

Chapter 1

Introduction to Abrasive Based Machining and Finishing



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Abstract To manufacture intricate shaped engineering components with high degree of surface finish and tolerances, it is always needed reliable machining and finishing processes. Since last two decades, various machining and finishing processes have been developed for manufacturing or processing wide variety of end products for their successful engineering as well as biomedical applications. The present chapter deals with discussion of fundamental aspects of abrasive based machining and finishing processes. The chapter mainly divided into mainly four sections. These are conventional abrasive processes, advanced abrasive machining processes, hybrid advanced abrasive machining processes and advanced finishing processes. Each process is presented with material removal mechanism, overview of machine setup, process parameters and applications.

Keywords Abrasive particles · Grinding · Surface finish · Machining rate · Advanced machining · Finishing processes · Magnetic field

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