INTERNATIONAL JOURNAL OF TURBO AND JET ENGINES

EDITOR-IN-CHIEF

Valery Sherbaum, Haifa

EDITORIAL BOARD MEMBERS

Ernesto Benini, Padova
Saeed Farokhi, Lawrence, KS
Rama S. R. Gorla, Cleveland, OH
Changduk Kong, Kwangju
Yeshayahou Levy, Haifa
Debi Prasad Mishra, Kanpur
R. K. Mishra, Bangalore
Rishi S. Raj, New York, NY
Arvind Rao, Delft
Matsuo Shigeru, Saga
Yuan Wei, Chengdu
Shun-Peng Zhu, Shanghai

DE GRUYTER

ABSTRACTED/INDEXED IN Astrophysics Data System (ADS) · Baidu Scholar · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC: cnpLINKer · Dimensions · EBSCO (relevant databases) · EBSCO Discovery Service · Ei Compendex · Engineering Village · Genamics JournalSeek · Google Scholar · Inspec · Japan Science and Technology Agency (JST) · J-Gate · Journal Citation Reports/Science Edition · JournalGuide · JournalTOCs · KESLI-NDSL (Korean National Discovery for Science Leaders) · MyScienceWork · Naver Academic · Naviga (Softweco) · Primo Central (ExLibris) · ProQuest (relevant databases) · Publons · QOAM (Quality Open Access Market) · ReadCube · Reaxys · Scilit · SCImago (SJR) · SCOPUS · Semantic Scholar · Sherpa/RoMEO · Summon (ProQuest) · TDNet · TEMA Technik und Management · Ulrich's Periodicals Directory/ ulrichsweb · WanFang Data · Web of Science: Science Citation Index Expanded · WorldCat (OCLC) · X-MOL · Yewno Discover

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions or liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/tjj

ISSN 0334-0082 · e-ISSN 2191-0332

RESPONSIBLE EDITOR Valery Sherbaum, Haifa, e-mail: valerys@technion.ac.il

PUBLISHER Walter de Gruyter GmbH, Berlin/Boston, Genthiner Straße 13, 10785 Berlin, Germany

JOURNAL COORDINATOR Torsten Krüger, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05 – 176, e-mail: torsten.krueger@degruyter.com

ADVERTISEMENTS e-mail: anzeigen@degruyter.com

© 2023 Walter de Gruyter GmbH, Berlin/Boston, Germany

TYPESETTING TNQ Technologies, Chennai, India

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

Cover Illustration: Hemera/Thinkstock



Contents

turbine — 305

Arnab Bose, Prabhakar Sathujoda and Giacomo Canale Natural frequency analysis of a functionally graded rotor-bearing system with a slant crack subjected to thermal gradients —— 243

Saroj Kumar Muduli, R. K. Mishra and Purna Chandra Mishra Evaluation of exit pattern factors of an annular aero gas turbine combustor at altitude off-design conditions —— 257

Dong Zhang, Feng Cheng, Shuo Tang, Chun-lin Gong and Bin Xu Research on quasi-one-dimensional modeling and performance analysis of RBCC propulsion system —— 265

Hardial Singh and Bharat Bhushan Arora

Performance characteristics of flow in annular diffuser using CFD —— 281

Zhihua Xi, Yuan Gao, Minglei Liu and Haibo Zhang Control-oriented quasi-one dimensional modeling method for scramjet —— 293

Xingyun Jia, Wenhao Wang, Hongrui Shi, Le Zhang and Lidong He **Effect of rotor-stator rim cavity flow on the** Shuyi Zhang and Bo Yang

An improved aerodynamic performance optimization method of 3-D low Reynolds number rotor blade —— 317

Xingyun Jia, Huaiyu Dong, Yuzhou Ming, Yue Wu and Lidong He Hot gas ingestion in chute rim seal clearance of gas turbine —— 329

Juan Fang, Qiangang Zheng, Haibo Zhang and Chongwen Jin An improved compact propulsion system model based on batch normalize deep neural network —— 341

Inna Levitsky

Study of the vortex chamber and its application for the development of novel measurement and control devices —— 351

Gui-Yang Xu, Bao-Xing Li, Hong-Yan Li, Yan-Fang Zhu, Yi-Wen Guan and Jian-Xiong Zhang

Effect of equivalence ratio on the detonation noise characteristics of pulse detonation engine —— 363

Yue Zhou, Jie Wu, Liang Li, Qisheng Guo, Xijuan Zhu and Jing Ma Simulation and analysis of hot plume infrared signature based on SNB model —— 371