to be a fouling of the filter which fouling must be removed in order to continue filtering. To this end, the device of EP 0122867 is configured as a dead-end filter in which no outlet is provided for the residue (the part remaining after the filtrate is extracted) at an end of the tubular filters distant to the inlet of the tubular filters; thereby no continuously one-way flow of fluid through the tubular filters are provided and the residue is, consequently, flushed out backwardly from the tubular filter elements to remove the cake. Moreover, in EP 0122867 the cake originates from the medium being filtered, and therefore constitutes a fouling layer deposited during the filtration stage.

Hence, an improved fine screening would be advantageous, and in particular a more efficient and/or reliable increase of the dry matter content in material to be digested would be advantageous.

OBJECT OF THE INVENTION

An object of the present invention is to provide an alternative to the prior art.

A further object of the invention may be seen as to improve the filtration of wastewater.

Yet a further object of the invention may be seen as to increase the treatment capacity of a plant treating wastewater.

In particular, it may be seen as a further object of the present invention to provide a filtering device that solves the above mentioned problems of the prior art.

SUMMARY OF THE INVENTION

Thus, the above described object and several other objects are intended to be obtained in a first aspect of the invention by providing a water treatment system comprising a filtering device, the water treatment system comprising

- a biological treatment device adapted to provide a sludge from wastewater or filtrated wastewater and a digester adapted to provide digester sludge, the filtering device being in fluidic connection with the biological treatment

- device to receive sludge formed int eh biological treatment device, and the biological treatment device being in fluidic connection with the filtering device for receiving filtrated wastewater from the filtering device or for delivering sludge to be filtered to the filtering device,

wherein

- the filtering device is a cake filtration device comprising a fluid penetrable support structure, the support structure being provided as one or more tubular elements having a filtration cake provided on the inside of the fluid penetrable support structure, the filtering device having
  - an inlet being fluidic connected to the biological treatment device to receive sludge or connected to receive wastewater to be filtered so that the flux direction of sludge or wastewater to be filtered is from the interior of the tubular element, through the filtration cake and to the outside of the tubular element thereby providing a filtrate,
  - an outlet for outletting liquid from the interior of the tubular element,
  - a filtrate outlet for outletting filtrate from the filtering device, to the biological treatment device or for outletting treated water, and
  - a nozzle arranged to introduce gas, such as air, into the interior of the tubular element,
- the filtration cake being provided by deposition of solids from the sludge formed in the biological treatment device and in the digester.

The sludge solids (solids from sludge) for e.g the filtration cake is typically provided by the biological treatment device; in embodiments including a digester a fraction of the sludge solids may come from the digester.

In the present context a number of terms are used as would be readily understood by a skilled person. Some of these terms are detailed in the following.

Sludge solids (solids from sludge) is preferably used to means activated sludge flocs and/or coagulated substances, typically, formed in a biological treatment device.

Cake filtration is used to indicate a process in which a liquid is filtrated by flowing through a filtration cake as disclosed herein

Filtration cake is used to indicate a layer of solid material deposited on a support structure, which solid material is in particulate form and origins typically as a