

INTERNATIONAL SCIENTIFIC CONGRESS
MACHINES. TECHNOLOGIES. MATERIALS

13-16.09.2017, VARNA, BULGARIA

PROCEEDINGS

YEAR I, ISSUE 7 (7), VARNA, BULGARIA 2017

VOLUME VII “MATERIALS”
”

ISSN 2535-0021 (PRINT)
ISSN 2535-003X (ONLINE)

PUBLISHER:

**SCIENTIFIC TECHNICAL UNION OF MECHANICAL
ENGINEERING
INDUSTRY-4.0**

108, Rakovski Str., 1000 Sofia, Bulgaria
tel. (+359 2) 987 72 90,
tel./fax (+359 2) 986 22 40,
office@mtmcongress.com
www.mtmcongress.com

INTERNATIONAL EDITORIAL BOARD

Chairman: Prof. DHC Georgi Popov

Members:

Acad. Ivan Vedyakov	RU
Acad. Yuriy Kuznetsov	UA
Prof. Aleksander Mihaylov	UA
Prof. Anatoliy Kostin	RU
Prof. Adel Mahmud	IQ
Prof. Ahmet Ertas	TR
Prof. Andrzej Golabczak	PL
Prof. Boncho Bonev	BG
Prof. Gennady Bagluk	UA
Prof. Detlef Redlich	DE
Prof. Dipten Misra	IN
Prof. Dmitry Kaputkin	RU
Prof. Eugene Eremin	RU
Prof. Ernest Nazarian	AM
Prof. Juan Alberto Montano	MX
Prof. Esam Husein	KW
Prof. Ivo Malakov	BG
Prof. Krasimir Marchev	USA
Prof. Leon Kukielka	PL
Prof. Lyudmila Ryabicheva	UA
Prof. Milan Vukcevic	ME

Vice Chair: Prof. Dr. Eng. Tsanka Dikova

Prof. Mladen Velez	BG
Prof. Mohamed El Mansori	FR
Prof. Movlazade Vagif Zahid	AZ
Prof. Nikolay Dyulgerov	BG
Prof. Oana Dodun	RO
Prof. Olga Krivtsova	KZ
Prof. Peter Kostal	SK
Prof. Raul Turmanidze	GE
Prof. Renato Goulart	BR
Prof. Roumen Petrov	BE
Prof. Sasho Guergov	BG
Prof. Seiji Katayama	JP
Prof. Sergej Dobatkin	RU
Prof. Sergej Nikulin	RU
Prof. Stefan Dimov	UK
Prof. Svetan Ratchev	UK
Prof. Svetlana Gubenko	UA
Prof. Tale Geramitchioski	MK
Prof. Vadim Kovtun	BY
Prof. Viktor Vaganov	RU
Prof. William Singhose	USA
Prof. Yasar Pancar	TR