

Light scattering by dust grains is a complex problem when the size of the grain is about the wavelength of incident light. The Mie theory is often used to characterize such situation, however, most of the materials lacks knowledge of necessary material constants. Moreover, solution of Mie equations for general shapes is difficult and partly not known. Objective of this work is development of apparatus for light scattering measurements on small (micrometer ranged) arbitrary shaped dust grains levitating in the ultrasonic field. Trap parameters are obtained by survey of literature and by numeric simulations leading to design of reliable ultrasonic levitator including optical system. The results enable manufacturing and completion of such apparatus. Eventually, this work can serve as guide “how to design ultrasonic levitator”.