What is customized footwear?

In general footwear is made based on the standard footwear sizing system available based on the country. The system was derived after the foot measurement survey of small population representing the whole population. But some of the foot sizes may not fit into the standard footwear sizes due to various reasons like wider foot, flat foot, diabetic foot, obese foot, deformed foot, etc. In such cases, footwear can be customized to suit their foot dimensions/measurements. Footwear designed and developed for a particular individual based on their feet dimensions and biomechanics is called as customized footwear.

Who is in need of customized footwear?

Individuals who are facing problem with conventional footwear in terms of fitting and comfort can go for customized footwear. People having foot ailments like foot pain, heel pain, leg length discrepancy and foot deformities like bunion, hallux valgus, hallux varus, supinated feet, flat feet, claw toes, hammer toes, etc., can use customized footwear for therapeutic purpose to treat and prevent foot complications and also to improve their walking pattern. Foot complication like diabetic neuropathy demands customized footwear to prevent foot ulcers by uniform distribution of plantar pressure. People who do not fit into the conventional shoe sizing system can also use custom made footwear for correct fitting and comfort.

How is customized footwear fabricated in CLRI?

People with foot deformities or other foot related problems and those who are referred by physicians for therapeutic footwear/corrective footwear can approach CSIR-CLRI Gait analysis laboratory. They will be physically assessed by a trained physiotherapist. Based on the physical assessment, biomechanical/Gait analysis will be done for them in CSIR-CLRI Gait analysis laboratory. Based on the analysis report and medical history of the person, the customized footwear will be recommended. The foot anthropometric data will be taken to achieve the best fit and the recommended footwear will be developed at the Shoe and Product Design Centre of CLRI in stipulated time.

Functions of customized footwear:

- Redistribution of plantar pressure
Customized Footwear Fabrication at CLRI

- Provides excellent comfort by
  - Accommodating the deformity
  - Giving cushion at painful areas of feet
  - Providing proper fit
- Improving the posture
- Improving the walking pattern

Protocol followed at CLRI – Gait Laboratory for fabricating customized footwear

Subjective evaluation

Physical evaluation

- Body composition analysis
- Plantar pressure analysis
- Treadmill analysis
- Measurement of foot

Measurement of foot pressure

Finished customized footwear