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Nota di contenuto	Introduction -- Fundamental design and material of knee prosthesis.- Finite element analysis fea on knee prosthesis -- Development of high flexion tkr -- Finite element analysis fea and experimental -- Conclusion and recommendation.
Sommario/riassunto	This book highlights the design, modifications, and analysis of knee prosthesis or total knee replacement (TKR) components. CT scan images of a knee joint are extracted by 3D Gens. The model of knee joint is then developed to create 3D model structures using CAD software. The design modifications' process focuses on the tibial insert component to increase the range of motion. All the design modifications were analyzed using FEA software. The book describes additive manufacturing (AM) in order to fabricate the TKR components using 3D printing techniques such as fused deposition modeling (FDM) and selective laser sintering (SLS). It uses FDM to print the tibial insert with polyamide material. Meanwhile, SLS prints the femoral and tibial components with titanium alloy material. TKR jigs were fabricated by

advanced manufacturing process using stainless steel, and compression testing evaluated the deformation when the force is applied vertically to the femoral component. Compression testing results are not discussed as they were used to validate the results of FEA only. The outcomes of FEA were compared with the compression results in terms of deformation.