Advances in Machine Tool Design and Research 98. 8. Tokyo 13-16.10.98 Advances in Machine Tool Design and Research 1998 focused on the processes, methodologies, and technologies in the design of machine tools. The book contains the proceedings of the 10th International MTDR Conference held at the University of Manchester in September 1998. The conference addressed a variety of papers and presentations on the design of machine tools and the implementation of advanced design features in large machine tools and development of automated controlled machine tools. The book reviews the latest developments in machine tool design, including structural concepts, machine kinematics, safety, and control systems. It covers a wide range of topics, from basic principles to advanced design techniques. The book is intended for researchers, practitioners, and students in the field of machine tool design and manufacturing.

Microfabrication and Precision Engineering

P. Prisci 2017-03-11 Microfabrication and precision engineering is an increasingly important area relating to metals, polymers, ceramics, composites, biomaterials and complex materials. Microfabrication techniques such as deep reactive ion etching, UV lithography, and wet etching require higher resolution and control over the manufacturing process. A number of techniques have been developed to reduce surface roughness and enhance the form accuracy of machine tools, including surface micromachining, microgrinding, and microforming. Microfabrication and precision engineering are valuable for the manufacturing of mechanical, optical and opto-electronic components with a surface roughness of a few nanometers and form accuracy in the sub-micrometric range. In the context of subtractive manufacturing, ultra-precision diamond turning is based on the pillars of materials science, particular emphasis and a novel viewpoint on materials characterization and its influences on ultra-precision machining. Ultra-precision single point diamond turning is a key technology in the manufacture of mechanical, optical and opto-electronic components with a surface roughness of a few nanometers and form accuracy in the sub-micrometric range. The book also takes a look at the trends in manufacturing systems concepts and technical criteria to be used when purchasing machine tools. The selection is a dependable reference for readers who are interested in machine tool design and development as well as in manufacturing and precision engineering.