

# Journal of Applied Fluid Mechanics

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## Guest Editors

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### **Aim and scope**

The aim of *JAFM* is to advance the development of fluid mechanics research in the scientific community and to provide an authoritative medium for publication of original articles covering theoretical, computational and experimental research embodying scientific aspects of the mechanics of fluids and their applications. It is to be an online journal free of charge for both authors and researchers.

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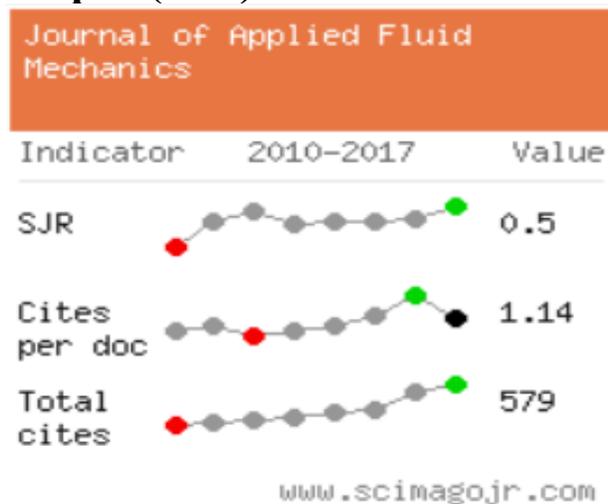
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## **FOREWORD**

This special issue of Journal of Applied Fluid Mechanics contains a selection of papers presented at the 18<sup>th</sup> Meeting on Heat Transfer (JITH 2017) which was held in Monastir from October 25 to 27, 2017. This conference, organized every two years, brought together more than 100 delegates. It included six invited papers, and 130 fully peer reviewed papers. The purpose of this meeting was to bring together researchers in a forum to exchange innovative ideas, methods and results related to the general themes of fluid mechanics, heat transfer, and mass transfer, with applications to energy systems, solar energy, renewable energy, energy storage and conversion, combustion, materials processing, to name but a few. Fourteen papers were selected for publication in this special issue by referees according to the publication standards of JAFM.

The Editors would like to thank all the authors for their understanding and patience during the refereeing process. We would also like to express sincere appreciation to the Scientific Committee of JITH and the staff of JAFM, as well as those involved in the submission, review, selection, and English mentoring processes leading to final publication. In particular, a special thank you is extended to Professor Fethi ALOUI, Associate Editor of JAFM, for his initial support to the project of this special issue, and for his help during the whole editing process.

This special issue is dedicated to our friend and colleague Sassi Ben Nasrallah, who recently left us.

*The Guest Editors*  
Bernard Porterie and Lounes Tadrist  
*Université d'Aix-marseille*

### **Special Issue Dedicated to the Memory of Professor Sassi Ben Nasrallah**



The late Professor Sassi Ben Nasrallah (1955-2017)

This special issue is dedicated to the memory of our dear friend and outstanding scientist, Professor Sassi Ben Nasrallah. He passed away suddenly on June 27, 2017, at the age 61. Professor Sassi Ben Nasrallah was a well-known scientist in the fields of Physics and Energy Engineering. This special issue includes contributions from his friends and colleagues.

Professor Sassi Ben Nasrallah was born in Amiret Touazra in 1955. He began studying at Ferchiou Primary School in his hometown and his secondary studies at Sousse Boy's High School.

As an intern he devoted his free time to the practice of combat sports, which contributed to forming his personality.

A product of the famous Class 7 Math 1 (a promotion which formed many well-known names), he obtained his baccalaureate in 1975 and pursued his higher education studies at the Faculty of Sciences of Tunis where he obtained, in 1979, a master's degree in Physics.

He carried out his 3rd cycle studies in Poitiers in France where he obtained in 1980 his Master of Advanced Studies (specialty Fluid Mechanics: Flows and Transfers) followed in 1983 by a 3rd Cycle Doctorate entitled « Contribution to the Study of Evaporation in Natural Convection » and his PhD in September 1983.

Professor Ben Nasrallah began his teaching career in November 1986 at the « École Nationale d'Ingénieurs de Sfax » (ENIS) as an Assistant. After obtaining a position in October 1989 at the Engineering School of Monastir (ENIM), a few years later he became Professor where he was immensely involved in the research activities and the life of the department where he worked with complete dedication and self-sacrifice as a teacher-researcher until his decease.

Animated by his sense of duty and his passion for scientific research, Professor Sassi Ben Nasrallah founded in 1999, the « Laboratoire d'Études des Systèmes Thermiques et Energétiques », one of the most internationally renowned laboratories in Tunisia. He coordinated several research projects (e.g. CNRS-DGRST, CMCU, PRF, or VRR) and organized and co-organized several national and international scientific meetings (e.g. CFT'04, CFT'07, CFH2008, CICME10, ICCM3E or ICTCIP09). He is the author of more than 300 scientific articles in indexed and impacted journals. Professor Ben Nasrallah supervised more than 50 graduate students and postdoctoral associates, and he has been a great mentor and friend to many others. In 2003, he won the Presidential Prize for Scientific Research and occupied in 2017 the first rank for a Tunisian researcher in the field of Physics and Energetic Engineering.

From 1999 to 2005, Professor Sassi Ben Nasrallah directed l'ENIM then, from 2005 to 2010, « le Centre de Recherche et de Technologie de l'Énergie » in Borj Cédria. His international influence opened up many coveted horizons. On several occasions he was a visiting Professor in various French Institutions such as the Ecole Centrale de Paris, the IMFT in Toulouse, the University of Valenciennes or the École des Mines in Nantes.

The Professor Sassi Ben Nasrallah also founded and presided the Tunisian Association of Energy. He was a member of several national commissions: Comité National d'Évaluation des Activités de Recherche Scientifique (CNEAR), a national commission composed of 6 experts, to report on the causes of the power cut of 30 June 2002, several national teacher-researcher recruitment commissions...

The scientific, academic and pedagogical contribution of Professor Sassi Ban Nasrallah to the Tunisian University was undoubtedly one of the most significant. The different generations of students who were fortunate enough to have been trained under his direction can testify to his teaching and researching values, and to the man he was. Many of them currently hold teacher-researcher positions in Physics and Energy Engineering in Tunisia and abroad. They perpetuate the

spirit of commitment, dedication and self-sacrifice in the interest of the academic institution and country that this great man left them as a legacy: "*A teacher affects eternity; he can never tell where his influence stops*" (Henry Adams).

Our sincere thanks go to all distinguished colleagues who contributed to the special issue. We are particularly grateful to the members of the JITH Scientific Committee, who share their valuable time and expertise to evaluate all manuscripts submitted to this issue, and to Ms. Joyce Bartolini for giving the document a final shape within a short period.