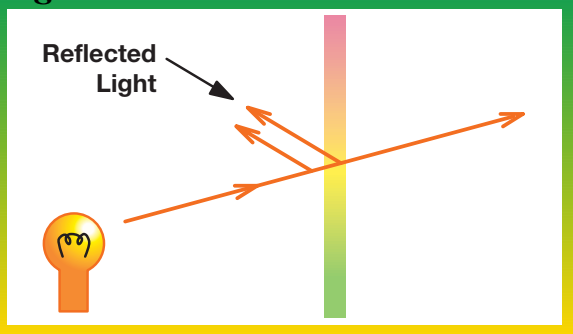


# METRON'S BREWSTER ANALYSIS METHOD

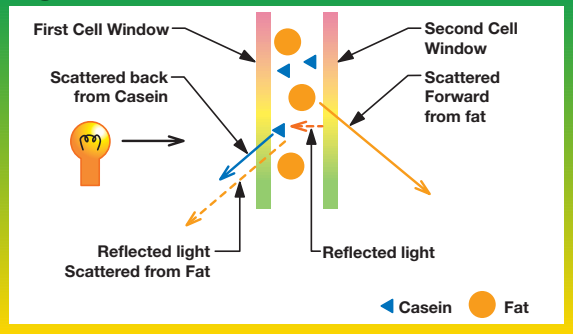
## LASER LIGHT, DUAL DETECTOR PHOTOMETER.....AT THE BREWSTER ANGLE

**Figure 1**



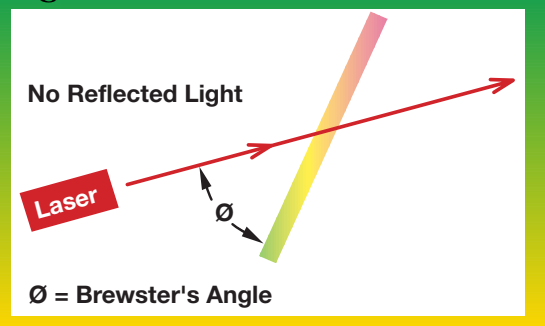
**Figure 1:** When laser light shines on a window, most of the light passes through the window and a small amount of light is reflected.

**Figure 2**



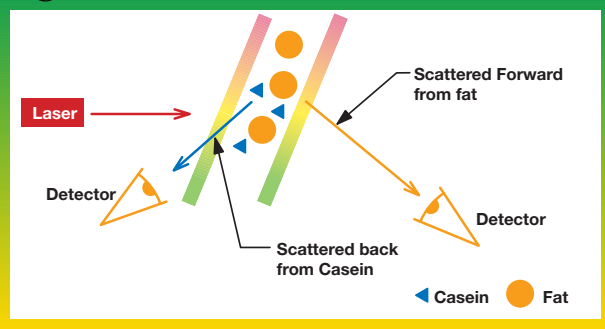
**Figure 2:** When laser light shines on milk in a sample cell, fat scatters the light at a forward angle, and casein scatters light at a backward angle. Reflected light from the sample cell and fat interferes with the back scattered casein light.

**Figure 3**



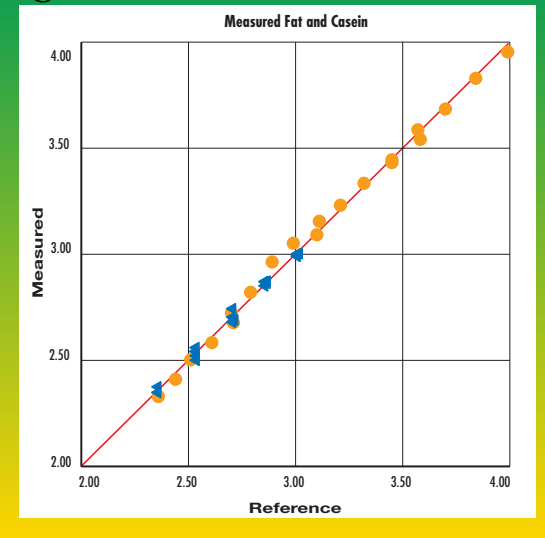
**Figure 3:** When laser light shines on a window at a specific angle, the Brewster angle, no light is reflected from the window. The light still passes through the window as before.

**Figure 4**



**Figure 4:** By tilting the cell at the Brewster angle there is no reflected light. The back scattered light from the casein can be measured without interference. It is proportional to the casein concentration. The fat is measured at the forward angle by the second detector.

**Figure 5**



**Figure 5:** Results from the Brewster Analysis method are shown. Condensed milk and cream were added and the test results were compared with the references.

	◀ Casein	● Fat
$r^2$	= 0.994	0.995
S.D.	= 0.019	0.035

U.S. Patents: 6,407,813  
6,795,183