# 曲齒聯軸器之電腦輔助設計與實體建模

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## 摘要

This study intends to develop a specific software module for the design and geometric modeling of curvic couplings. Through an automatic programming interface (API) of SolidWorksTM, the specified functions of computer aided design (CAD) and solid modeling are developed. According to the standardization of curvic couplings and its geometric relation to the mating grinding wheels, using a coordinate transformation approach, firstly three kinds tooth profile equations of toothed disks of curvic couplings, which are straight standard tooth and concave and convex modified tooth profiles, are used. The 3D solid modeling process of the curvic couplings is achieved by calculating the coordinates of tooth surfaces using the derived tooth profile equations via a Visual C++ code. The solid modeling of formate grinding wheels and toothed disks are thus built using SW. The dialog boxes for design data input in SolidWorks are added to fulfill parametric design work. Basing on that, a specified module of CAD and solid modeling for curvic couplings and grind wheel can be resulted.

關鍵字：Curvic coupling, Solid modeling, Grinding wheel, Parametric modeling, Automatic programming interface