

FIBRES & TEXTILES

in Eastern Europe

published by

*Instytut Biopolimerów i Włókien Chemicznych
Institute of Biopolymers and Chemical Fibres
(IBWCh), Łódź, Poland*

*In publishing participates Kaunas University
of Technology (KTU), Kaunas, Lithuania*

Editorial Office

*ul. Skłodowskiej-Curie 19/27, 90-570 Łódź, Poland
tel. (48-42) 638-03-00, fax (48-42) 637-65-01
e-mail: infor@ibwch.lodz.pl http://www.fibtex.lodz.pl*

Editorial Department

Editor-in-Chief

Bogdan Mac

Vice Editor-in-Chief

Marta Cyrczak

Assistant Editors

Emilia Jaszczurska, Anna Wahl

Text Editor

Geoffrey Large

Typesetting

Andrzej Bodek

Printed at

Media-Press

Editorial Committee

Chairman:

Dariusz Wawro (IBWCh)

Members:

Danuta Ciechańska (IBWCh)

Izabela Ciesielska-Wróbel (GEMTEX)

Włodzimierz Cygan (TUL)

Robert Drobin (UB-B)

Ryszard Korycki (TUL)

Małgorzata Michniewicz (IBWCh)

Rimvydas Milašius (KTU)

Sigitas Stanys (KTU)

Zbigniew Stempień (TUL)

Krystyna Twarowska-Schmidt (IBWCh)

Alojzy Urbanowski (IBWCh)

Scientific Board

Chairman:

Prof. Andrzej Ziabicki

Polish Academy of Sciences, Warsaw, Poland

Members:

Prof. Valery Bashmetau

Vitebsk State Technological University, Belarus

Prof. Andrzej Błędzki

West Pomeranian University of Technology Szczecin, Poland

Prof. Chokri Cherif

Technical University of Dresden, Germany

Prof. Hans-Peter Fink

Potsdam-Golm, Germany

Prof. Tadeusz Jackowski

Łódź University of Technology, Poland

Prof. Vladan Koncar

GEMTEX laboratory, ENSAIT, Roubaix, France

Prof. Ryszard Kozłowski

The Institute for Engineering of Polymer Materials and Dyes;

FAO Escorena Network, Toruń, Poland

Prof. Izabella Krucińska

Łódź University of Technology, Poland

Prof. Anton Marcinčin

Slovak University of Technology, Bratislava, Slovak Republic

Prof. Józef Masajtis

Łódź University of Technology, Poland

Prof. Vytautas Milašius

Kaunas University of Technology, Lithuania

Prof. Jiří Militký

Technical University of Liberec, Czech Republic

Prof. Heinrich Planck

Denkendorf, Germany

Prof. Zoran Stjepanović

University of Maribor, Slovenia

Prof. Janusz Szosland

Łódź University of Technology, Poland

Prof. Lieva Van Langenhove

Gent University, Belgium



FIBRES & TEXTILES
in Eastern Europe
is decorated
with the
Golden Order
of the Polish Textile
Association



Volume 22, No. 5
(107)

September / October
2014

ISSN 1230-3666

September / October 2014
Volume 22, No. 5 (107)
IF 0.541 (2013)

Fibres & Textiles in Eastern Europe is inserted on the 'ISI Master Journal List' of the Institute for Scientific Information, Philadelphia, USA (for the year 2013 has an **Impact Factor of 0.541**). In Index Copernicus Journal Master List in 2012 FIBRES & TEXTILES in Eastern Europe ISSN 1230-3666 has received **ICV = 12.47**. Fibres & Textiles in Eastern Europe is indexed in Research Alert, SCI Expanded (Sci Search and Web of Science), the Materials Science Citation Index, Current Contents/Engineering, Computing & Technology; as well as by the Textile Institute, Manchester, in the Information Service; and in Rapra Technology Ltd.; Elsevier Geo Abstracts; Chemical Abstracts Service; and by Referativny Zhurnal, among others.

The content of 'Fibres & Textiles in Eastern Europe' is available by free open access on the website <http://www.fibtex.lodz.pl>, starting from issue No 3/2002.

No part of this publication may be reproduced without the prior written permission of the publisher: Instytut Biopolimerów i Włókien Chemicznych - Institute of Biopolymers and Chemical Fibres.

No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of application of any methods, products, instructions or ideas contained in the material herein. Although all advertising material is expected to conform to ethical standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product.

On the cover a fragment of Jolanta Owidzka's structural tapestry 'Prayer book'

This issue is financially supported by the Ministry of Science and Higher Education.