Prof. Dorel BANABIC – Short CV

Professor at the Technical University of Cluj-Napoca (UTCN), Romania
Director of the Research Center in Sheet Metal Forming (CERTETA), UTCN
Director of the Graduate School in Manufacturing, UTCN, Romania
Past President of the European Scientific Association for Material Forming (ESAFORM)
Fellow of CIRP (International Academy for Production Engineering)
Fellow of the Academy of Technical Sciences of Romanian
Fellow of the Romanian Academy
President of the Technical History Division of the Romanian Academy
President of the Technical Sciences section of the Romanian Academy

Editor-in-Chief of the Proceedings of the Romanian Academy, Bucharest, Romania
Editor-in-Chief of the Romanian Journal of Technical Sciences - Applied Mechanics, Romania
Associate Editor of the International Journal of Material Forming, Springer Verlag
Member in the Editorial Board of the following international journals: International Journal of Computational Materials Science, Gliwice, Poland; Manufacturing Review, EDP Sciences, Paris; Journal of Forging and Stamping Production, Russia; Computed Method in Materials Science, Poland; Journal of Production Processes and Systems, Hungary; Memoirs of the Scientific Sections of the Romanian Academy.
Member in the Scientific Committees of the most representative conferences in Material Forming.

The major areas of interest are the anisotropic plastic behaviour of materials, formability of sheet metals and virtual fabrication. He developed a family of yield criteria for anisotropic metallic materials (BBC yield criteria) (BBC 2000, BBC 2005, BBC 2008). The BBC 2005 model has been implemented by the AUTOFORM software house in the commercial FE code AutoForm 4.1. The BBC 2008 model has been coupled with the ALAMEL crystal plasticity model developed at the Catholic University Leuven in a Hierarchical Multi-Scale (HMS) framework that allows taking into account evolution of the plastic anisotropy during sheet forming processes. In the field of formability the main contributions are: theoretical and experimental research on the influence of the pulsatory loading on the FLC; proposal of a new method to increase the formability in superplastic sheet metal forming processes using the pulsatory loading; improvement of the Marciniak-Kuczynski and Modified Maximum Force Criterion models to predict the FLC; developing of the FORM-CERT user friendly code to determine the FLC; proposal of a new procedure for the experimental determination of the FLCs based on the hydraulic bulging of a double specimen.