

## عنوان مقاله:

Energy and water Recovery from Waste Heat Streams

## محل انتشار:

سومین کنفرانس بین المللی رویکردهای نوین در نگهداشت انرژی (سال: 1392)

تعداد صفحات اصل مقاله: 10

## نویسندگان:

M. Tavana - *Student Master of Chemical Engineering, Iran University of Science and Technology*

,S.N. Ashrafizadeh - *Associate Professor of Chemical Engineering, Iran University of Science and Technology*

## خلاصه مقاله:

A new waste heat and water recovery technology based on a nanoporous ceramic membrane water vapor separation mechanism was developed, to extract the water vapor and its latent heat from low temperature high moisture content waste gas streams. For the water reclamation process, water vapor condenses inside the membrane pores and passes through to the permeate side which is in direct contact with a low-temperature water stream. Contaminants such as CO<sub>2</sub>, O<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub> are inhibited from passing through the membrane by its high selectivity. The recovered water is of high quality and mineral free, therefore can be used as supplemental makeup water for almost all industrial processes. The membrane based technology has been first developed and demonstrated for industrial boiler flue gas heat and water recovery. Now it is being developed for wider applications, from residential humidification, commercial laundry, biomass production to utility boilers. The increased application areas will greatly enhance waste heat and water recovery potentials worldwide, to save both energy and water, and benefit the global environment. In this paper, the technology development process, and several demonstrations for different applications are discussed in details.

## کلمات کلیدی:

Ceramic Membrane, Waste Heat, Water Vapor, Energy Recovery

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/305459>

