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**A Design Support System for Plastic Injection Molds**

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The design and manufacture of injection molded polymeric parts with desired properties is a costly process dominated by empiricism, including more or less often repeating modification of the tool. It is generally known that the final molded part quality is mainly dependent on the part design, mold design, the selected thermoplastic material, and the process settings. Research on an integrated approach to the injection mold design from part design to dimensionally accurate molded parts with high quality resulted in the development of a computer-based injection mold design support system. This system represents the knowledge database of highly qualified experts and scientists using different simulation programs as aids and a 3 dimensional measurement system for the produced moldings. The overall structure of the design support system is based on PLONE, which is a content management tool, and linked together with analysis and calculation programs and an object oriented database to have a multi-level decision tool. During the design process the system diagnoses the part and mold design by checking several features and directs the designer to reach the optimum design based on the accumulated human experts' knowledge and theoretical models of the process. Additionally the support tool helps the machine operator in setting up, optimizing, and controlling the injection molding parameters. All steps of the design process and all calculation results are documented by the system during work. Saving part and mold design data, process settings and data from quality assurance on the system ensure an increase in experts' knowledge that will automatically be provided for future injection mold development. In this paper an overview of the program as well as application examples are presented.