



(1) Johannes Kepler
(1571-1630)
Discovered and described total internal reflection in book entitled *Dioptrice* (1611)

(2) Willebrord Snellius
(1591-1626)
Discovered sin-law of refraction

(3) Isaac Newton
(1642-1727)
Discovered optical density (now called refractive index)

(4) Augustin Fresnel
(1788-1827)
Quantitatively described reflection

(5) Daniel Colladon
(1802-1893)
Developed first wave guiding apparatus