An increase in global demand for clean water has put pressure on society to find a sustainable and energy efficient way to purify wastewater. Conventional water purification methods such as reverse osmosis (RO), crystallization, or distillation have high energy demands, complex processes, or restricted operating conditions. Our approach offers wider operating conditions with reasonable energy demands by combining forward osmosis (FO) with stimuli-responsive polymer particles as a greener alternative to conventional FO draw agents.