

CONTENTS

A. A. Genbach, K. K. Shokolakov, D. Y. Bondartsev, I. K. Iliev, A. Terziev, Research of specific destruction energy of the porous coatings at power units	5
A. S. Askarova, S. A. Bolegenova, S. A. Bolegenova, R. K. Manatbayev, V. Yu. Maximov, Zh. K. Shortanbayeva, A. O. Nugymanova, A. S. Bergaliyeva, 3D computer simulation of heat and mass transfer processes to improve the energy efficiency of combustion chambers.....	11
A. S. Askarova, S. A. Bolegenova, V. Yu. Maximov, S. A. Bolegenova, N. R. Mazhrenova, Zh. K. Shortanbayeva, R. K. Manatbayev, M. R. Mamedova, Numerical simulation of turbulent combustion of pulverized coal flame	19
C. Dulucheanu, T. L. Severin, A. Potorac, L. Irimescu, J. Javorova, Influence of the initial structure on the critical points in solid-state phase transformation of some hypoeutectoid steels	26
Dan Wang, Li Wang, Rui Xu, Xingan Wu, Yunlan Li, Comparison of antiviral activity of realgar and nano-realgar against herpes simplex virus type II (HSV-2) <i>in vitro</i>	34
I. Klinovitskaya, D. Kalygulov, S. Plotnikov, P. Lay, Increasing the efficiency of photovoltaic cells based on Kazakhstan silicon	41
I. V. Khromushin, Yu. V. Yermolaev, N. K. Kasmamytov, T. I. Aksenova, T. Tusseyev, L. A. Stanbay, Radiation modification of $\text{BaCe}_{0.85}\text{Nd}_{0.15}\text{O}_{3-\delta}$	49
J. F. Liu, T. R. Fu, Simulations of the macroscopic energy migration diffusion characteristics in upconversion core-shell nanostructures	55
Jie Guo, Peng Wu, Jun Yuan, Lichun Sun, Qiong Li, Bingzhe Li, Activation and gas sorption performance in Zr-Co-Y getters on Ge substrates	63
Jing Li, Fan Yi, Xudong Zhao, Xiaoman Bai, Ali Badiei, Xiaoli Ma. Thermodynamic analysis of an innovative heat pump using indoor and outdoor air as heat source	69
Mengjiao Zhang, Hongyan Zhou, Siqing Niu, Xi Chen, Yunlan Li, Screening of Antitumor and Hepatoprotective Activity Components from <i>Hedyotis diffusa</i>	77
Siqing Niu, Yunlan Li, Xi Chen, Mengjiao Zhang, Qingshan Li, Comparative study on the quality control of trihydroxybenzophenones compounds	84
T. St. Petrova, D. B. Dzhonova-Atanasova, Simulation of the liquid distribution in the wall zone of a packed column: case study	91
Wang Lu, Jie Guo, Hao Ruiting, A. Aierken, Sun Lichun, Qiong Li, Liu Bin, Gu Kang, Sun Shuaihui, Influence of ZnS Sputtering Power on Film Adhesion and $\text{Cu}_2\text{ZnSnS}_4$ Solar Cells	99
Zh. K. Akasheva, B. K. Assilbekov, A. A. Kudaikulov, Numerical calculation of the permeability of fibrous porous medium	106