Editorial

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Biographical notes: Mohammad Behroozi graduated as Doctor of Philosophy in Mechanical Engineering from the University of Birmingham in UK, which worked on the Finite Element Modelling of Aircraft Tyres. He then hired as a Postdoc Research Associate at the same university to conduct research on Low Rolling Resistance Tyres. He is currently working as Senior Vehicle Dynamicist at General Motors while he is now an honorary Research Fellow in the Vehicle Dynamics Laboratory (VDL) at the School of Mechanical Engineering, The University of Birmingham. His background and expertise is on the numerical methods, tyre modelling, vehicle dynamics, advance control, soft computing, data analysis and signal processing. He is also reviewer and editor of multiple specialty journals and conferences such as IMechE, Inderscience and SAE and receiver a number of national and international awards and prizes in his academic and professional life.

Emmanuel O. Bolarinwa is a Lecturer in Automotive Engineering in the School of Mechanical, Aerospace and Automotive Engineering and the Centre for Mobility and Transport at Coventry University, UK. He holds a PhD in Mechanical Engineering from the University of Birmingham, UK. His previous employment includes Federal Highway Administration (FHWA), US DOT as a Research Associate and Airbus, UK as a Technical Consultant. His expertise is in the areas of vehicle dynamics, vehicle durability and reliability, tyre mechanics, tyre modelling, tyre testing and finite element analysis.

The tyre is the element in a vehicle that imposes an inconceivable impact on vehicle ride and handling (R&H) performance as well as its noise and vibration (N&V). In addition, tyres play an important role on the fuel economy and safety of vehicles.

There are constant and consistent efforts within both industry and academia to improve the testing and modelling techniques for a finer resolution and lower uncertainty in prediction of tyre performance on vehicles. On testing side, the experimental

procedure, measurement technology or data processing are at the centre of development consideration in order to uncouple the overlapping physics, promote the measuring tools or propose a better extraction of information from the collected data. On the other hand, the modelling techniques are developed as influential predictive tools to measure the performance, quality, endurance etc. so that the need for more testing is voided. The tyre modelling concept also introduces a virtual prototyping and simulation environment which benefits both OEM and tyre manufacturers to reduce development time, costs and manpower.

International Journal of Vehicle Performance is a perfect host to this special issue, of which focus is on the testing and modelling techniques in different performance areas. The papers of this issue offer a number of tools and methodologies for being utilised in prediction and verification of tyre performance for design and engineering as follow:

- a multi-laser sensor system to measure rolling deformation for truck tyres

- prediction of influence of operating conditions and tyre design parameters on tyre cornering characteristics

- finite element modelling of a pneumatic tyre interacting with rigid road and deformable terrain

- tyre cornering stiffness finite element analysis for tyre design parameters determination

- parameter identification of in-plane flexible ring tyre model based on static load–deflection data: some insights.

We believe the content of this special issue proposes a valuable reference for the readers in vehicle dynamic, tyre design and performance prediction. Therefore, we would like to express our gratitude to the authors for the wonderful contribution to this special issues and sincere appreciation to all reviewers for tremendous effort throughout the review process. In addition, we would like to thank editors for their time spending on handling the paper review in the most professional manner. Special thanks goes to Dr. Xiaobo Yang for his constant support and devotion to make this happen.