What is claimed is:

~~1. A centrifugal filtration device, for separating living cells, characterized by comprising a spindle, a rotary arm which is connected vertically to the spindle and rotating as the spindle rotates, and a microporous membrane filter which is mounted on the rotary arm;~~

~~wherein the microporous membrane filter comprises an inlet, an outlet, a front cavity having the inlet formed thereon, a rear cavity having the outlet formed thereon, and a filter membrane arranged between the front cavity and the rear cavity; the diameter of each filter pore formed in the filter membrane is smaller than that of the cell which needs to be separated;~~

~~the inlet and the front cavity are arranged on a far end referring to the rotary arm, and the outlet and the rear cavity are arranged on a near end referring to the rotary arm; the water in the cell suspension, the biological particle and the biomolecules pass through the filter membrane owing to the flowing fluid pressure, and the cells are blocked by the filter membrane and flung from the filter membrane to deposit in the front cavity due to the centrifugal force.~~

~~2. The centrifugal filtration device according to claim 1, characterized in that the length of the rotary arm is 10-30cm, the rotation speed of the rotary arm is 500-1500 revolutions per minute, and the centrifugal force produced by the rotary arm is 100-500g.~~

~~3. The centrifugal filtration device according to claim 1, characterized in that the cross section of the microporous membrane filter is round or square.~~

~~4. The centrifugal filtration device according to claim 1, characterized in that the diameter of the filter pore formed in the filter membrane is 1-30um.~~

~~5. The centrifugal filtration device according to claim 1, characterized in that the filter membrane is made of polyolefins or polyamides material.~~

~~6. The centrifugal filtration device according to claim 5, characterized in that the filter membrane is made of polypropylene, mixed cellulose, PE material or nylon material.~~

~~7. The centrifugal filtration device according to claim 1, characterized in that the inlet of the microporous membrane filter is connected to a inlet tube, which is connected to a piping assembly via a rotary joint; and the rotary joint is mounted on a holder which is arranged up over the axis of the rotary arm, a fixed component of the rotary joint is communicated to the piping assembly, a rotary component of the rotary joint is communicated to the microporous membrane~~

~~filter via the inlet tube, and the microporous membrane filter is capable of filtering cell suspension continuously while the spindle revolves.~~

~~8~~1. A cell separation system, characterized by comprising:

a disposable fully sealed piping system and an instrument system;

wherein the disposable fully sealed piping system comprises a microporous membrane filter, a primary filter, a rotary joint, a disposable syringe, an equilibrium liquid container, a cell suspension container, an enzyme solution container, and a pipe assembly;

the microporous membrane filter comprises an inlet, an outlet, a front cavity having the inlet formed thereon, a rear cavity having the outlet formed thereon, and a filter membrane arranged between the front cavity and the rear cavity; the diameter of each filter pore formed in the filter membrane is smaller than that of the cell which needs to be separated; the inlet and the front cavity are arranged further away from the point where the centrifugal force is produced than the outlet and the rear cavity are arranged, and the water in the cell suspension, the biological particle and the biomolecules pass through the filter membrane owing to the flowing fluid pressure, and the cells are blocked by the filter membrane and flung from the filter membrane to deposit in the front cavity due to the centrifugal force;

the pipe assembly comprises a first pipe, a second pipe, a third pipe, a fourth pipe, a fifth pipe, a sixth pipe, and a seventh pipe;

the cell suspension container is arranged upside down, whose opening is communicated to the first pipe; the primary filter is mounted on the first pipe;

the equilibrium liquid container is arranged upside down, whose opening is communicated to the second pipe, and the second pipe is connected to the first pipe;

one end of the third pipe is communicated to the junction between the first pipe and the second pipe, and the other end is communicated to the disposable syringe;

one end of the fourth pipe is communicated to the disposable syringe, the other end is communicated to a fixed end of the rotary joint;

one end of the fifth pipe is communicated to a rotary end of the rotary joint, the other end is communicated to the inlet tube of the microporous membrane filter;

one end of the sixth pipe is communicated to the outlet of the microporous membrane filter, and the other end is communicated to a waste collection tank;

one end of the seventh pipe is communicated to the junction between the first pipe and the second pipe, and the other end is communicated to the enzyme solution container;

the instrument system comprises a rotary arm assembly, an injection pump, a temperature control unit for equilibrium liquid, a temperature control unit for

cell suspension, a vibrator for cell suspension, and an electromagnetic controlling valve;

an end of the rotary arm assembly is mounted on the microporous membrane filter, a spindle which drives the rotary arm and a rotation axis of the rotary joint are on a straight line;

the disposable syringe is controlled by the injection pump; the temperature control unit for equilibrium liquid is arranged outside the equilibrium liquid container, to heat the equilibrium liquid and control its temperature; the temperature control unit for cell suspension is arranged outside the cell suspension container, to heat the cell suspension and control its temperature; the cell suspension container and the temperature control unit for cell suspension are arranged on the vibrator for cell suspension, which oscillates the cell suspension container automatically with the frequency predetermined by a computer;

the electromagnetic controlling valve comprises a first controlling valve, a second controlling valve, a third controlling valve, and a fourth controlling valve;

the first controlling valve is mounted on the first pipe, and arranged in front of the junction between the first pipe and the second pipe;

the second controlling valve is mounted on the second pipe;

the third controlling valve is mounted on the fourth pipe, and arranged between the rotary joint and the disposable syringe;

the fourth controlling valve is mounted on the seventh pipe.

~~9~~2. The cell separation system according to claim ~~8~~1, characterized in that the diameter of each filter pore formed in the primary filter is larger than that of the target cell, and the diameter of the filter pore of the primary filter is 200-300 mesh.

~~10~~3. The cell separation system according to claim ~~8~~1, characterized in that the electromagnetic controlling valve is electromagnetic pinch valves, to control the opening and closing of the pipe assembly.

~~11~~4. The cell separation system according to claim ~~8~~1, characterized in that the front cavity and the rear cavity are separated by the filter membrane, the inlet is arranged at the top or a sidewall of the front cavity, and the outlet is arranged at the bottom or a sidewall of the rear cavity.

~~12~~5. The cell separation system according to claim ~~8~~1, characterized in that the filter membrane is hydrophilic membrane.

~~13~~6. The cell separation system according to claim ~~8~~1, characterized in that the diameter of the filter pore formed in the filter membrane is 1-30 um.

~~14~~7. The cell separation system according to claim ~~10~~3, characterized in that the filter membrane is made of polyolefins or polyamides material.

~~15~~8. The cell separation system according to claim ~~14~~7, characterized in that the filter membrane is made of polypropylene, mixed cellulose, PE material or nylon material.