Preface

With this special issue of the *Journal of Engineering Mathematics* we celebrate the centenary of two of the fundamental contributions [1, 2] of L.N.G. Filon (1975–1937) to the development of the classical theory of elasticity. These papers contain mathematical statements of the boundary-value problems in the linear theory of elasticity that can be finally reduced to classical biharmonic problems for a single scalar function of two coordinates with prescribed values of the function and its normal derivative at the boundary. We believe this anniversary offers us an opportunity to examine developments and applications of biharmonic problems in mechanics in the twentieth century. The biharmonic equation, which is a central aspect of Filon's works, has provided engineers and scientists with a wealth of avenues for the investigation of a variety of problems in applied mechanics and engineering mathematics dealing with the theory of bending of plates, two-dimensional and axisymmetric problems in the linear theory of elasticity and low-Reynolds-number hydrodynamics. Through the celebration of Filon's classical works we are also provided with an opportunity for examining the role of the biharmonic equation in the formulation and solution of problems in mechanics and applied mathematics.

It is hoped that this Special Issue will be a fitting tribute to Filon's works written in the beginning of twentieth century and through these works provide a new impetus for the twenty-first century. Should the present issue achieve this objective, it will have accomplished its primary goal.

As Guest Editors for this Special Issue, we would like to record our thanks to all the authors for their willingness to contribute to the issue and for their patience in attending to the many revisions to their papers highlighted during the review process. We are grateful to Professor H.K. Kuiken (the Editor-in-Chief of the *Journal of Engineering Mathematics*) for critically reading all the papers in this issue and his unfailing kindness in coming to our aid with valuable suggestions and advice.

Reference

1. L.N.G. Filon, On the elastic equilibrium of circular cylinders under certain practical systems of load. *Phil. Trans. R. Soc. London* A198 (1902) 146–233.
2. L.N.G. Filon, On an approximate solution for the bending of a beam of rectangular cross-section under any system of load, with special references to points of concentrated or discontinuous loading. *Phil. Trans. R. Soc. London* A201 (1903) 63–155.

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