I claim:

1. A method for detecting oxygen saturation in a blood comprising:

controlling two parallel light emitting diodes to respectively emit a red light and an infrared light periodically to a finger to be detected;

detecting the red light and infrared light passing through the finger, and converting the transmitted red light and infrared light into a red light electrical signal and an infrared light electrical signal respectively;

separating pulsating components from the two electrical signals to obtain a separated variation of red light in one cycle and a separated variation of infrared light in one cycle;

calculating the blood oxygen saturation based on the variations of red light and infrared light;

amplifying and filtering the blood oxygen saturation prior to converting the blood oxygen saturation into a digital signal by means of an analog-to-digital converter~~.~~,

~~2. The method of claim 1,~~ wherein the step of calculating the blood oxygen saturation based on the variations of red light and infrared light comprises:

$$SaO_2 = \frac{1}{K} ln \frac{\triangle RED - \triangle N}{(\triangle IR - \triangle N) + \triangle RED - \triangle N} \text{X} 100\%$$

Formula 3;

wherein SaO_2 is the blood oxygen saturation, K is a light absorption coefficient of a blood, $_{\triangle}$RED is a variation of the red light in one period, $_{\triangle}$IR

is a variation of the infrared light in one cycle, and $_{\Delta}N$ is a disturbance value of an ambient light.

~~3~~2. The method of claim 1, wherein the step of amplifying and filtering the blood oxygen saturation prior to converting the blood oxygen saturation into a digital signal by means of an analog-to-digital converter further comprises:

calculating the pulse P according to the electrical signals of red light and infrared light; in particular,

$$P = \frac{k_{\max}^{IR} * C_{\max}^{IR}}{k_{\min}^{IR} * C_{\min}^{IR}} / \frac{k_{\max}^{R} * C_{\max}^{R}}{k_{\min}^{R} * C_{\min}^{R}} \quad \text{Formula 4,}$$

wherein $k_{\max}^{IR}$ is the maximum value of an absorption coefficient of the infrared light, and $k_{\min}^{IR}$ is the minimum value of an absorption coefficient of the infrared light;

$k_{\max}^{R}$ is the maximum value of an absorption coefficient of the red light, and $k_{\min}^{R}$ is the minimum value of an absorption coefficient of the red light;

$C_{\max}^{IR}$ is the maximum value of a $C_{Hb}O_2$ concentration for infrared light, and $C_{\min}^{IR}$ is the minimum value of a $C_{Hb}O_2$ concentration for infrared light;

$C_{\max}^{R}$ is the maximum value of a $C_{Hb}O_2$ concentration for red light, and

$C_{\min}^{R}$ is the minimum value of a C_{HbO_2} concentration for red light.

43. A system for detecting oxygen saturation in a blood comprising:

a control unit for controlling two parallel light emitting diodes to respectively emit a red light and infrared light periodically to a finger to be detected;

a detection unit for detecting the red light and infrared light passing through the finger, and converting the transmitted red light and infrared light into a red light electrical signal and an infrared light electrical signal respectively;

a separation unit for separating pulsating components from the two electrical signals to obtain a separated variation of red light in one cycle and a separated variation of infrared light in one cycle;

a calculation unit for calculating the blood oxygen saturation according to the variations of red light and infrared light;

a conversion and transmission unit for converting the blood oxygen saturation into a digital signal by means of an analog-to-digital converter after amplifying and filtering of the blood oxygen saturation.

5. The system of claim 4, wherein the calculation unit is used for

$$SaO_2 = \frac{1}{K} ln \frac{\triangle RED - \triangle N}{(\triangle IR - \triangle N) + \triangle RED - \triangle N} \times 100\%$$

Formula 3;

wherein SaO_2 is the blood oxygen saturation, K is the light absorption coefficient of the blood, $_{\triangle}$RED is a variation of the red light in one period,

$_{\Delta}$IR is a variation of the infrared light in one cycle, $_{\Delta}$N is a disturbance value of an ambient light.

~~6~~4. The system of claim ~~4~~3, wherein the calculation unit can be further used for calculating the pulse P according to the electrical signals of red light and infrared light; in particular,

$$P = \frac{k_{\max}^{IR} * C_{\max}^{IR}}{k_{\min}^{IR} * C_{\min}^{IR}} / \frac{k_{\max}^{R} * C_{\max}^{R}}{k_{\min}^{R} * C_{\min}^{R}}$$ Formula 4;

wherein $k_{\max}^{IR}$ is the maximum value of an absorption coefficient of the infrared light, and $k_{\min}^{IR}$ is the minimum value of an absorption coefficient of the infrared light;

$k_{\max}^{R}$ is the maximum value of an absorption coefficient of the red light, and $k_{\min}^{R}$ is the minimum value of an absorption coefficient of the red light;

$C_{\max}^{IR}$ is the maximum value of a $C_{Hb}O_2$ concentration for infrared light, and $C_{\min}^{IR}$ is the minimum value of a $C_{Hb}O_2$ concentration for infrared light;

$C_{\max}^{R}$ is the maximum value of a $C_{Hb}O_2$ concentration for red light, and $C_{\min}^{R}$ is the minimum value of a $C_{Hb}O_2$ concentration for red light.