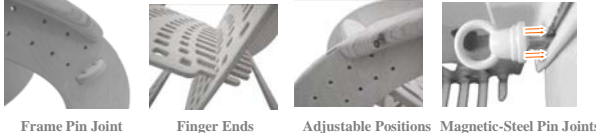


Emerging Furniture Design Challenges and Product Development - Plus-size Furniture and Adjustable Furniture

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Adjustable RTA Rocking Chair



Cooperators:

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Goals:

To develop design with criteria:

- Adjustable wooden furniture ready for assembly,
- Easy mass-customization for plus-sized population,
- Furniture with reduced environmental impact,
- Furniture lifecycle and end-of-life disposal.

Recent Publications:

Zhou, H., 2006. CNC Adjustable Rocking Chair, International Woodworking Fair 2006, Student Furniture Design Competition "Design Emphasis" Atlanta, GA, p. 15.

Statement of Problem:

Adjustable furniture is a high-end product which provides customers more options to increase the comfort and assure better ergonomic fit. However, most of the furniture on the market is of one size and not suitable for the increasing plus-size population. Traditionally, adjustable chairs are made from complex mechanical devices. This creates higher costs for customers. Product development with emphasis on strength, sustainability, RTA (ready to assemble) concept, and design for manufacturing, is desirable for the contemporary consumer. The proposed design system also has a more positive impact on the environment.

Current Activities:

Winning 1st place in "Design Emphasis 2006", the student furniture design competition at the International Woodworking Fair in Atlanta, GA, August 23-26, 2006. Winning product - "CNC Adjustable Rocking Chair".

A finger jointing furniture design concept based on CNC manufacturing had been created. Issues below are addressed:

- Refine the adjustable rocking chair
- Make it ready for mass-customization
- Improve joint design construction and improve manufacturing process
- Dematerialize
- Apply strength design concepts
- Develop design methodology and validate the concept on finger joint design products line.