

Development of Hot-seawater Desalination combined with
nanofiltration membrane as pre-treatment (2)

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New high efficient desalination process utilizing reverse osmosis membrane combined with nanofiltration membrane as pre-treatment is proposed. In this process, hot-seawater is used as feed resulting in the high flux with acceptable permeation of salt for drinking. The theoretical estimation based on the permeation model, carried out in last year investigation, revealed the significant cost-down in the necessary energy. In this year, the possibility of the protection of bio fouling on the membrane surface in the hot-seawater desalination is investigated. The experiment with seawater permeation on the nanofiltration membrane having similar properties to the reverse membrane shows that the hot-seawater feed promotes the bio fouling on the membrane surface caused the serious decrease of flux compared with that in seawater desalination under moderate temperature. However, the interval introducing of the non-salt water into the line efficiently prevents the bio fouling in hot-seawater desalination with remaining the high flux.