عنوان مقاله:

High-throughput Microfluidic Desalination via Electrodialysis

محل انتشار:

بیست و هشتمین کنفرانس سالانه بین المللی انجمن مهندسان مکانیک ایران (سال: 1399)

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نویسندگان:

Rasool Dezhkam - *BSc student of mechanical and chemical engineering, Micro+Nanosystems & Applied Biophysics Laboratory, Department of Mechanical Engineering, Babol Noshirvani University of Technology, P.O. Box ۴۸۴, Babol, ,Iran*

Ermia Azari Moghaddam - *BSc student of mechanical engineering, Micro+Nanosystems & Applied Biophysics Laboratory, Department of Mechanical Engineering, Babol Noshirvani University of Technology, P.O. Box ۴۸۴, Babol, ,Iran*

Morteza Miansari - *Micro+Nanosystems & Applied Biophysics Laboratory, Department of Mechanical Engineering, Babol Noshirvani University of Technology, P.O. Box ۴۸۴, Babol, Iran,Department of Cancer Medicine, Cell Science Research Center, Royan Institute for Stem Cell Biolog*

خلاصه مقاله:

Almost 70% of the earth’s surface is covered by water; however, this water is saline beyond use for drinking. Natural freshwater sources are depleting at a fast pace and we already face extreme water shortage in some parts of the earth. As water shortage is a huge problem, threatening the future of human life, producing potable water from brackish or seawater proves to be a vital field of research and technology. Many macro and micro scale systems and technologies are being developed to produce the ever-growing need for water desalination. In the present study, a micro scale method namely Electrodialysis, has been considered (ED), to desalinate seawater with the NaCl concentration of 500 mol/m3, and the number of cells, required for daily needs of a human being was studied. A final concentration of 6.2 mol/m3 is reported, using the proposed desalination process. This study proves that with the use .of only 26 ED, one human being can be supplied with fresh water every day

کلمات کلیدی:

.electrodialysis, microfluidics, desalination

لینک ثابت مقاله در پایگاه سیویلیکا: