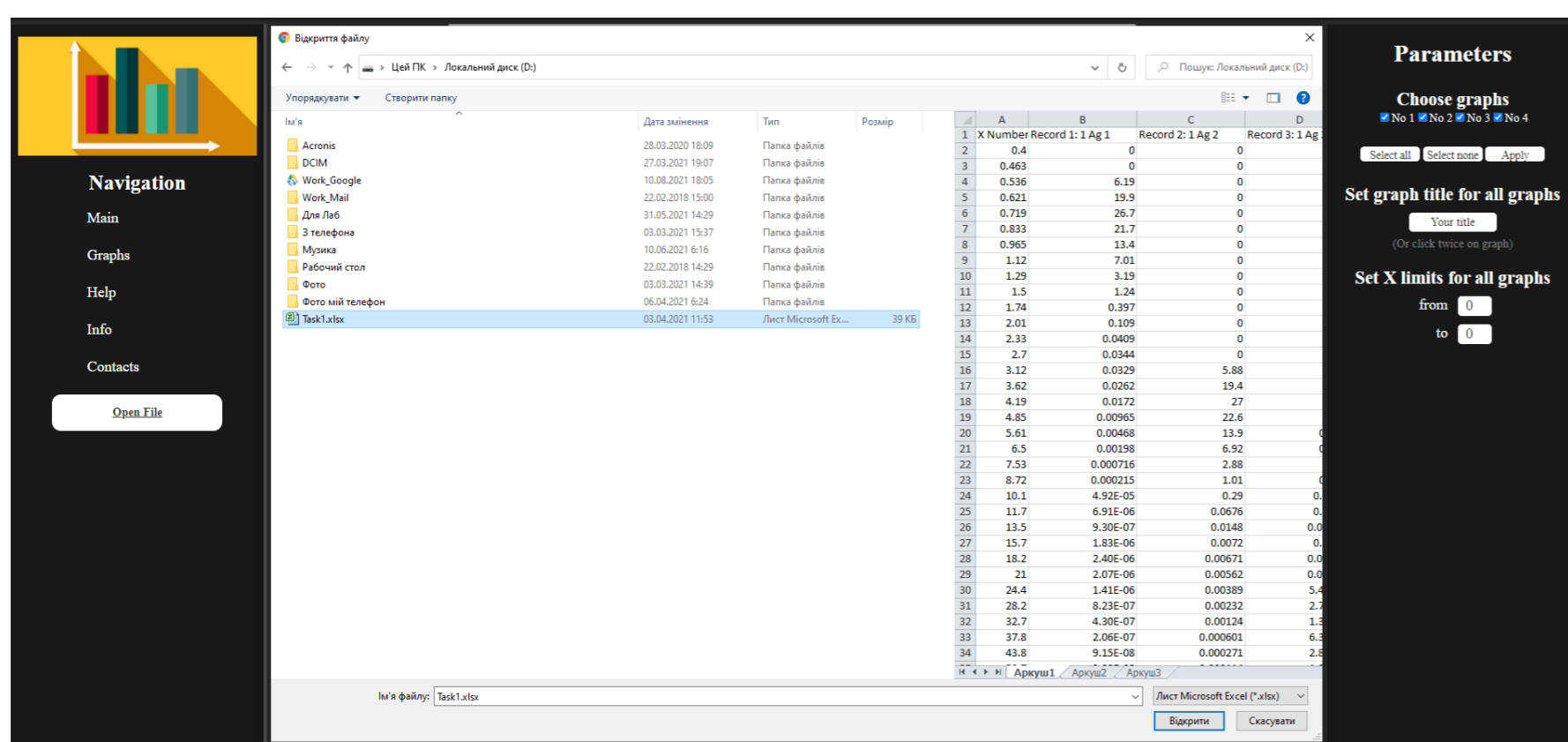
**Automation is required when the same analysis algorithm is applied to a large number of samples.**

## Methods

There are several experimental techniques for nanoparticle characteriation. For example, dynamic light scattering, transmission electron microscopy, zeta-potential measurements, optical spectroscopy, surface

plasmon resonance spectroscopy. In this work we present a processing of the dynamic light scattering data in nanocolloids and developed web application to automate this processing.

**Our goal: to develop and implement a web application that will perform such analysis and save the valuable research time.**



## Results

The application performs analysis of the uploaded experimental data and outputs the results in a visual format of a graph and in a .txt file where the key sample properties are recorded.

The screenshots illustrate the current progress and app's functionality. You may find more information by following the link below or just simply scanning the QR-code.

## Gratitude

We are grateful to Iu. Mukha and N. Vityuk from O.O.Chuiko Institute of Surface Chemistry of NAS of Ukraine for fruitful discussions and useful comments.

## Outlooks

The next stage of this work is expanding functionality of the app to include volume and intensity fraction analysis and comparison mode for a chosen sample.

## Collaboration

We also plan to analyze other types of measurements. We are open for collaboration and welcome any comments or feedback. Do not hesitate to contact us.



<http://surl.li/acbck>