International Conference
BUILDING SERVICES and AMBIENTAL COMFORT
20th Edition
April 7-8, 2011 – TIMIŞOARA, ROMANIA

CONSIDERAȚII PRIVIND IMPLEMENTAREA HIDROGENULUI CA VECTOR ENERGETIC AL VIITORULUI

Prof. Dr. Ing. Gheorghe BADEA,
Drd. Ing. Constantin CILIBIU
Drd. Ing. Călin SAFIRESCU
Universitatea Tehnică din Cluj-Napoca, Facultatea de Instalații

Rezumat

În viitor, datorită caracterului limitat și finit al resurselor, sistemele noastre de producere a energiei vor trebui să fie echipate aproape în totalitate cu surse regenerabile, să fie eficiente și în același timp costurile pentru producerea și transportul energiei să se încadreze în limitele comun acceptate pentru utilizarea acestora la scară mare.

Abstract

In the future, due to the limited and finite resources, our energy production systems must be equipped almost entirely with renewable sources, they need to be effective and at the same time energy transport and production costs must frame within the commonly accepted for large-scale use.

1. Introducere

Producția hidrogenului, indiferent de metoda folosită, necesită în prezent consumuri mari de energie fapt ce conduce la o scădere a eficienței globale a procesului. Este esențială dezvoltarea unor noi tehnologii pentru

International Conference
BUILDING SERVICES and AMBIENTAL COMFORT
20th Edition
April 7-8, 2011 – TIMIŞOARA, ROMANIA

DETERMINING OF THE INSTANTANEOUS IRRADIATED AREA OF THE LOWER ABSORBER SURFACE OF THE DOUBLE EXPOSURE FLAT-PLATE SOLAR COLLECTOR

Novak Nikolić[a], Nebojša Lukić, Dragan Cvetković
[a] *The Faculty of Mechanical Engineering, Kragujevac, Serbia,*
lepinole@yahoo.com

Abstract:

The term double exposure, flat-plate water solar collector is related to the solar collector which has the ability to absorb solar irradiation from the upper and lower surface of its own absorber. Absorption of solar irradiation, from its lower absorber surface is accomplished using reflecting surface placed below the collector. In comparison with conventional flat-plate solar collector, at analyzed collector, insulation mounted in the lower part of the collector box is replaced by glazing. Because of the exclusion of the insulation, therefore reducing overall collector heat losses, absorber of the same is coated with selective coating on both sides. Described collector is analyzed in order to determine the possibilities of improving its efficiency, in comparison with conventional collector, which among other things depends on size of the irradiated area of the lower absorber surface. This paper presents the mathematical model for determining the irradiated area of the lower absorber surface of the mentioned analyzed collector-reflector system for different possible positions and dimensions of the reflector relative to the collector. The model can be used for numerical optimization of the positions and dimensions of the reflective surface (reflector) relative to the collector. The basis and reason for the future conducting of the numerical analysis, relies