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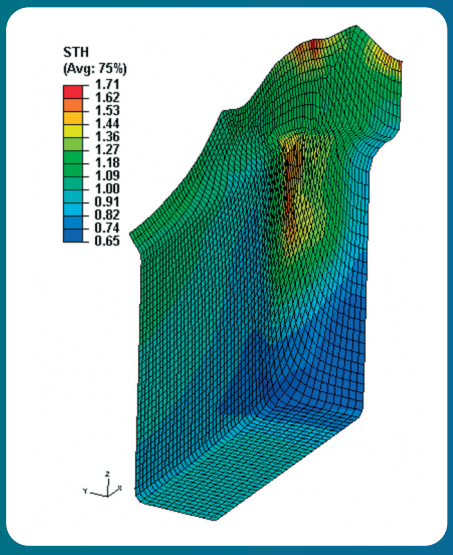

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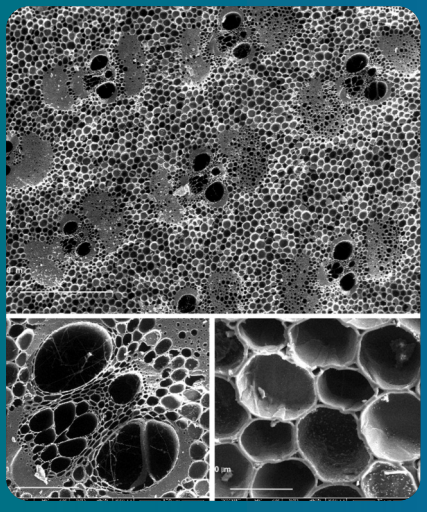
The paper entitled "Towards an optimised process planning of multistage deep drawing: An overview" presented by A.S. Wifi and T.F. Abdelmaguid on a **page 7** shows a concise literature review on the optimisation techniques used for the single stage and multistage deep drawing process, and to identify directions for future research. A perspective on a comprehensive optimised computer aided process planning is provided for multistage deep drawing processes. This is an integrated rule base/dynamic programming/finite element approach that minimises the total number of stages and heat treatment needed. Directions for future research towards integrative models for optimising the multistage deep drawing process that take into consideration economic as well as operational objectives are identified. There is a lack in the literature in providing a comprehensive approach for optimising the multistage deep drawing process. This paper provides a guide for researchers in the field of deep drawing and identifies some directions for future research that can be pursued. It also gives some insights to practitioners in that field on how integrated models can improve the economics and the quality of the process planning decisions for multistage deep drawing.



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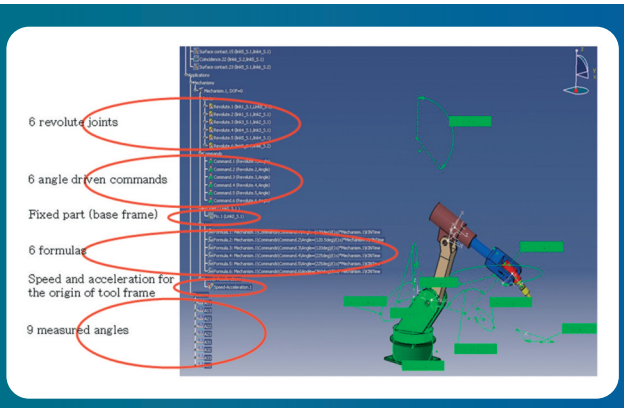
The paper from Materials area made by M. Krzesińska on "Preparation and properties of carbon/carbon and polymer/carbon porous monolithic composites" on a **page 45** describes the works on the preparation of novel monolithic carbon/carbon and polymer/carbon composites. These biodegradable bio-composites were fabricated using natural biological precursors for both composite components: carbonized plant stem for a support and chitosan or furfuryl alcohol for a filler. Composites based on monolithic porous supports prepared from expanded graphite were also produced and presented in the paper. The supports were prepared by carbonization of plants stems or by compression of expanded graphite. The next step was the infiltration with the polymers that were cross-linked on the supports. The composites were characterised using numerous experimental techniques: thermogravimetry, helium gas densitometry, mercury porosimetry and adsorption of N_2 gas, ultrasonic and electrical measurements, FTIR, EPR and observed with microscopes: optical, SEM and TEM. The carbon based composites were found to exhibit properties of the polymeric fillers, as well as electrical conductivity and high stiffness of monolithic carbon framework. The materials could be utilized as adsorbents/absorbents, catalysts supports, sensors, filters, etc.



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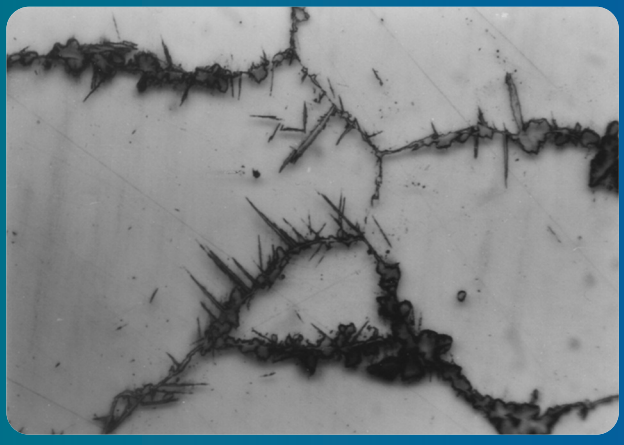
The Analysis and modelling section represented by J.W. Jeong, I.S. Kim, R.R. Chand and J.H. Lee on "A study on simulation model and kinematic model of welding robot" on a **page 66** presents a simulation model of six degree freedom for Faraman AM1 welding robot using CATIA V5 and compares with the computed kinematic model for robotic welding. The error verification of simulated model and kinematics of the robot is also being carried out. The developed simulated in Catia is mainly aimed to be used in GMA welding process. D-H (Denavit-Hartenberg) convection is used to determine the orthonormal coordinate frames at different joints of a robotic manipulator and determining four kinematic parameters. The results obtained from the six degree freedom for Faraman AM1 simulated model has a good agreement with computed kinematic models equations. The catia V5 a very powerful tool which could be used in the development of a simulation for robotic welding system. The angle error between simulated model and computed inverse kinmenatic equation obtained too very small. The six degree freedom for Faraman AM1 welding robot is model to be analysed and compared with forward and inverse kinmatic.



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The research paper entitled "Effect of cutting on surface hardness and residual stresses or 12Mn austenitic steel" by M. Cebron, F. Kosel and J. Kopac on a **page 80** informs that the austenitic steels are known for their high impact toughness and resistance against abrasive wear, yet their machining is difficult and limits their application. Since surface conditions resulting from production strongly affect the performance of finished products, any information linking the machining process to the mechanical properties of the surface is useful not only in production but also in the design phase of the product. It was confirmed that the analysed material hardens substantially during machining and that the wear of cutting tools can be related both to this phenomenon and to the material structure after heat treatment. Furthermore, it was found out that inadequate machining conditions can lead to tensile stresses that alone can initiate cracks in the surface layer even before the material is additionally loaded. The main reasons why highly hardening materials require an accurate assessment of the cutting conditions are outlined. It is shown that an apt choice of cutting conditions has a favorable influence both on the condition of the surface after cutting and on the tool life. This paper presents an account of some of the difficulties that are associated with machining austenitic and other highly hardening materials. Since the detailed composition of the material and all the important machining parameters are listed, the results presented can also be useful for checking or calibrating numerical models of the cutting process.

Manufacturing and processing

Cleaner production and biotechnology

Industrial management and organisation