

Developing a simple method to create freshwater from seawater

Emi Ozawa¹, *Miyu Ogawa¹, *Haru Onodera¹

1. Tokyo Metropolitan Tama High School of Science and Technology

Now, there are many problems about population explosion and lack of water and food. Then we thought to use Seawater for agriculture.

As an experiment method, we chose stirring Seawater with some additives which adsorb chloride or sodium ions. We used Hydro talcite and molecular sieve.

First, we added additives to Seawater and stirred for 1 hour, 200rpm. Then we filtered out the additives, and analyzed the filtrate and the remnants. This time, we repeated this experiment three times. We used molecular sieve 3A, 4A, 5A, and 13X, volcanic ash, and Hydro talcite.(fig 8)

As a result of analyzing the filtrate, molecular sieve 4A and Hydro talcite adsorbed chloride ions the best, however, nothing adsorbed sodium ions (fig 1-5). In addition, chlorine in each additives increased.

Second, we verified to reuse molecular sieve. We baked molecular sieve 4A after use at 150 degrees Celsius, for 1 hour, and stirred the Seawater with it for 1 hour, 200rpm. After that, we filtered out and analyzed the molecular sieve and the filtrate. As a result, we found baked molecular sieve 4A adsorbed chloride ions in the Seawater.