

Polish Academy of Sciences
University of Engineering and Economics in Rzeszów
Lviv Polytechnic National University
University of Life Sciences in Lublin
Faculty of Production Engineering

ECONTECHMOD

AN INTERNATIONAL QUARTERLY JOURNAL ON ECONOMICS
IN TECHNOLOGY, NEW TECHNOLOGIES AND MODELLING PROCESSES

Vol. 3, No 1

LUBLIN-RZESZÓW 2014

Editors-in-Chief: Eugeniusz KRASOWSKI, POLAND
Yuriy BOBALO, UKRAINE
Assistant Editor: Andrzej KUSZ, POLAND

Associate Editors

1. ECONOMICS IN TECHNOLOGY: Nestor SHPAK, Lviv; Oleh KUZMIN, Lviv
2. NEW TECHNOLOGIES: Aleksandr DASHCHENKO, ODESSA; Andrzej KUSZ, LUBLIN
3. MODELLING PROCESSES: Yuriy OSENIN, LUGANSK; Andrzej MARCINIAK, LUBLIN
4. MECHANICAL ENGINEERING: Gennadiy OBORSKI, ODESSA; Iliia NIKOLENKO, SIMFEROPOL
5. MATHEMATICAL STATISTICS: Andrzej KORNACKI, LUBLIN; Rostisław BUN, Lviv

Editorial Board

Valeriy ADAMCHUK, Kiev, Ukraine
Andrzej BALIŃSKI, Kraków, Poland
Viktorija BATLUK, Lviv, Ukraine
Vitaliy BOYARCHUK, Lviv, Ukraine
Zbigniew BURSKI, Lublin, Poland
Mykoła CHAUSOV, Kiev, Ukraine
Valeriy DUBROVIN, Kiev, Ukraine
Valeriy DYADYCHEV, Lugansk, Ukraine
Sergiy FEDORKIN, Simferopol, Krym
Jerzy GRUDZIŃSKI, Lublin, Poland
Ivan HOLOVACH, Kiev, Ukraine
Oleksandr HOŁUBENKO, Lugansk, Ukraine
L.P.B.M. JONSSEN, Groningen, Holland
Viktoria KHARCHUK, Lviv, Ukraine
Vladimir KOBZEV, Kharkiv, Ukraine
Sergiy KOSTUKIEVICH, Mińsk, Bielarus
Stepan KOVALYSHYN, Lviv, Ukraine
Volodymyr KRAVCHUK, Kiev, Ukraine
Kazimierz LEJDA, Rzeszów, Poland
Andrzej MARCZUK, Lublin, Poland

Ryszard MICHĄLSKI, Olsztyn, Poland
Oleksandr MOROZOV, Simferopol, Krym
Leszek MOŚCICKI, Lublin, Poland
Andrzej MRUK, Kraków, Poland
Witold Niemiec, Rzeszów, Poland
Paweł NOSKO, Lugansk, Ukraine
Sergiy PASTUSHENKO, Mykolayiv, Ukraine
Simion POPESCU, Brasov, Romania
Natalia CHARNECKAYA, Lugansk, Ukraine
Povilas A. SIRVYDAS, Kaunas, Lithuania
Jerzy SOBCZAK, Kraków, Poland
Stanisław SOSNOWSKI, Rzeszów, Poland
Ludvikas SPOKAS, Kaunas, Lithuania
Georgij TAJANOWSKIJ, Mińsk, Bielarus
Wojciech TANAŚ, Lublin, Poland
Andrey TEVYASHEV, Kharkiv, Ukraine
Małgorzata TROJANOWSKA, Kraków, Poland
Ramazan Ch. YUSUPOV, Chelyabińsk, Russia
Danis VIESTURS, Ulbrok, Latvia

ISSN 2084-5715

All the scientific articles received positive evaluations by independent reviewers

Linguistic consultant: Kharchuk Viktoria
Typeset: Maksymyuk Nataliya, Adam Niezbecki
Cover design: Hanna Krasowska-Kołodziej

Editorial

- © Copyright by Polish Academy of Sciences 2014
- © Copyright by University of Engineering and Economics in Rzeszów 2014
- © Copyright by Lviv Polytechnic National University 2014
- © Copyright by University of Life Sciences in Lublin 2014

Editorial Office Address

Commission of Motorization and Energetics in Agriculture
Wielkopolska Str. 62, 20-725 Lublin, Poland
e-mail: eugeniusz.krasowski@up.lublin.pl

Edition 200+16 vol.