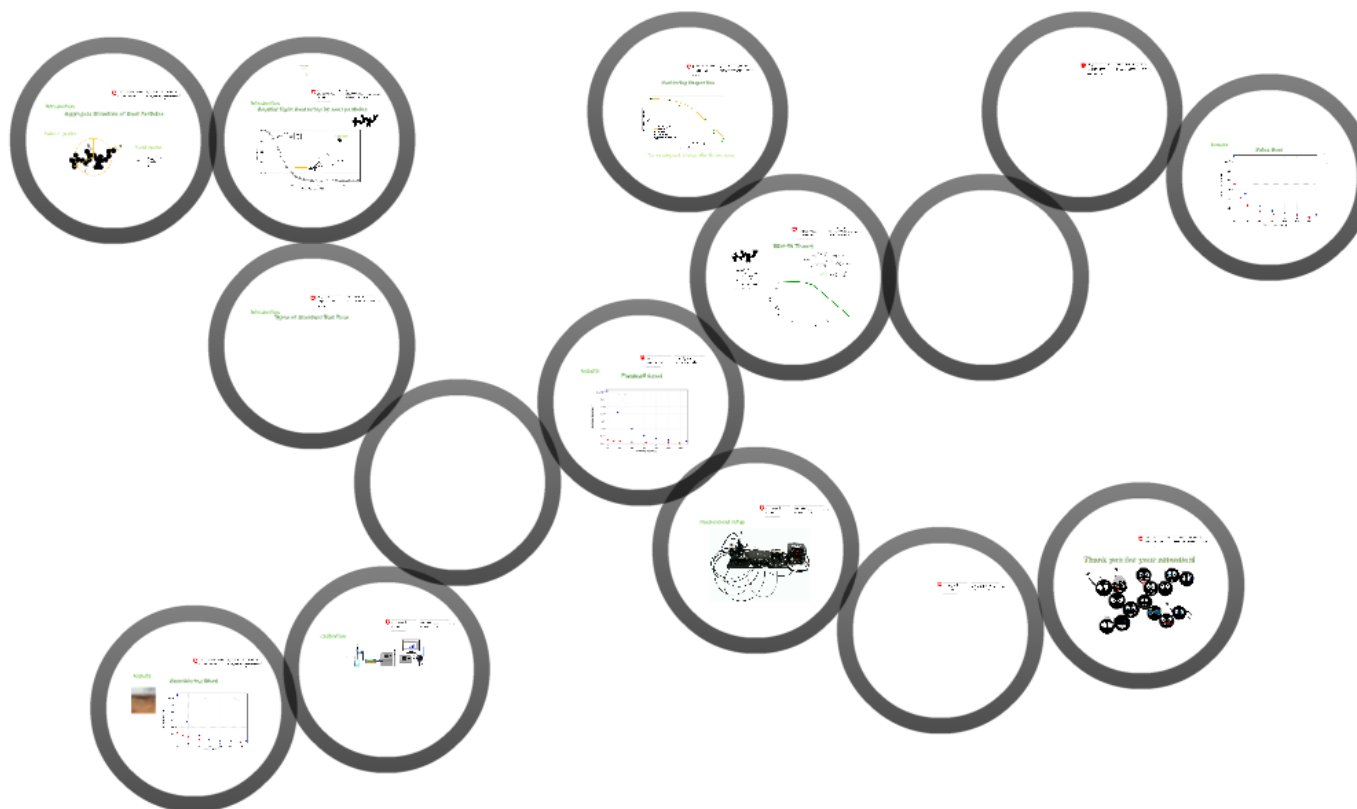


# Determination of the shape of combustion aerosol particles based on their angular light scattering

University of Applied Sciences Northwestern Switzerland:

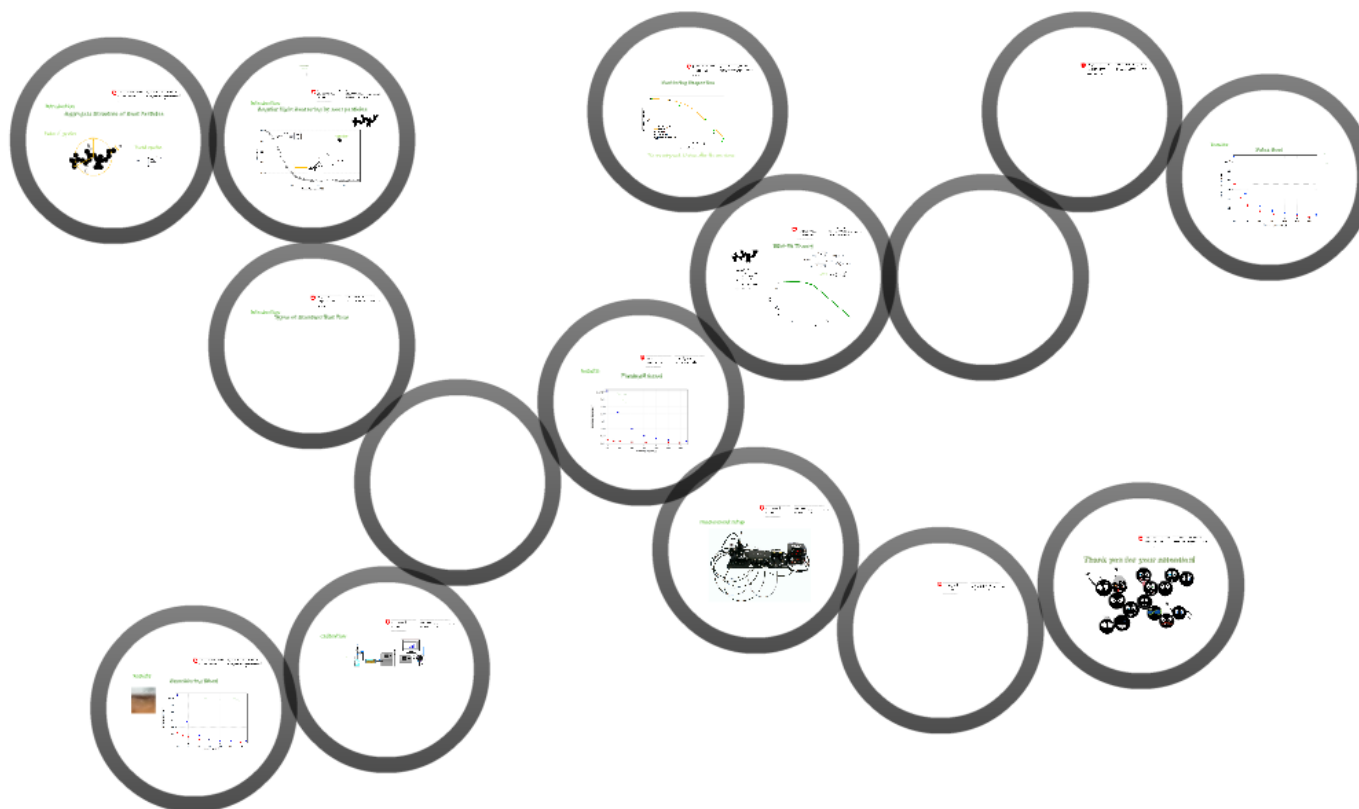
Zsófia Jurányi, Markus Loepfe, Maxim Nenkov, Heinz Burtcher



# Determination of the shape of combustion aerosol particles based on their angular light scattering

University of Applied Sciences Northwestern Switzerland:

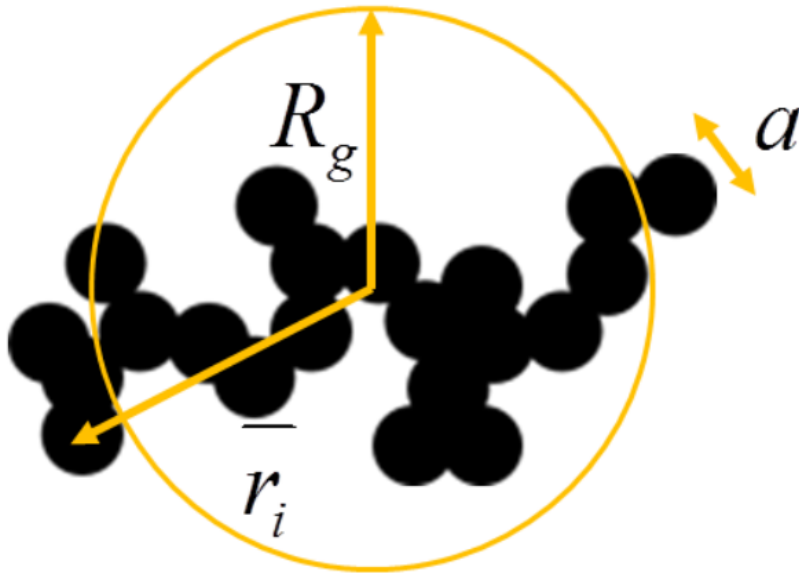
Zsófia Jurányi, Markus Loepfe, Maxim Nenkov, Heinz Burtcher



## Introduction:

# Aggregate Structure of Soot Particles

Radius of gyration:

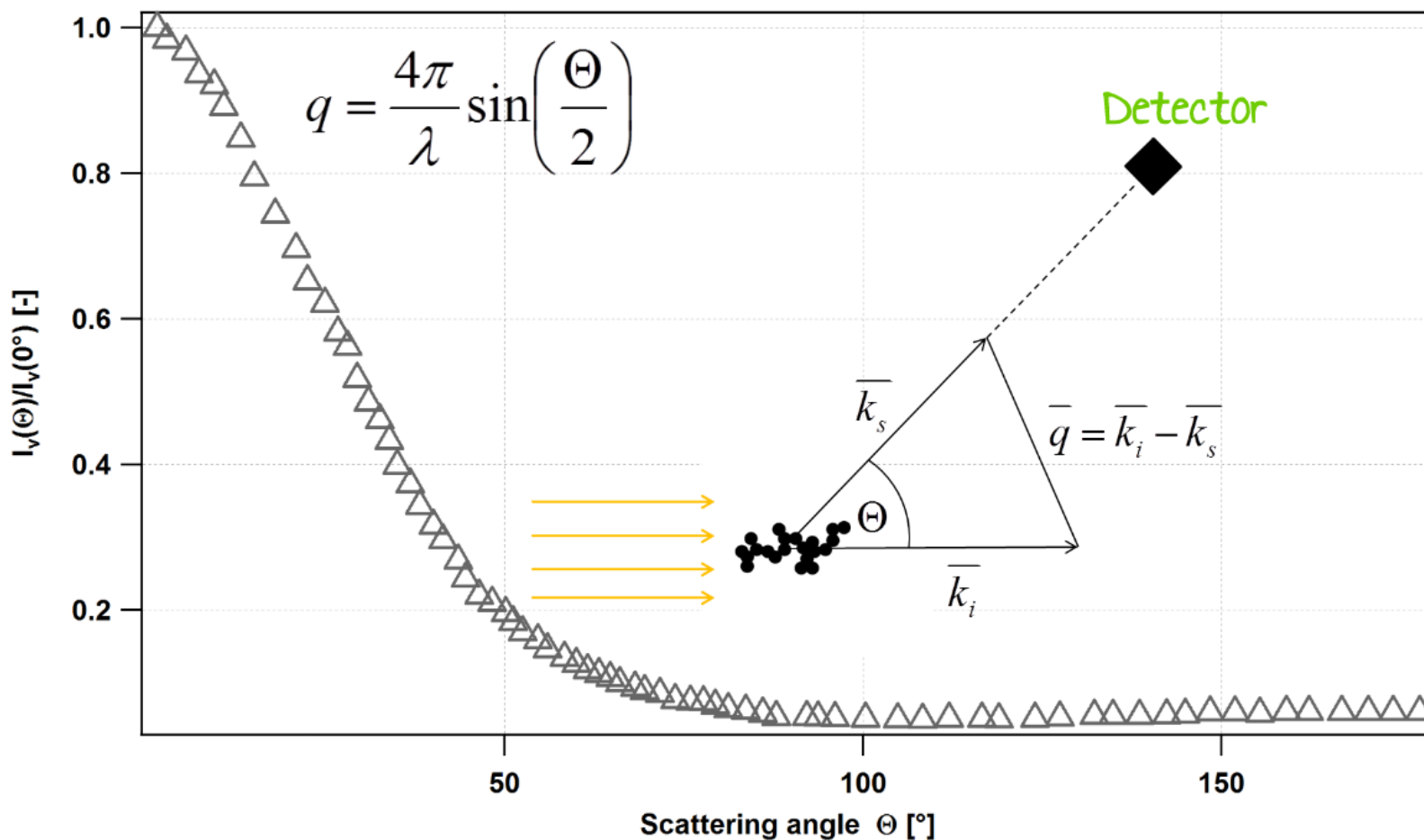
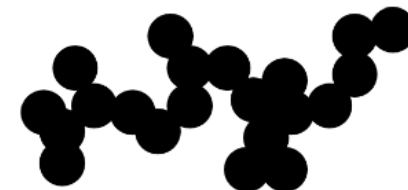


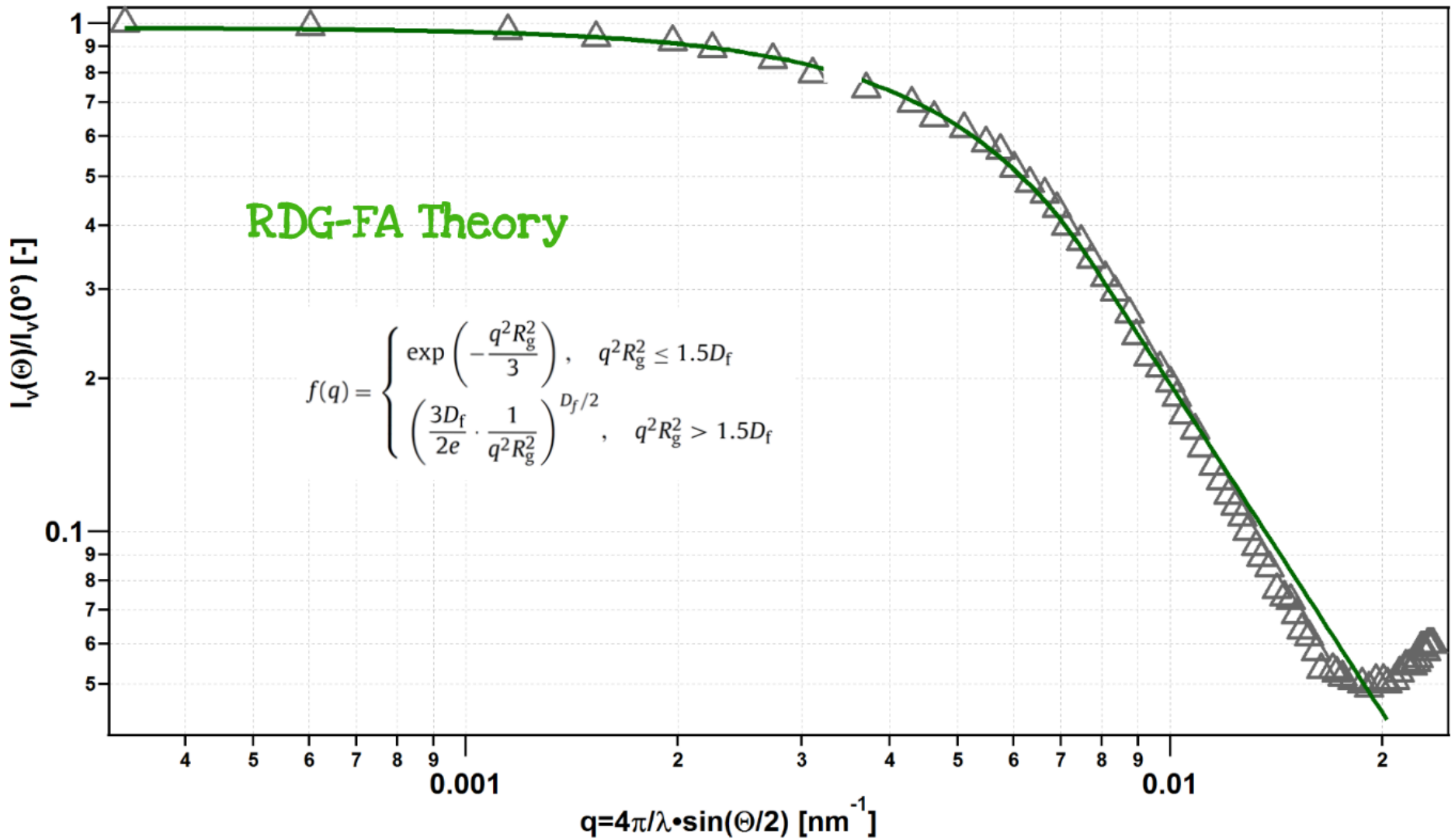
Fractal equation:

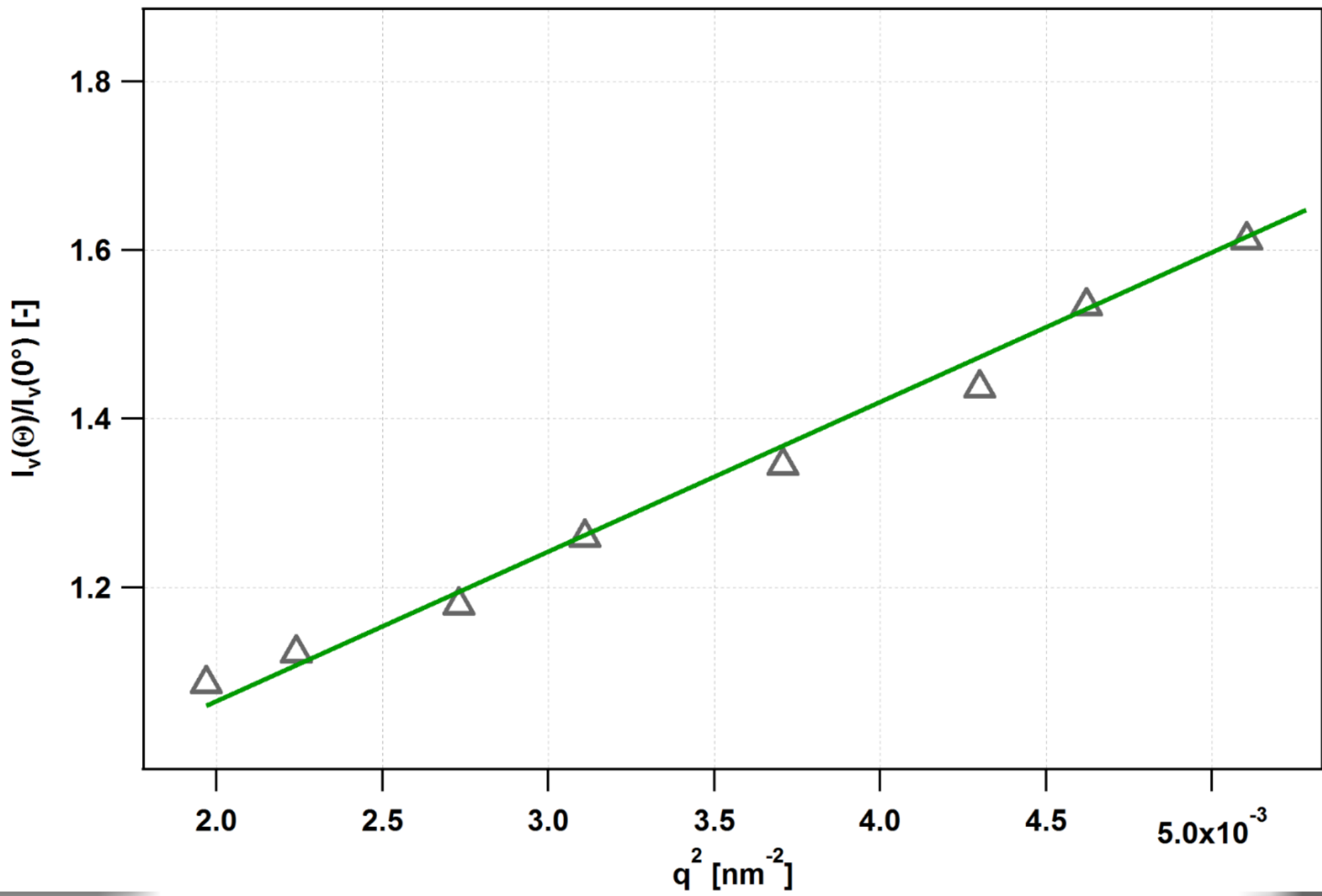
$$N = k_0 \left( \frac{R_g}{a} \right)^{D_f}$$

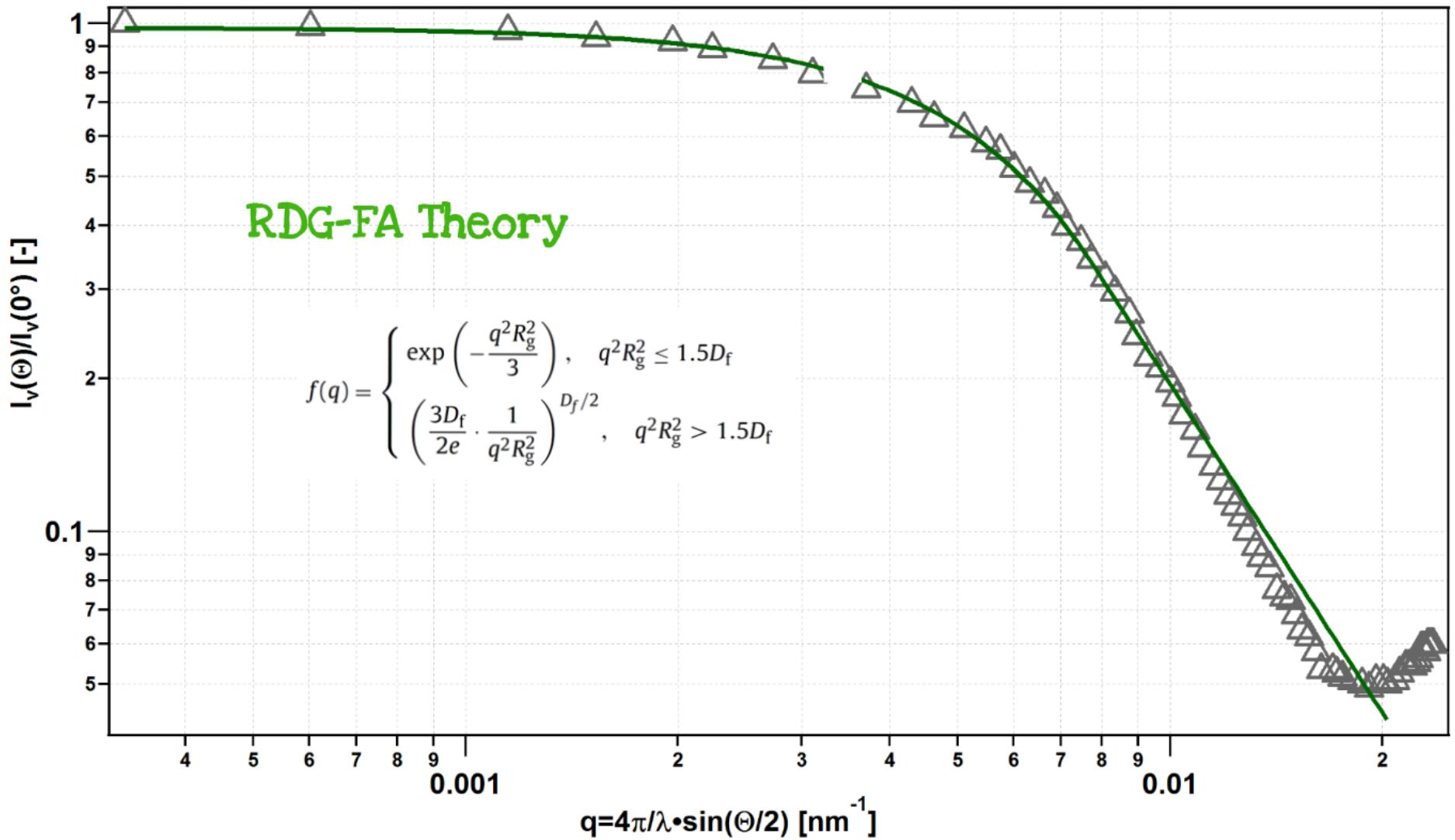
# Introduction:

## Angular Light Scattering by soot particles

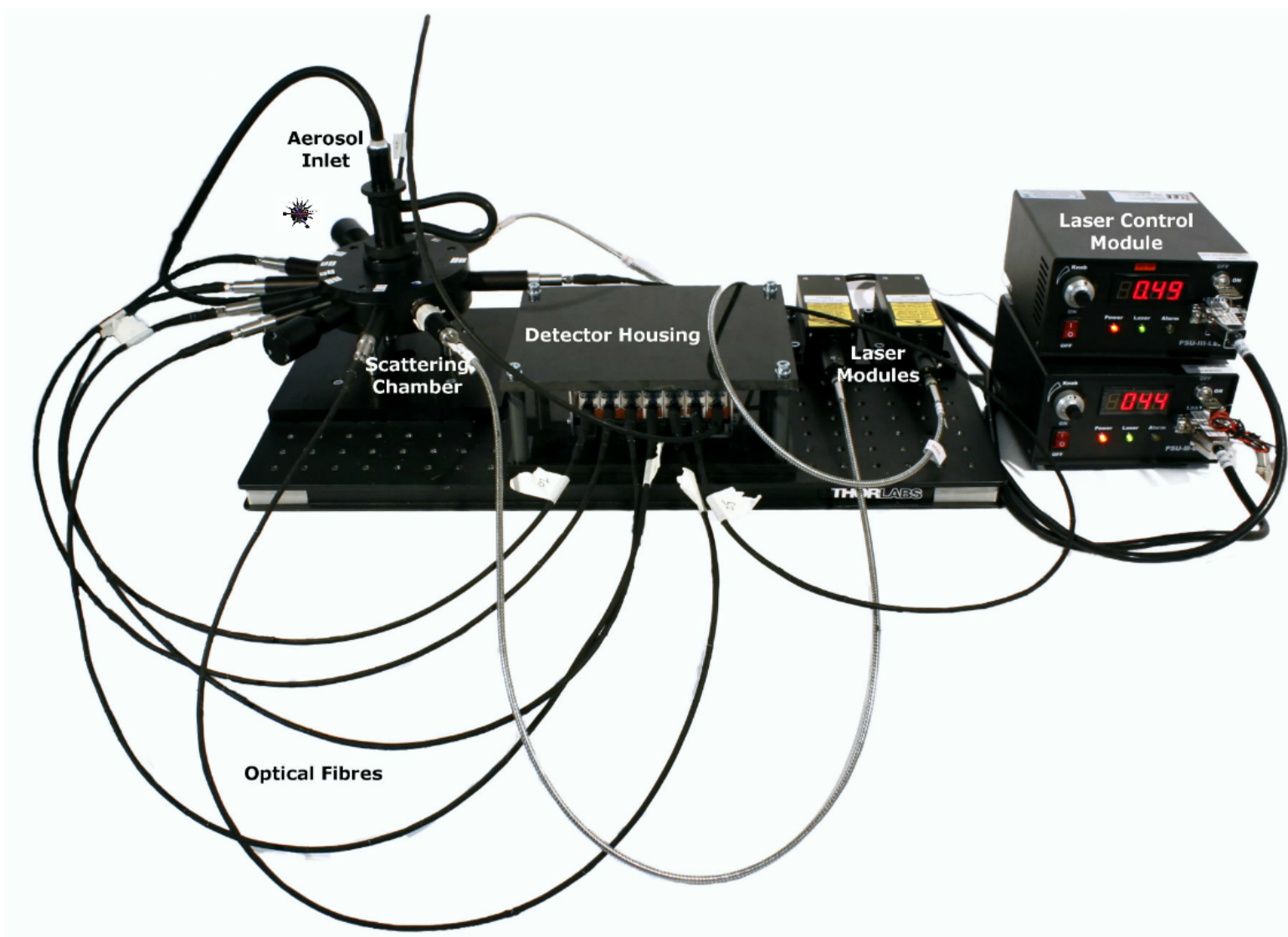




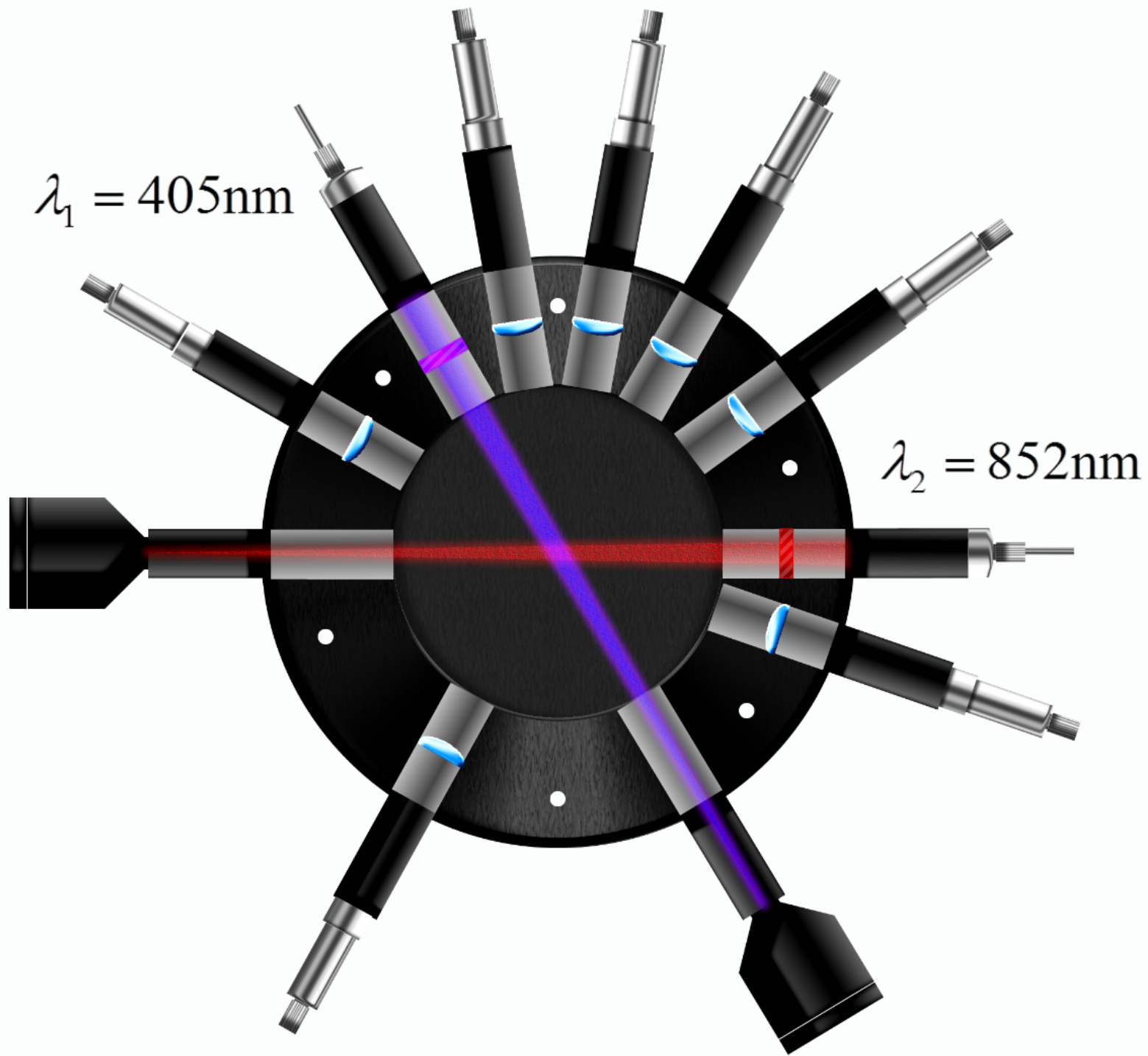




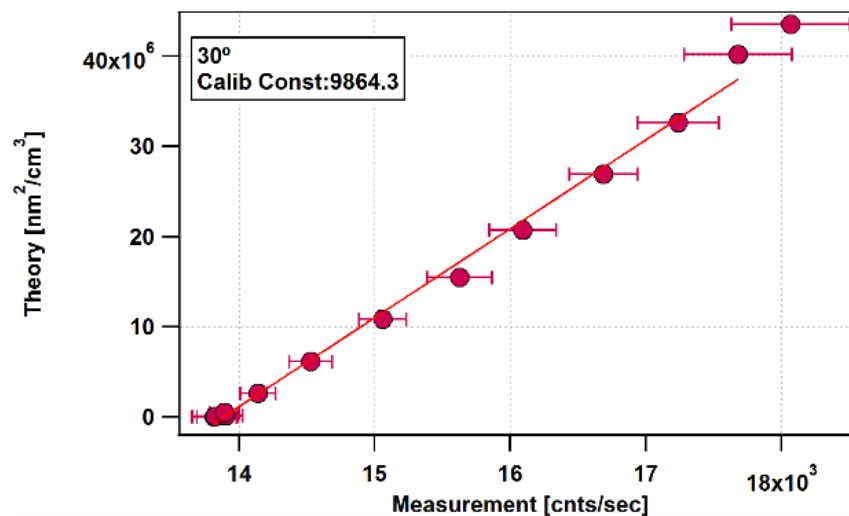
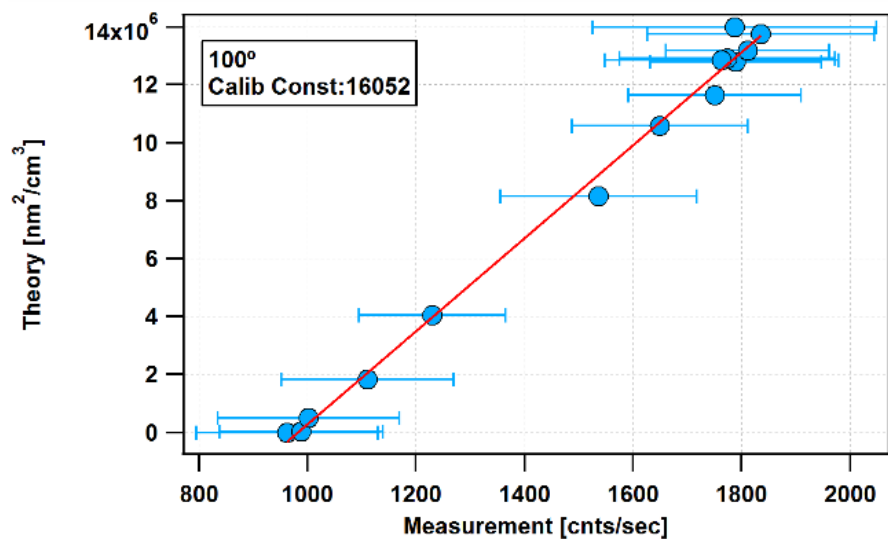
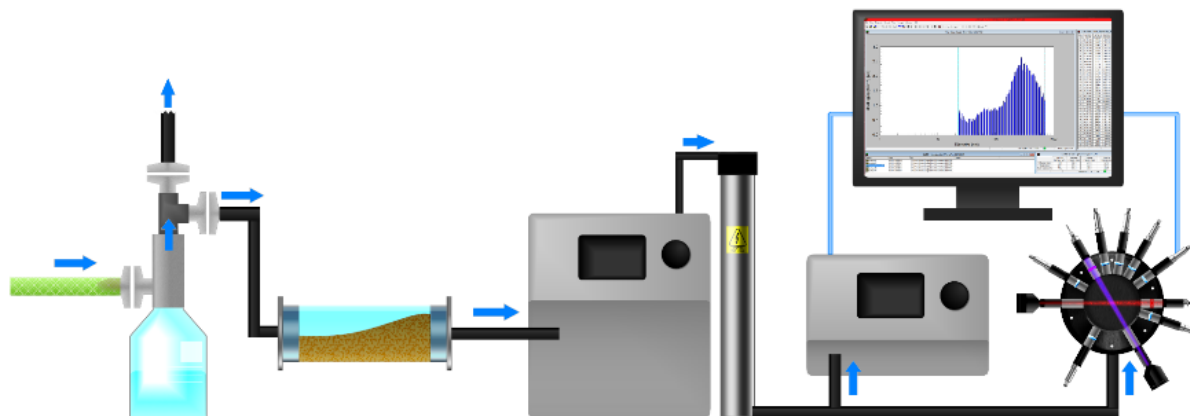
# MeaSurement Setup:





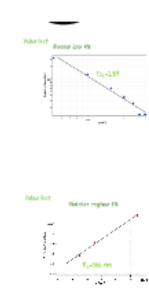
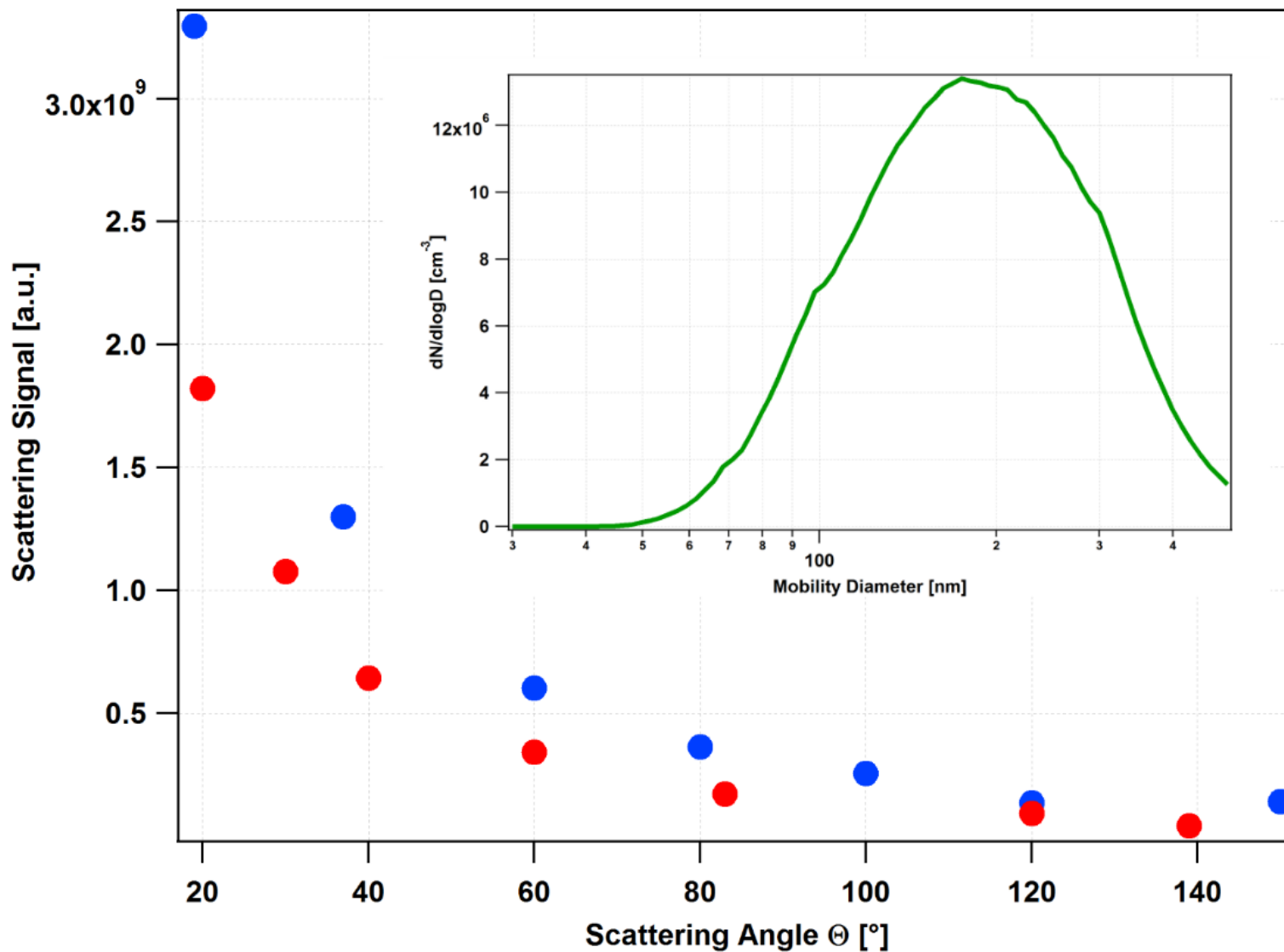


# Calibration:



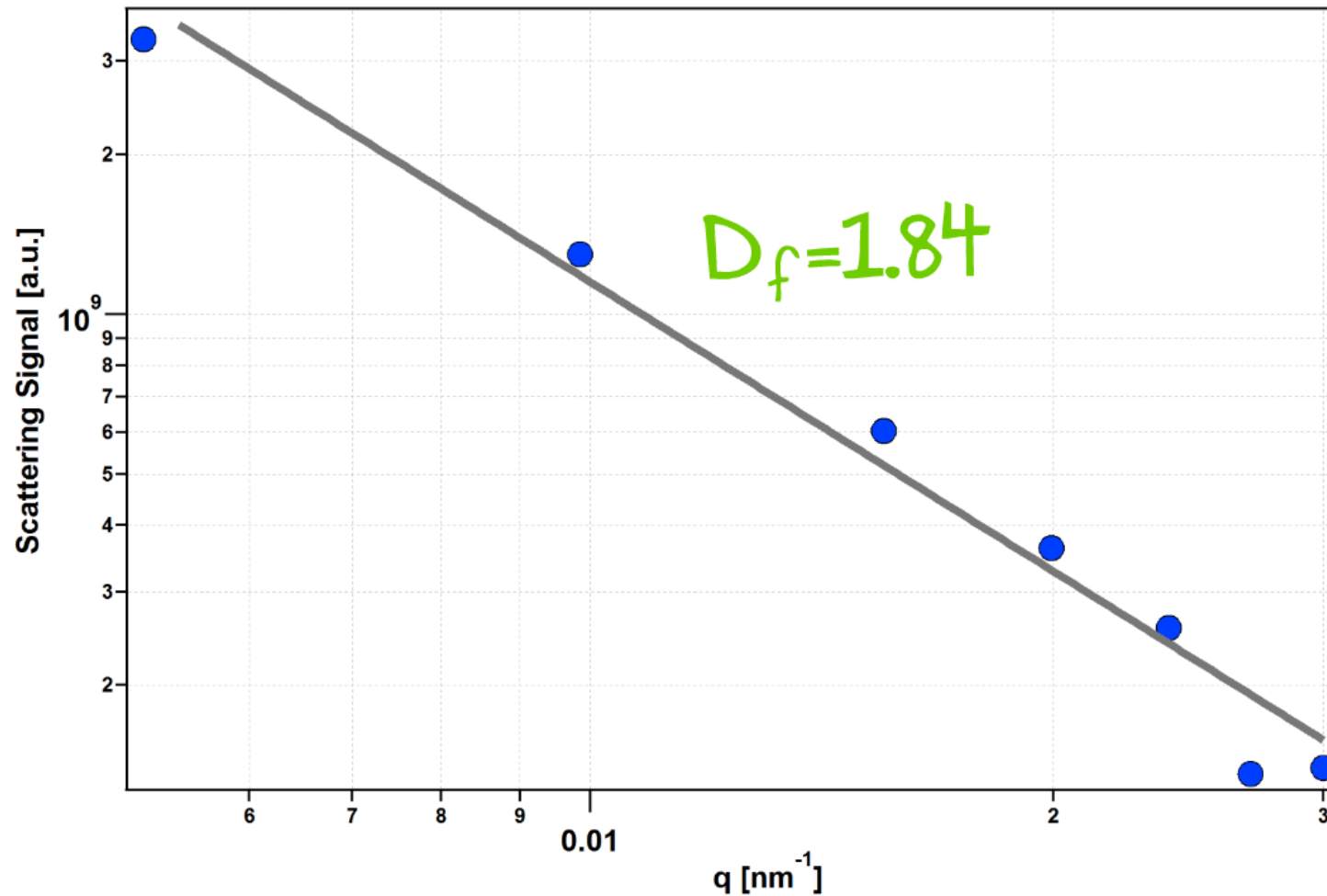
# Results:

## Palas Soot



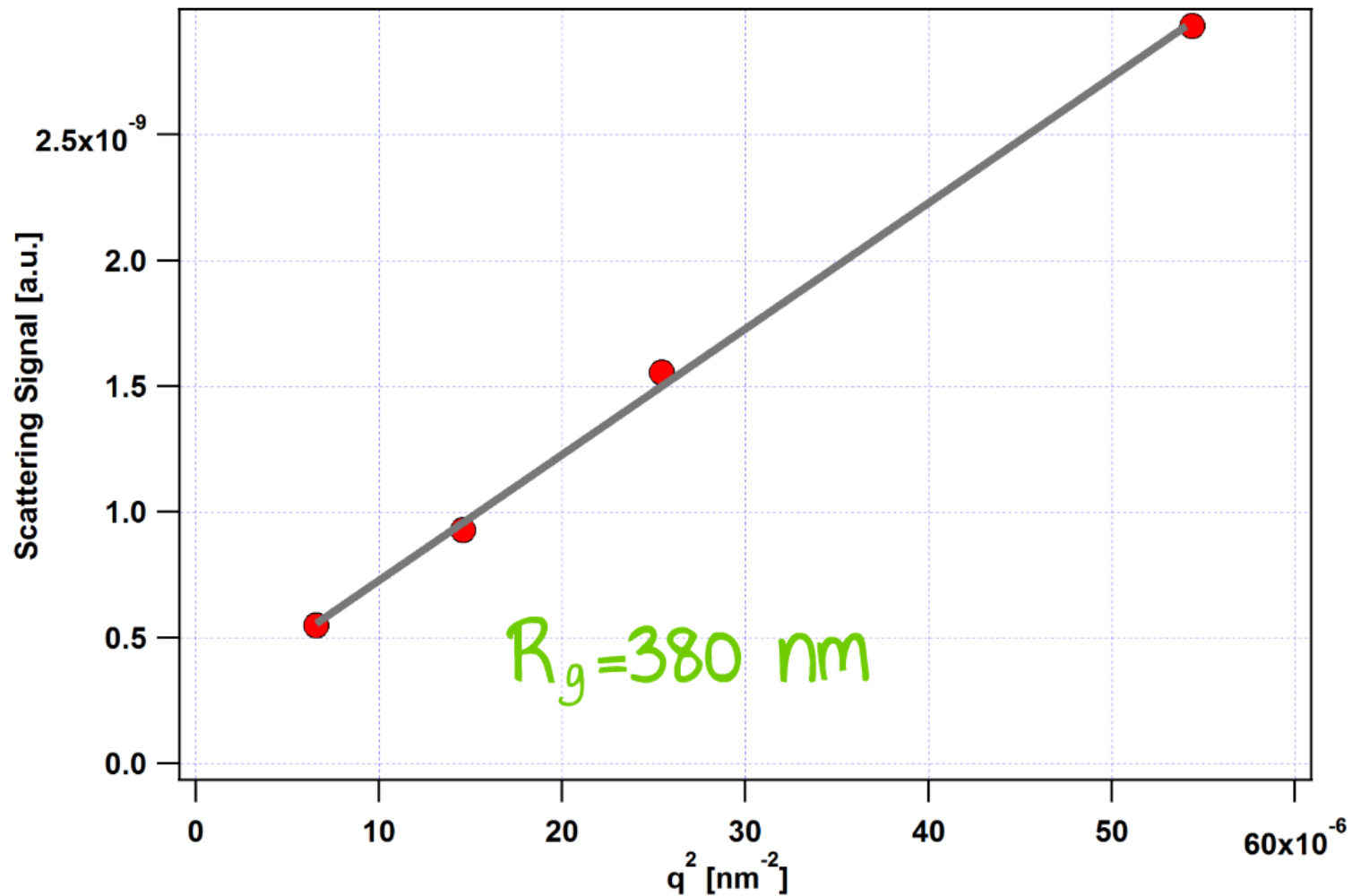
# Palas Soot:

## Power law fit



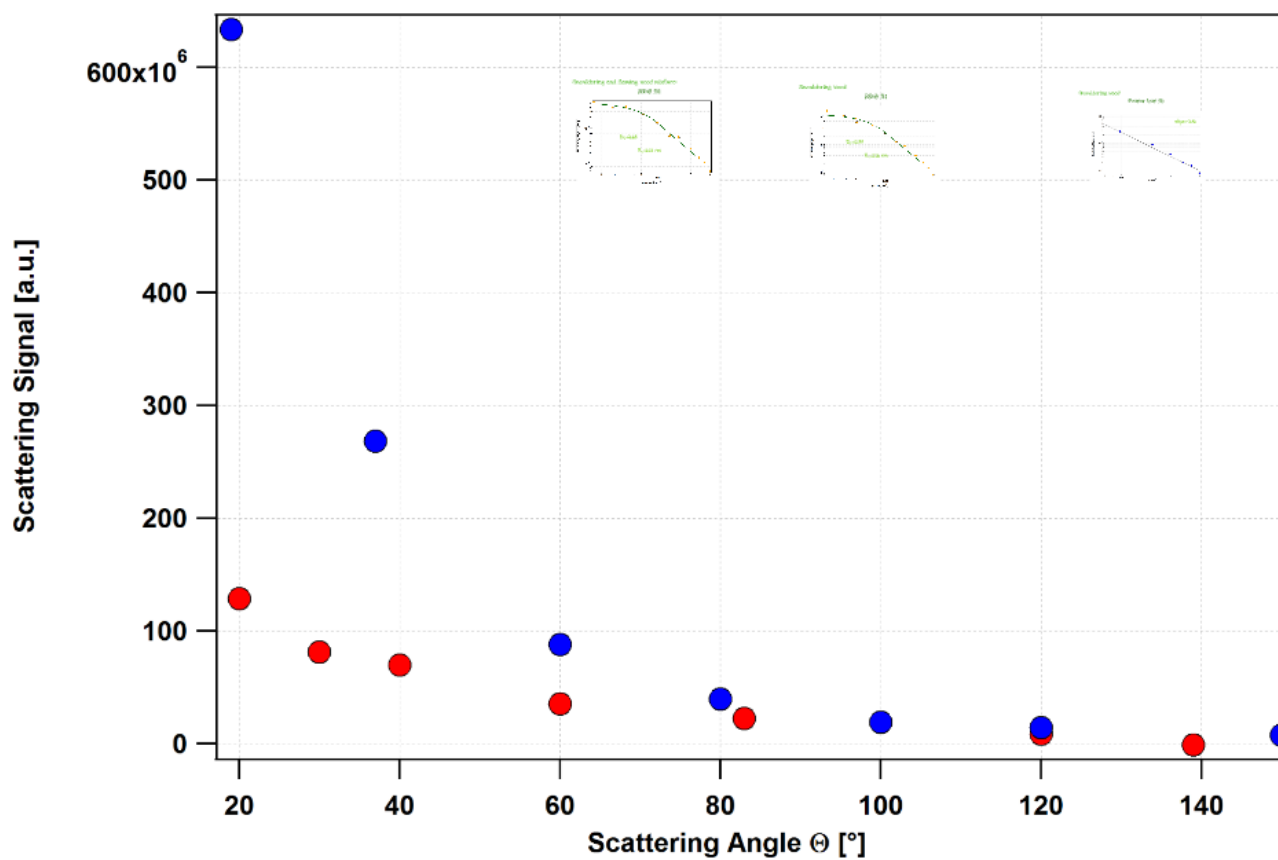
# Palas Soot:

## Guinier regime fit



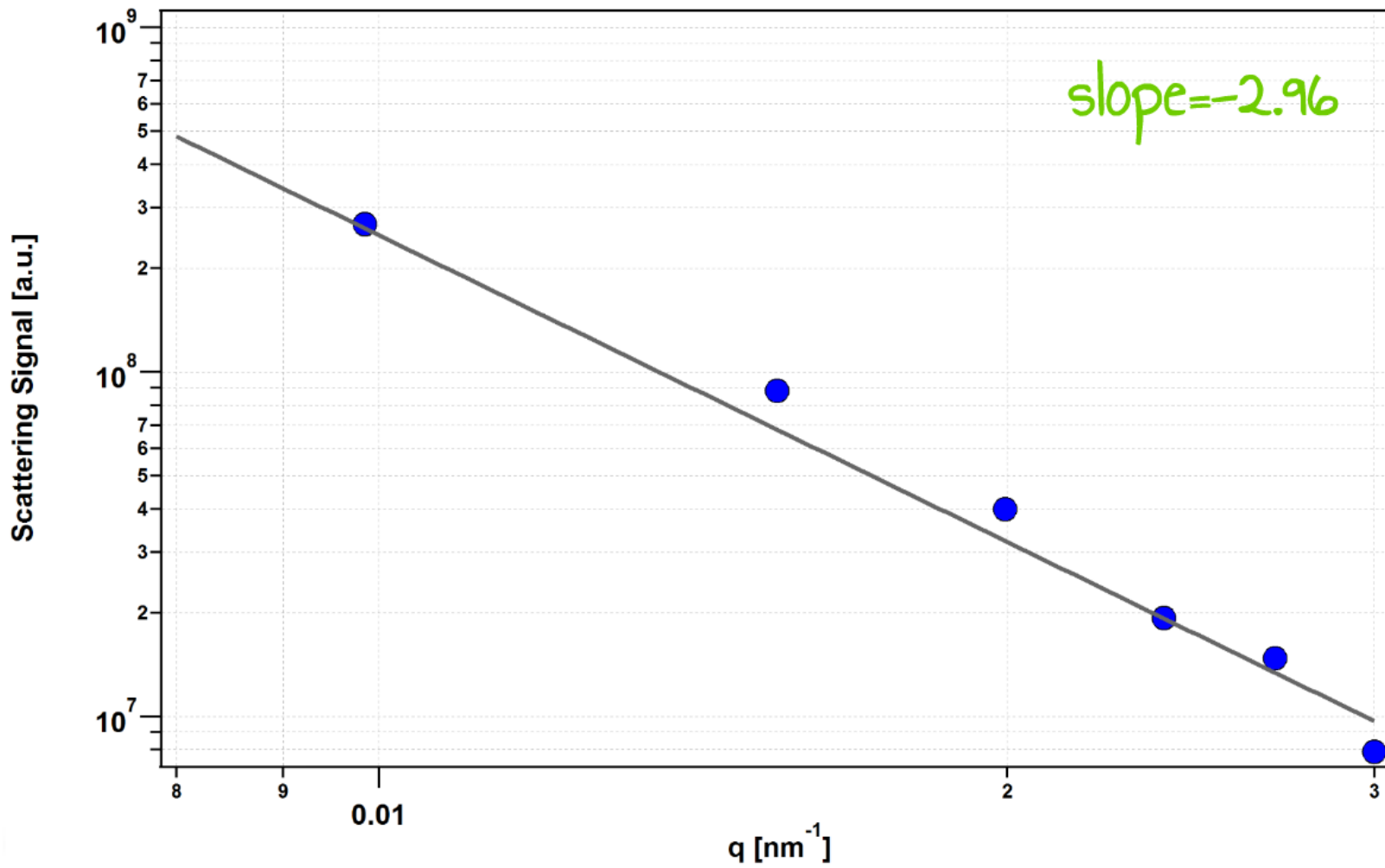
# Results:

# Smouldering Wood



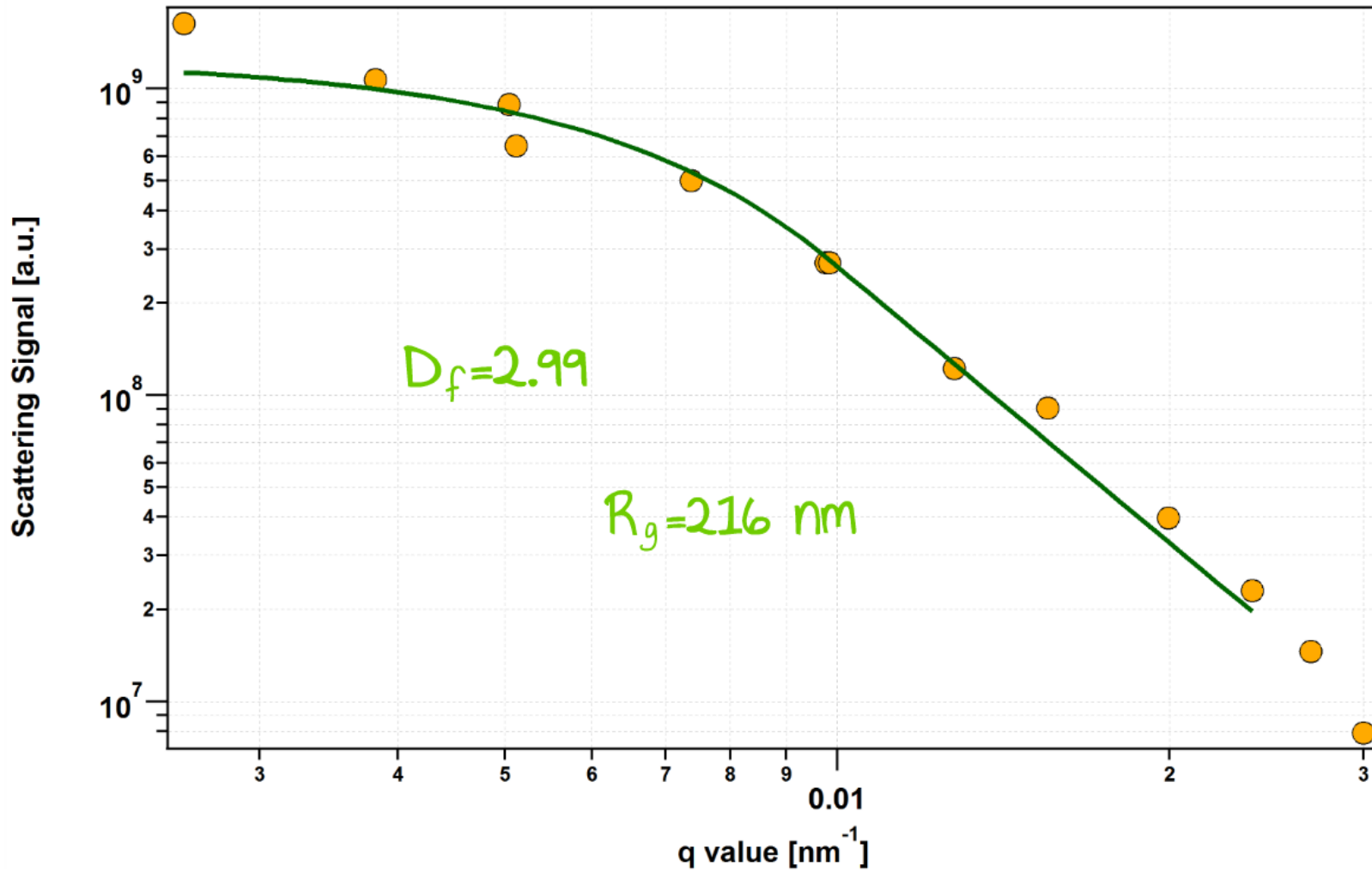
Smouldering wood:

Power law fit



Smouldering wood:

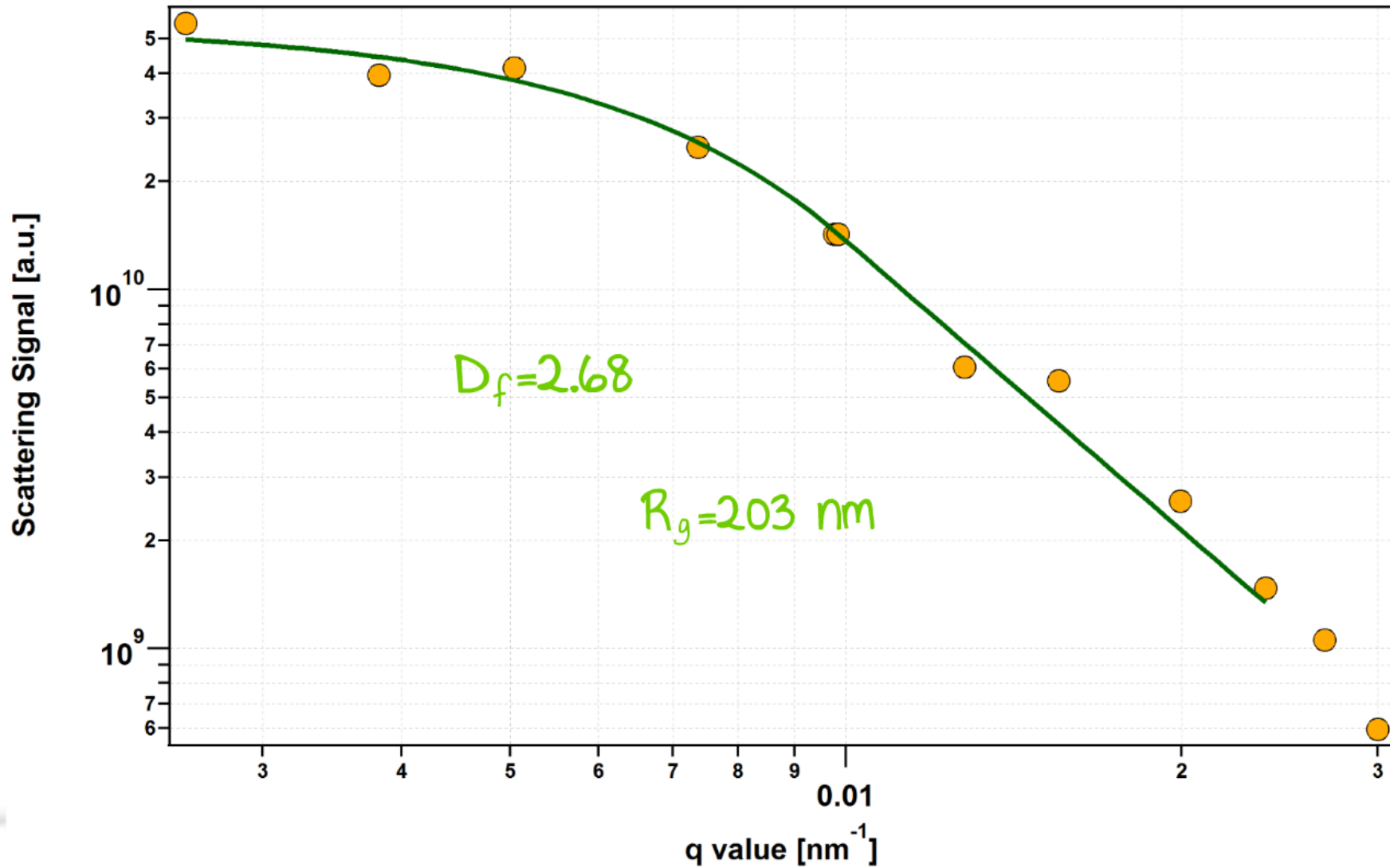
RDG fit





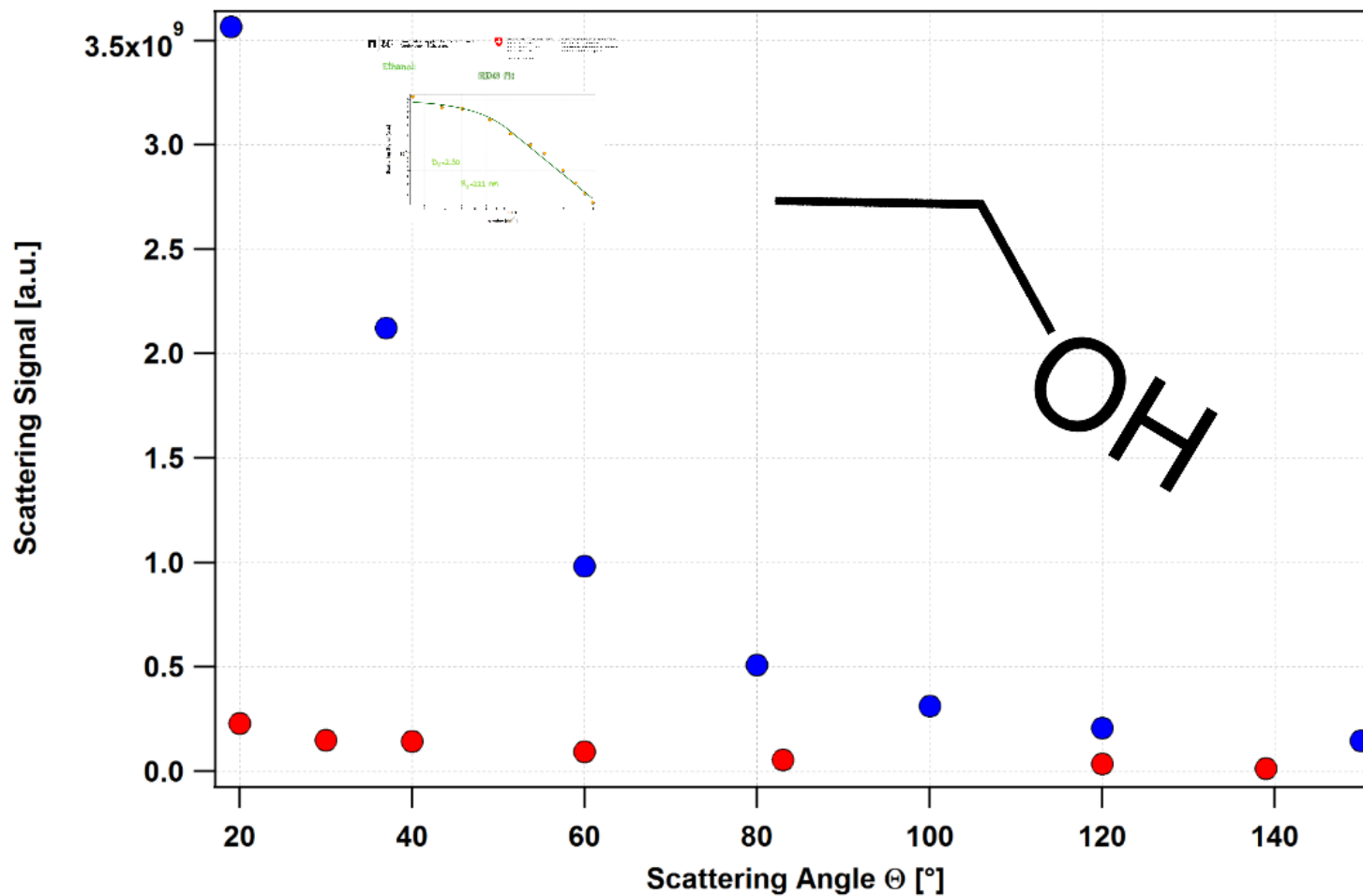
# Smouldering and flaming wood mixture:

## RDG fit



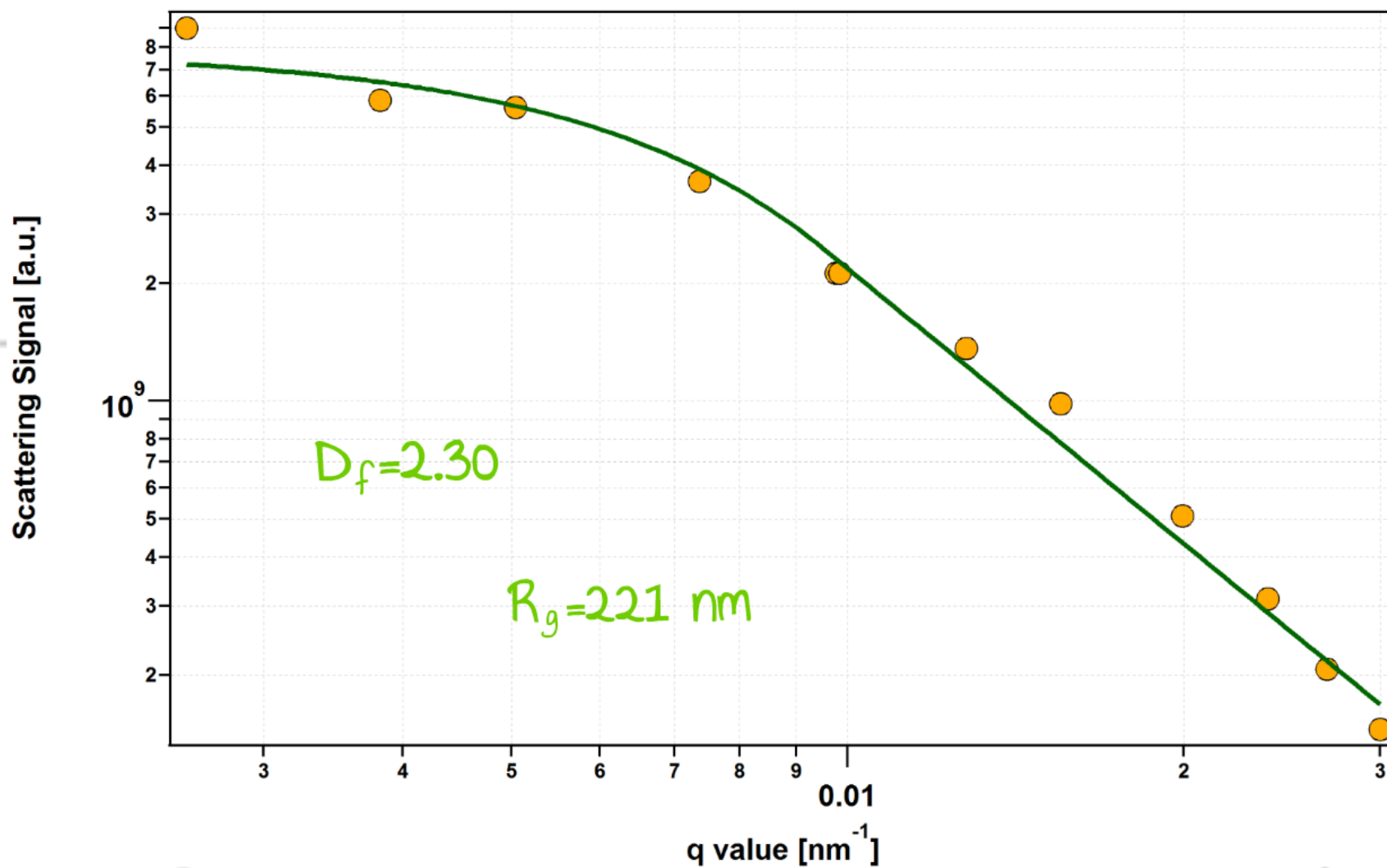
# Results:

## Flaming Ethanol



Ethanol:

RDG fit



# Thank you for your attention!

