

Optyczne systemy pomiarowe

Light scattering methods

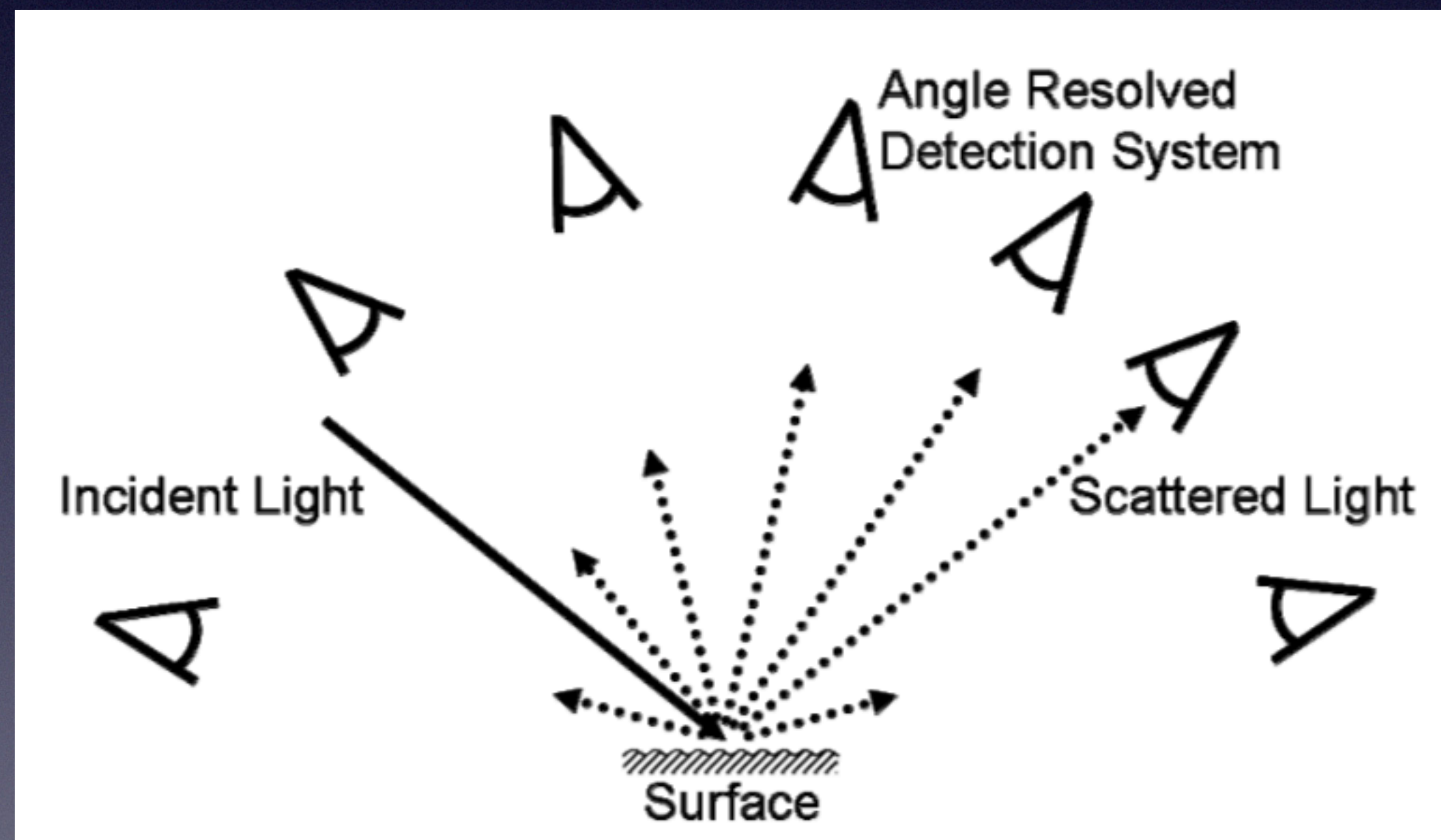
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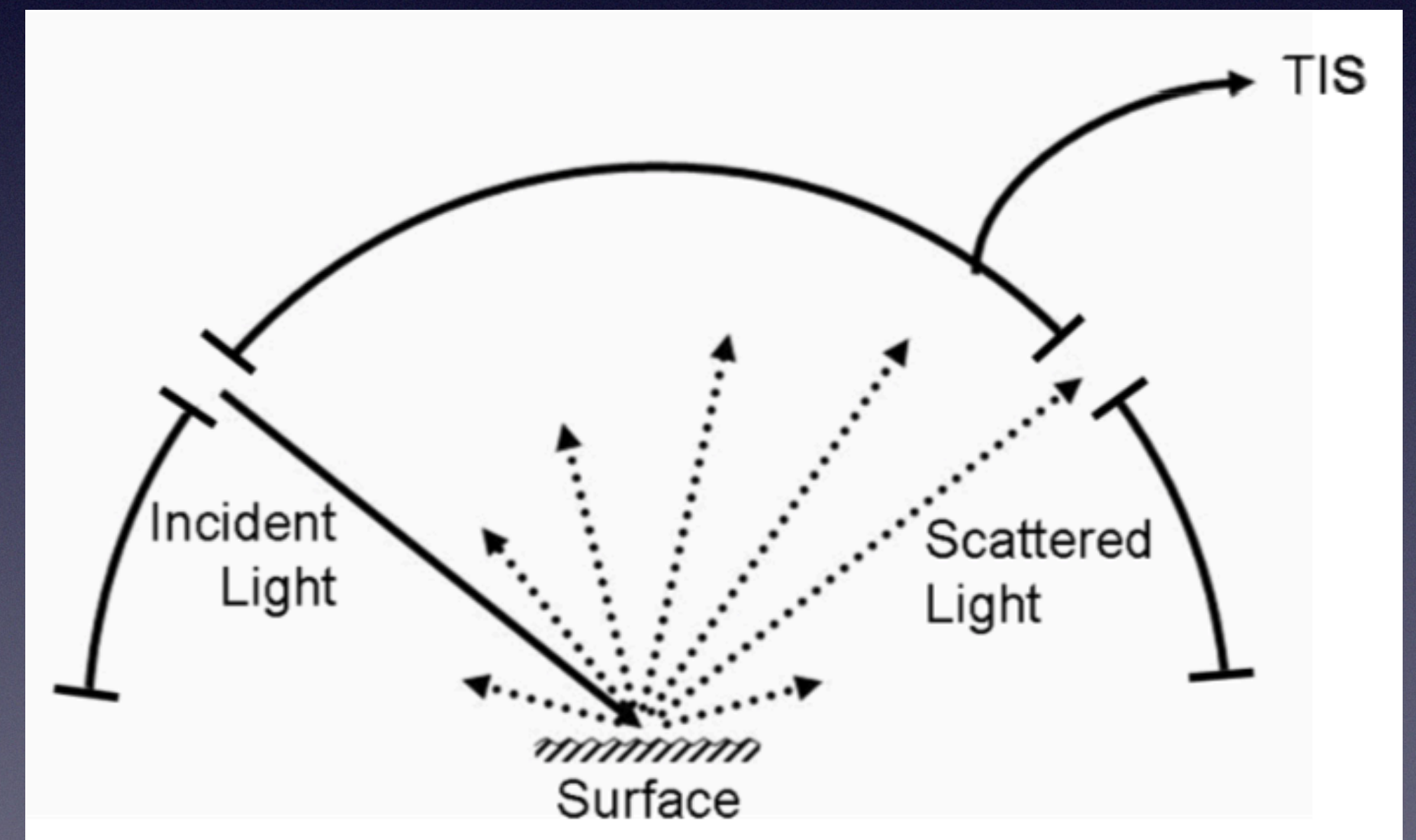
19.02.2019 13:03



Metody rozproszeniowe znane są jako metody „area-integrating” w pomiarach tekstury powierzchni. Główna wiązka światła odbitego, kątowno rozproszona oraz wiązki zsumowane są przykładami mezurand w metodach światła rozproszonego.

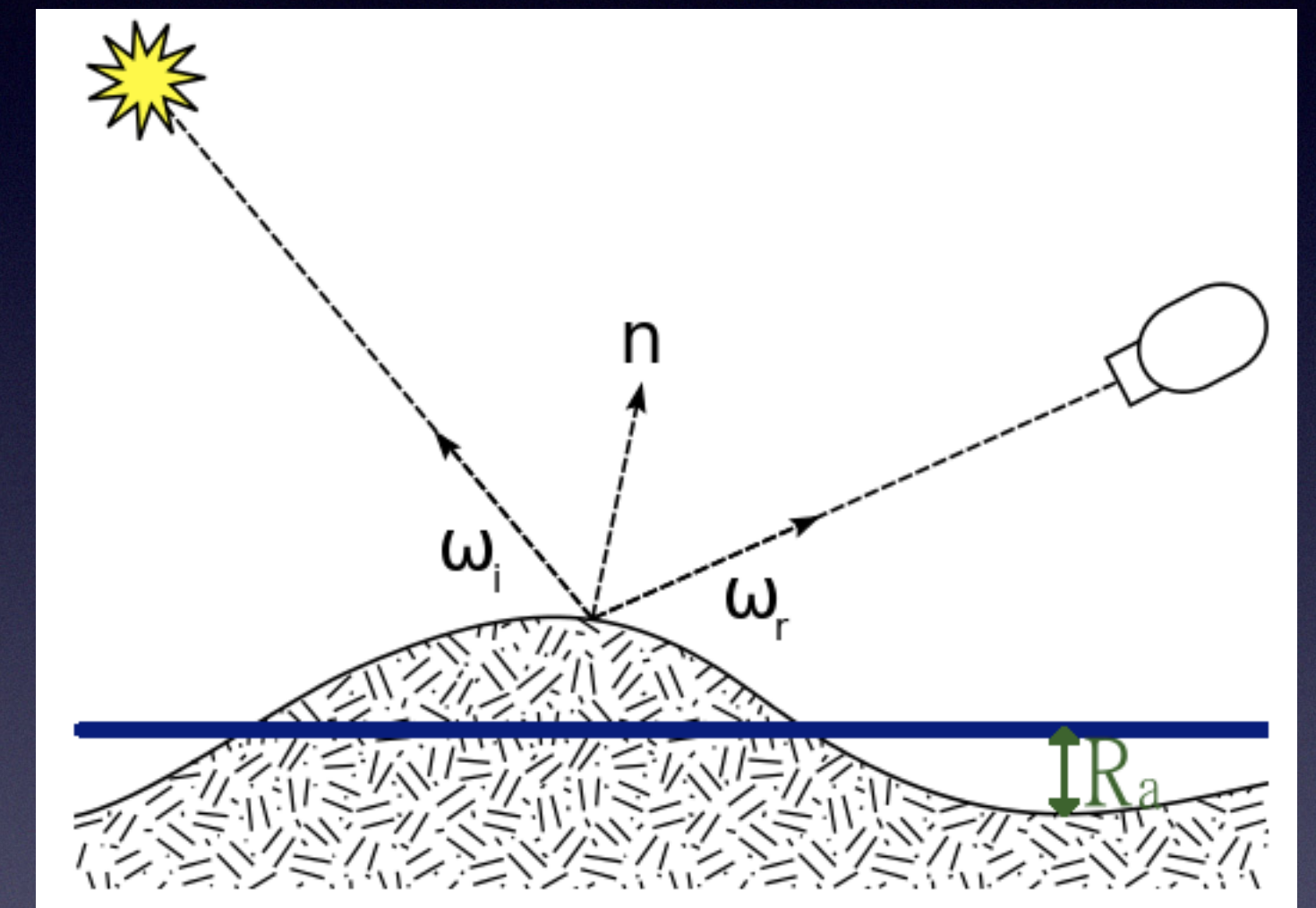
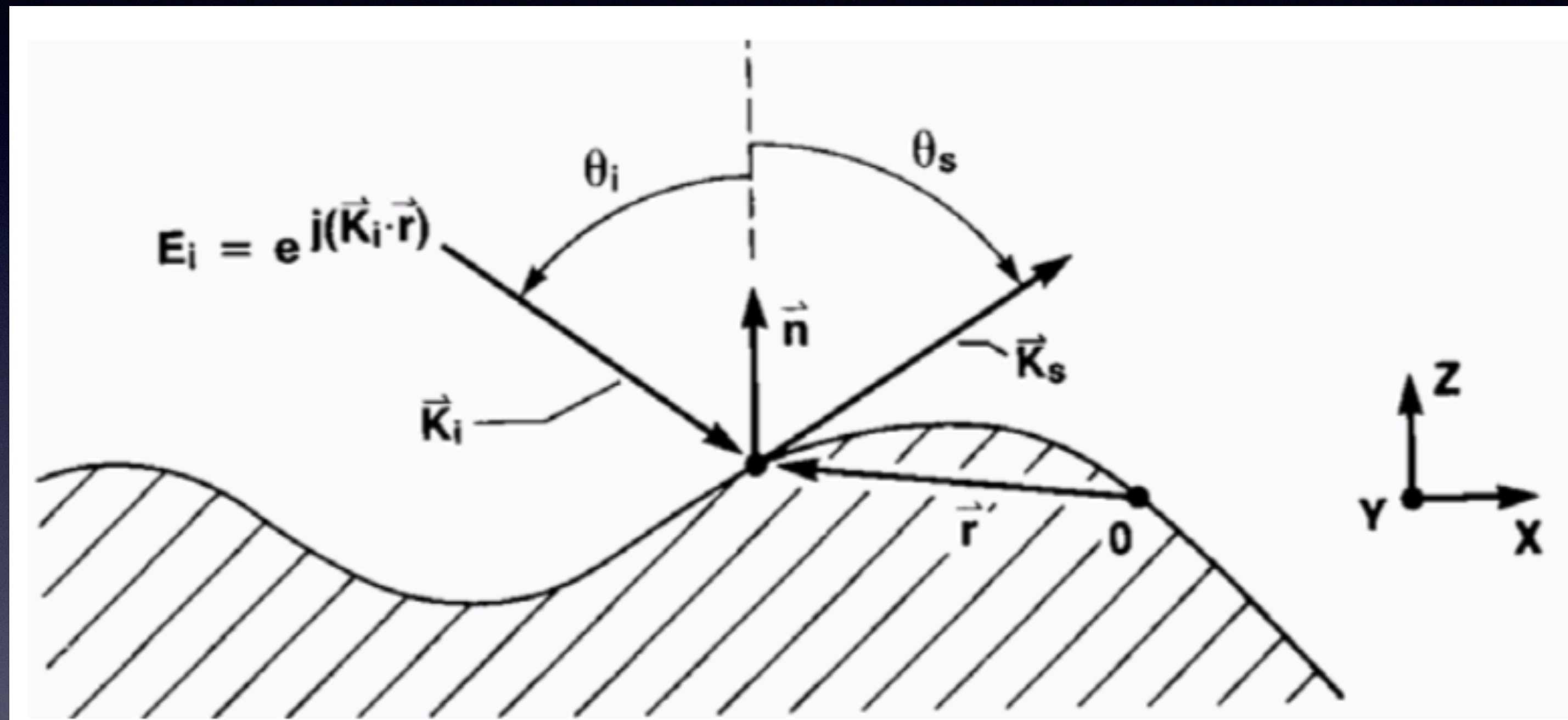


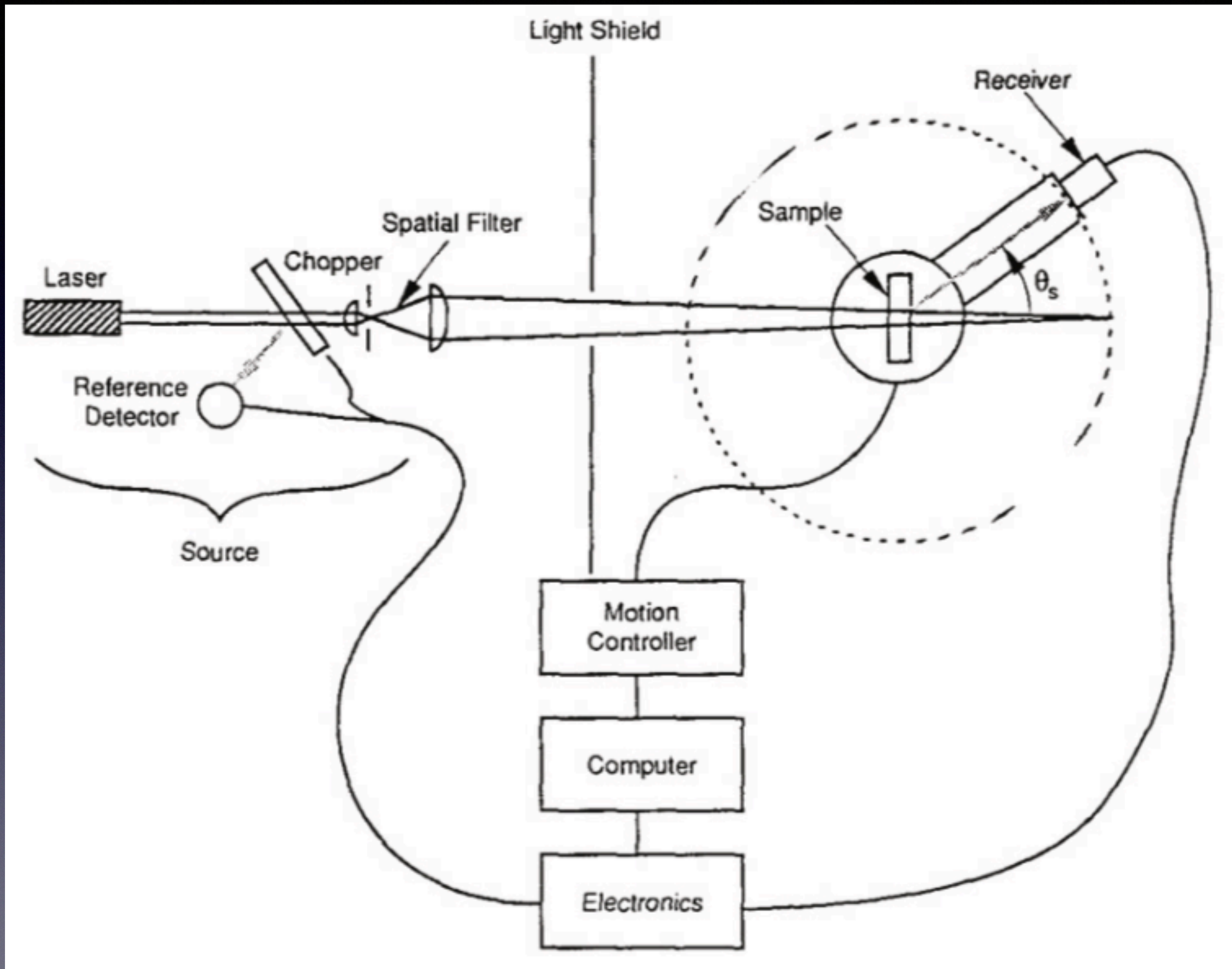
Angle resolved scattering



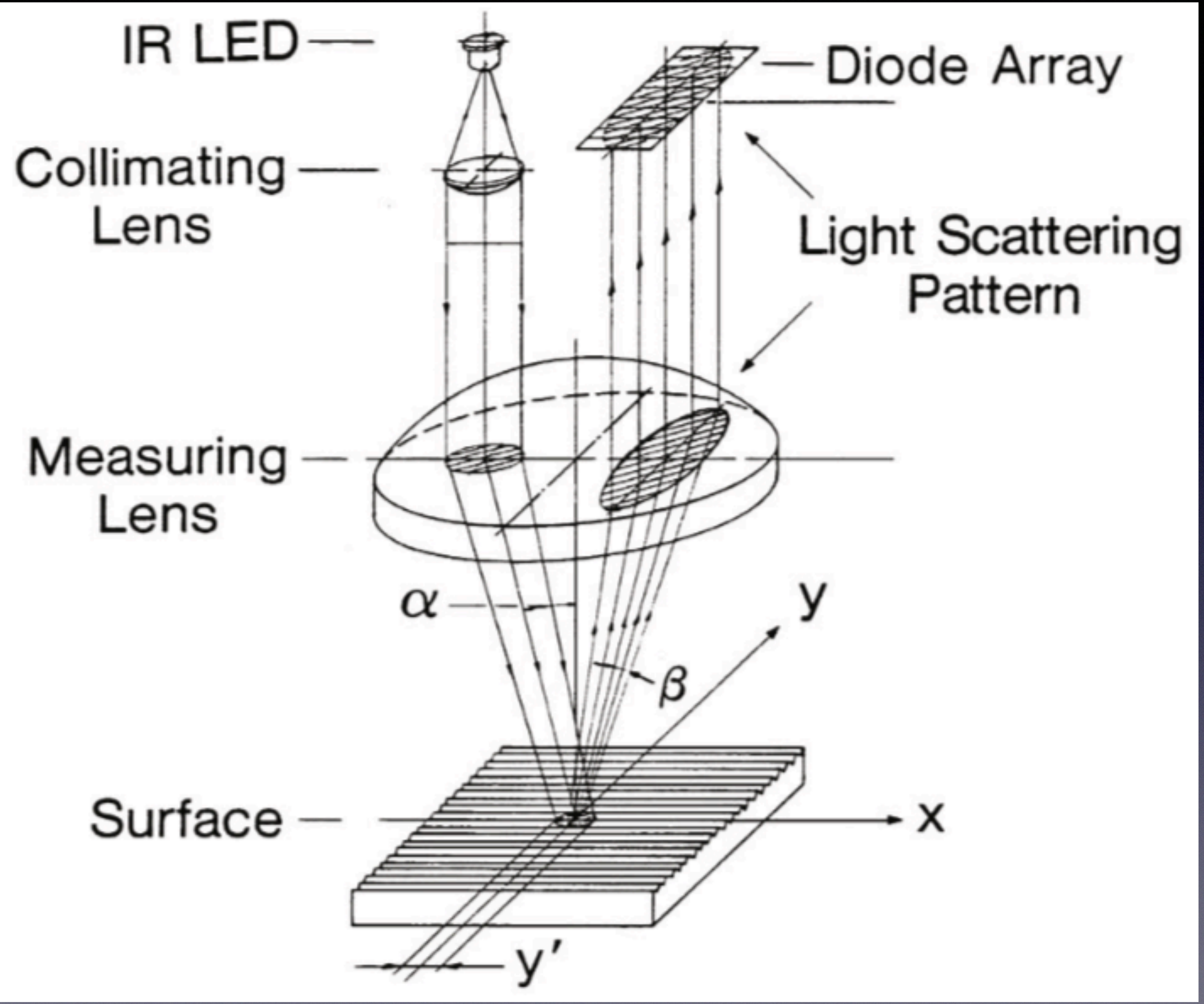
Total integrated scattered light

Teoria rozpraszania

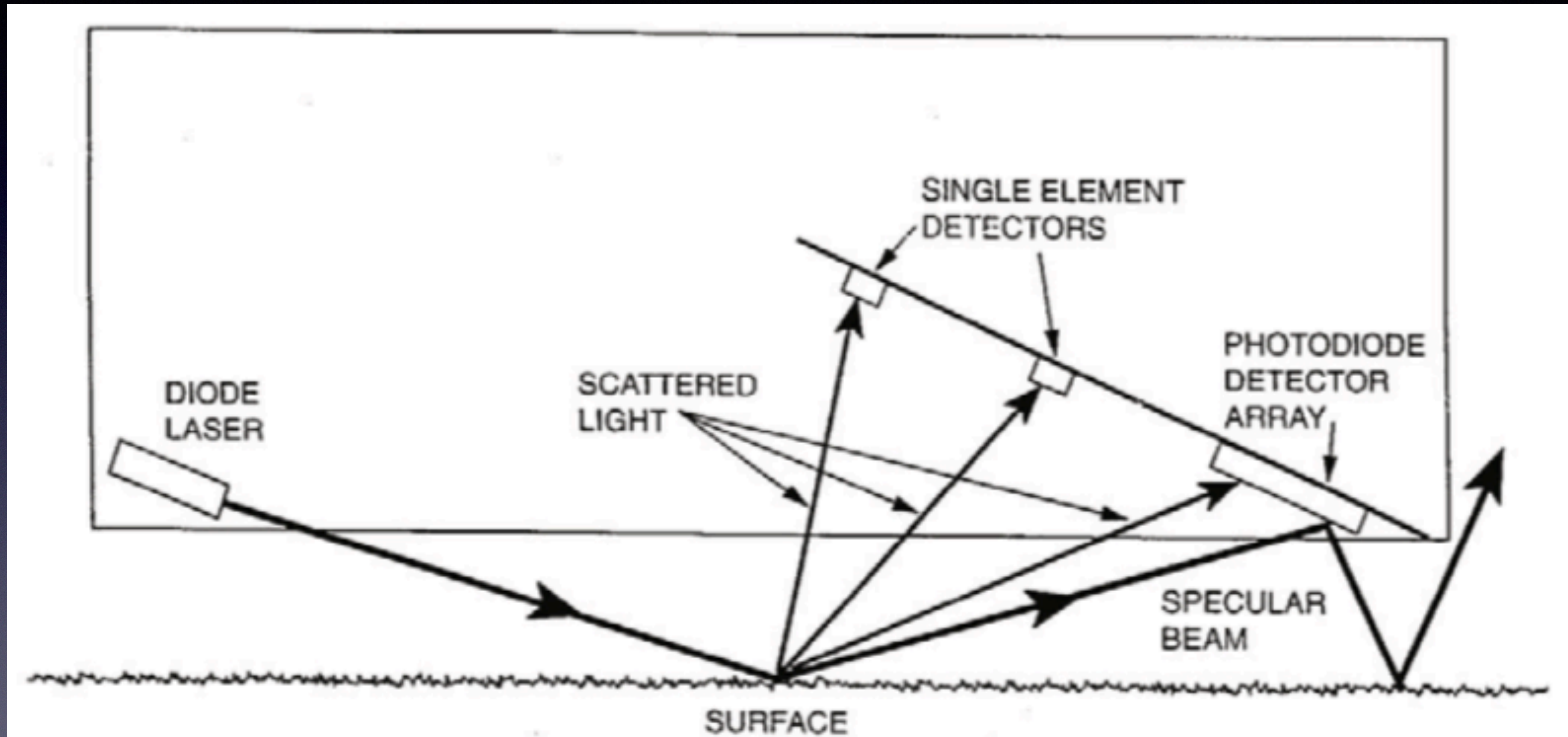




Schematic diagram of an apparatus to measure angle-resolved scattering (Stover 1995)

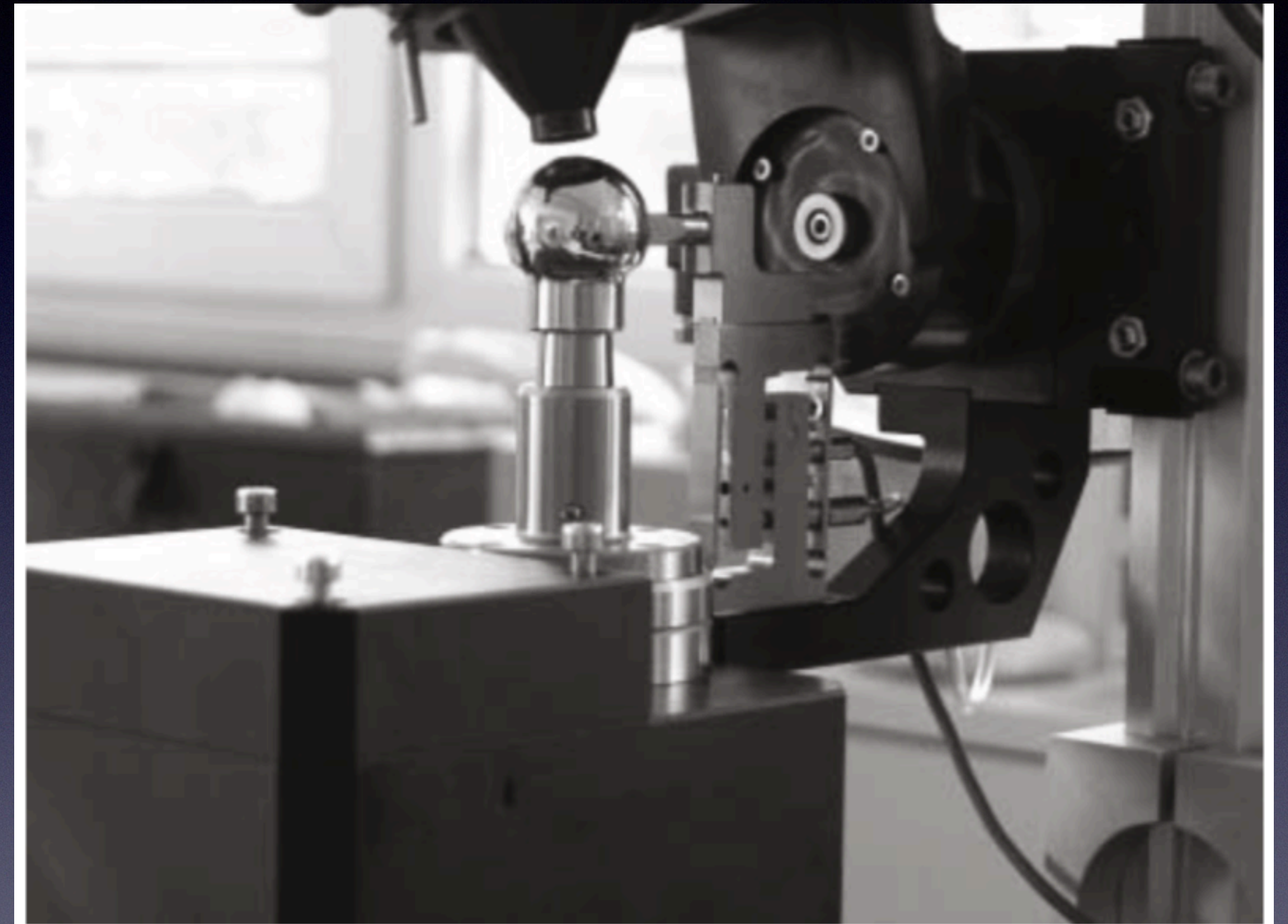
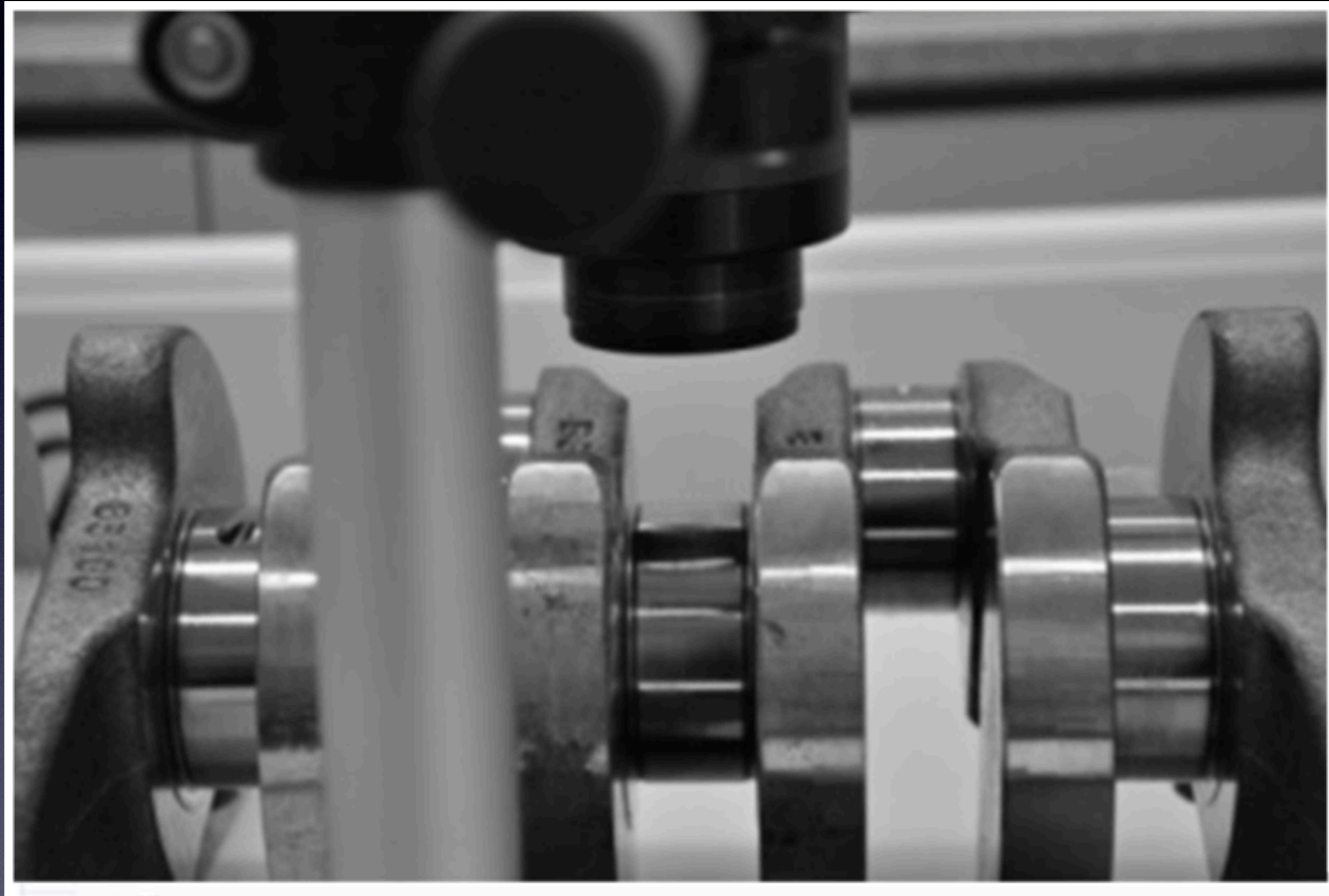


Schematic diagram of an optical scatterometer. IR LED stands for infrared light-emitting diode (Brodmann and Allgäuer 1988)



Schematic diagram of Lasercheck optical scatterometer (Valliant et al. 2000)

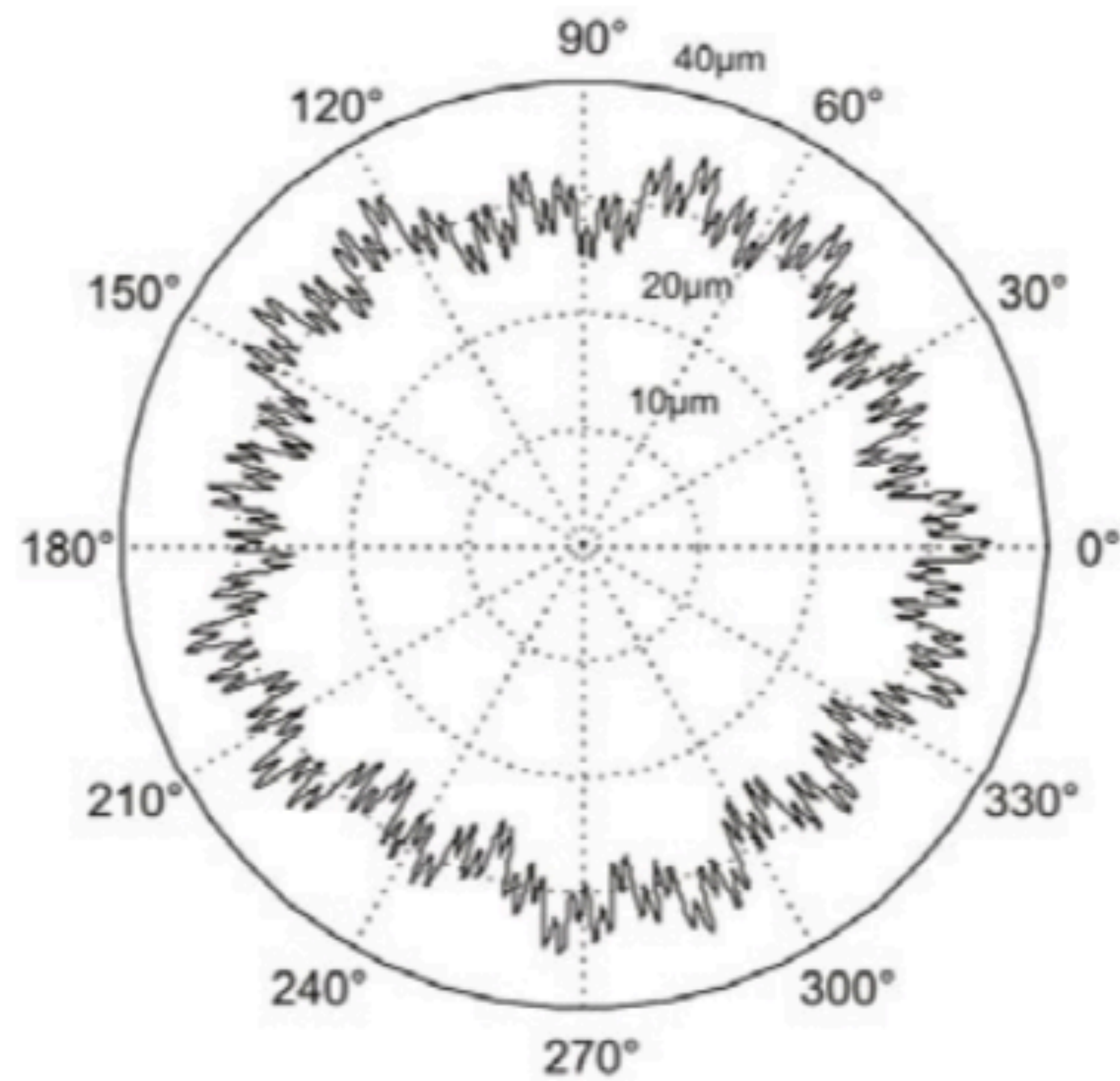
Układy współczesne



Opto-surf

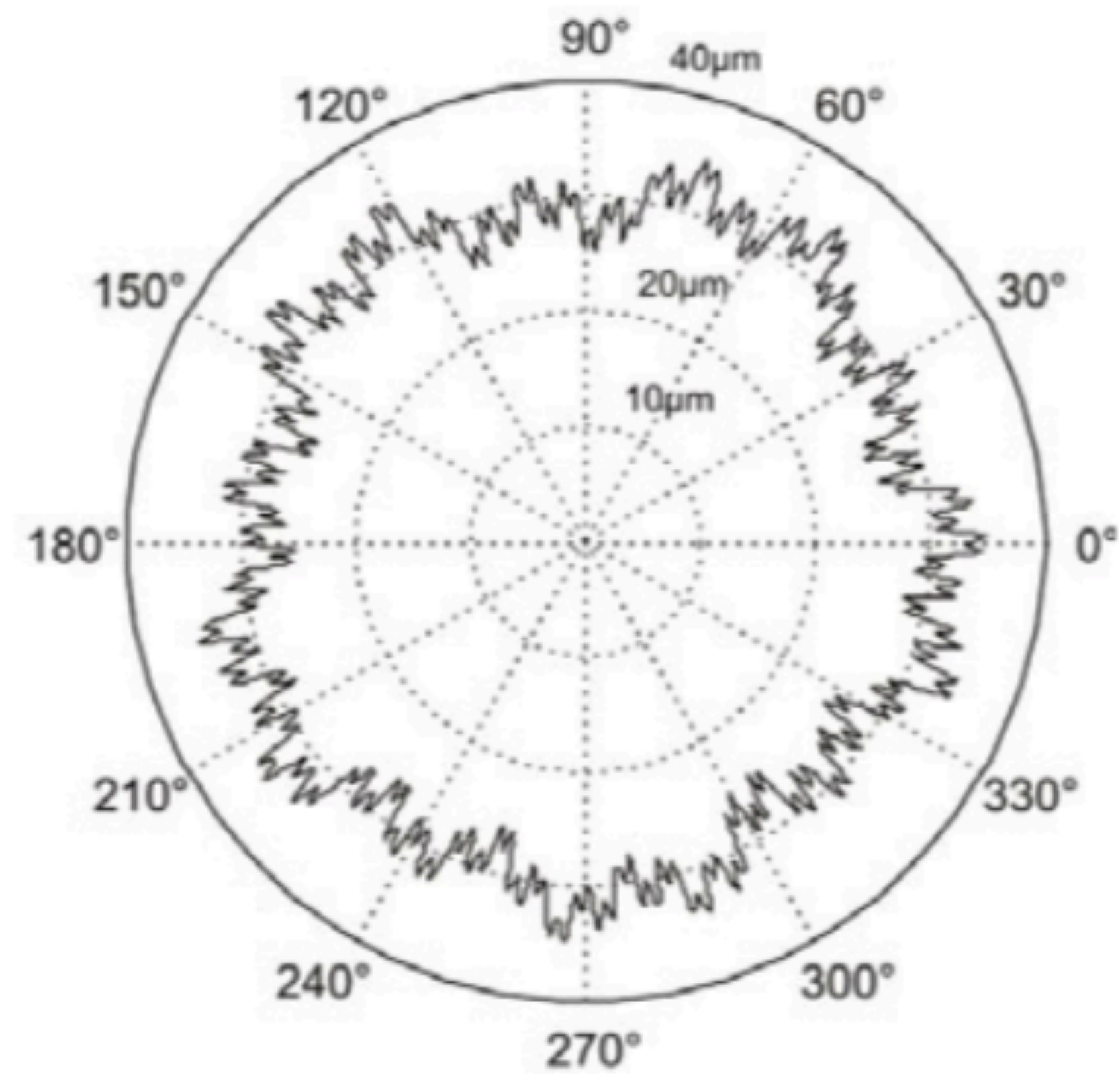
$P_l = 10.75\mu\text{m}$

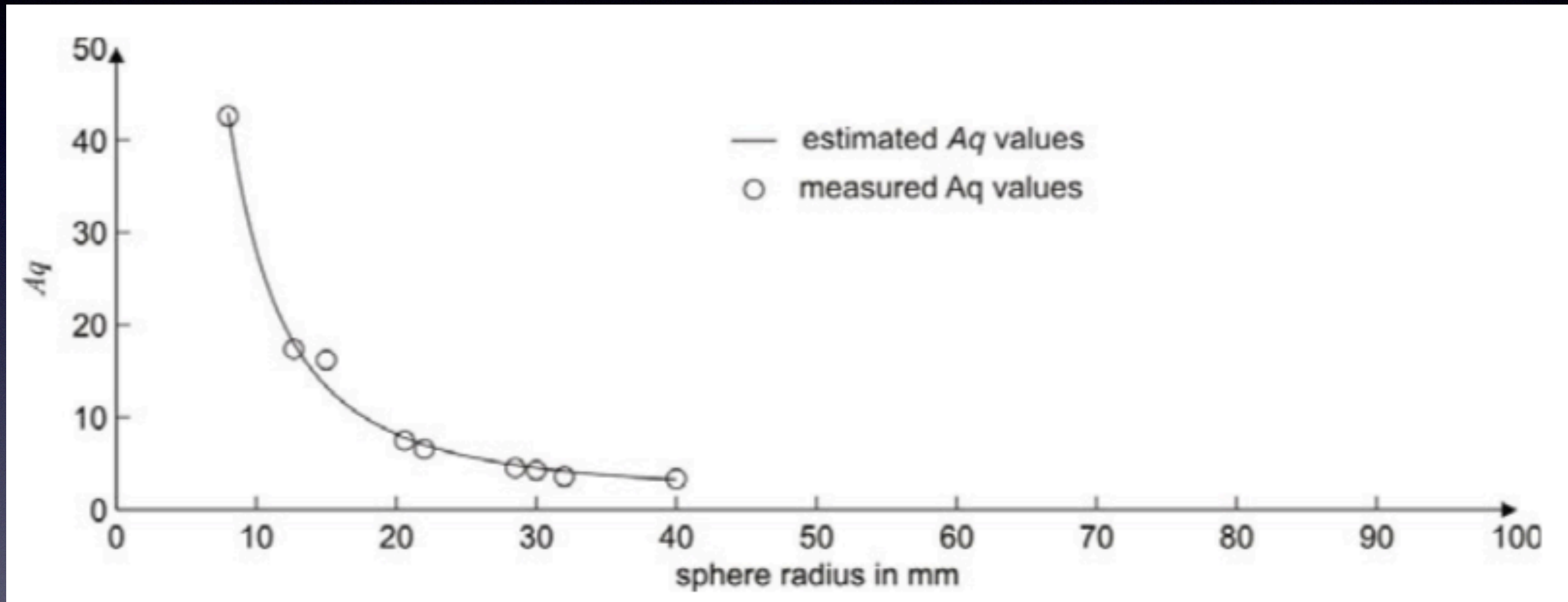
MFU 7



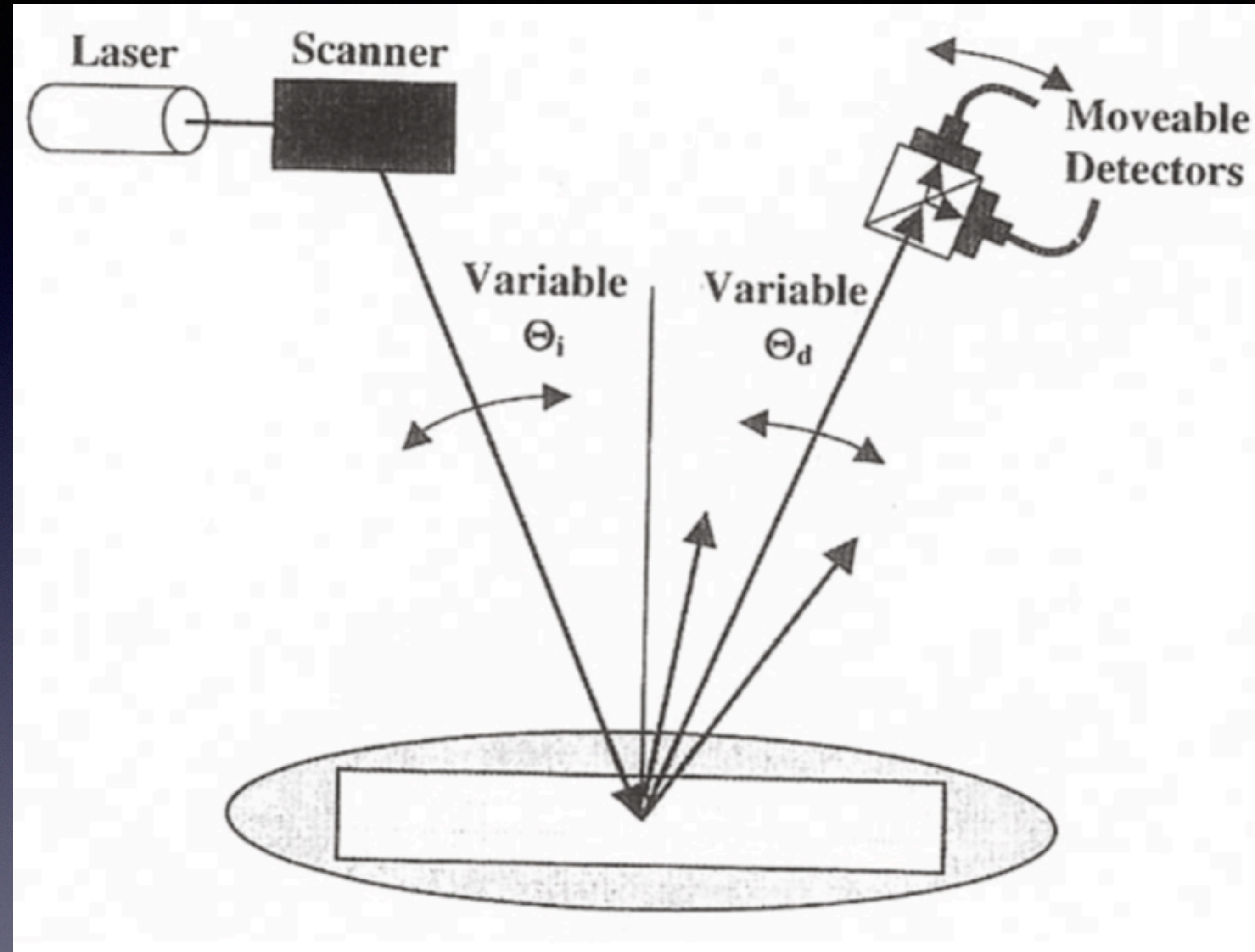
$P_l = 10.42\mu\text{m}$

light scattering sensor

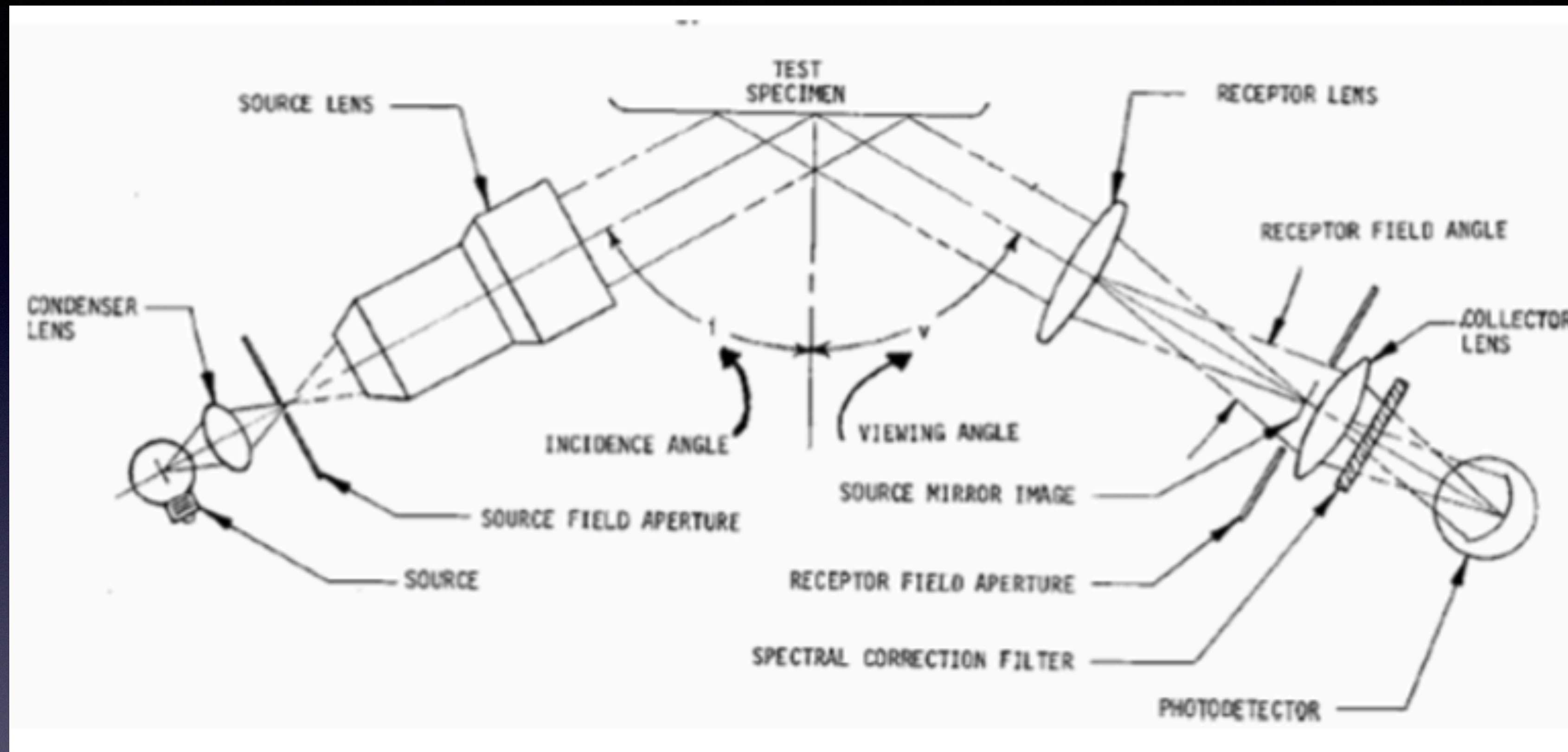




Estimated and measured A_q values for spheres with different radii but with the same micro-structure:
Leach, R.: Optical Measurement of Surface Topography. Springer Science & Business Media, Berlin, Heidelberg (2011).



Schematic diagram of a variable angle scatterometer useful for measuring the specular reflectance as a function of incident angle (Raymond 2001)



glossmeter - „połyskomierz”

Diagram of parallel-beam glossmeter showing apertures and the source mirror- image position, reprinted, with permission, from ASTM D523-08 Standard Test Method for Specular Gloss, copyright ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428

Dziękuję za uwagę