

2017;

2020

Improving productivity and product quality in precision machining Prof. Shrikrishna N. Joshi, Mechanical Engg., IIT Guwahati 1.991 mm Thin-wall machining of aerospace alloys Milling parameters Target wall thickness SERB-DST Funded Project (completed) fz: 0.06 mm/z 1.25 mm Non optimum INR 35.34 Lakhs (2013-2017) as PI d: 12 mm parameters ad: 24 mm f_{z} = feed (mm per tooth) Thick top - thin bottom r_d: 0.625 mm d_{i} = tool diameter (mm) a_{d} = axial depth of cut (mm) $r_{\rm d}$ = radial depth of cut (mm) Thickness deviation at top portion was improved from 59.2% to 2.64 to 3.84% with optimum levels (a) **Precise** machining of a curvilinear ultra-thin-wall part 750 µm 1.283 mm .298 mm Milling parameters Milling parameters -----Optimum fz: 0.02 mm/z fz: 0.03 mm/z parameters Important deliverables to make the d;: 8 mm d:: 8 mm aircrafts and automobiles lighter ad: 8 mm ad: 8 mm Uniform crossection r_d: 0.3125 mm r_d: 0.5 mm On 3-axis CNC milling machine at IMechE Part B medium cutting speed in real-life Measurement shop floor conditions (c)

Sponsored project 01 completed

1

Ph.D. students 01 completed (thin-wall)

M. Tech. projects 03 (thin-wall)

Intl. Journal papers 09 (thin-wall)

Book chapters 02 (thin wall)