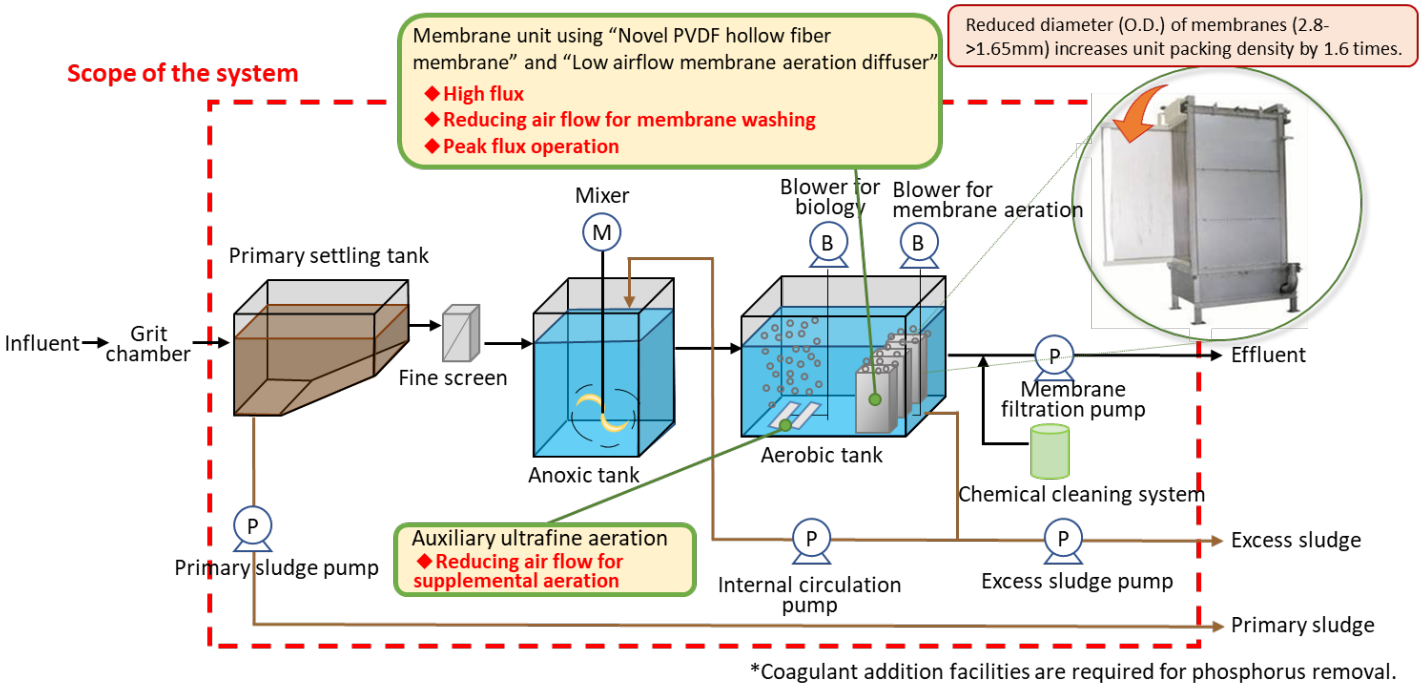
Energy Saving MBR Using Novel PVDF Hollow Fiber Membranes

Developers: Mitsubishi Chemical Aqua Solutions Co., Ltd., Swing Engineering Corporation, Mitsubishi Kakoki Kaisha, Ltd.

The system adopts (i)PVDF* hollow fiber membranes with small diameter (high packing density), (ii)a low air-flow membrane aeration system, and (iii)an auxiliary aeration system with superfine air bubble diffusers. This new MBR system enables energy-saving, cost-reduction, and adaptability to inflow fluctuation.

*PVDF：Polyvinylidene Difluoride



*Coagulant addition facilities are required for phosphorus removal.

Needs

- MBR with energy and cost savings
- MBR responding to the temporary inflow fluctuation

Benefits

- Energy-saving by air-flow rate reduction (0.4kWh/m^3 or less)
- Fewer numbers of membrane units reduce initial cost and membrane replacement cost
- High adaptability to inflow fluctuation by peak flux operation