

<b>Project Title- 6</b>	<b>Cut-resistance technical fabrics using Spectra filament Yarns</b>
<b>Principal Investigator</b>	Dr.K.P.Chellamani
<b>Cost</b>	Rs.25.00 lakhs
<b>Date of commencement</b>	01.10.2009
<b>Duration</b>	24 Months
<b>Date of Completion</b>	30.09.2011
<b>Abstract</b>	<p>Sports wear fabrics need to provide a comfortable environment for the wearer and consequently need to be able to handle moisture vapour and sweat produced by the body. They need to help in controlling temperature and they need to feel good. Spectra is one of the world's strongest and lightest fiber. It has the highest strength-to-weight ratio of any fiber. Weight-for-Weight, spectra fiber is 10 times stronger than steel, yet it is softer to be used in clothing and other products designed to be worn for prolonged periods. With outstanding toughness and extraordinary visco-elastic properties, Spectra fiber can withstand high-load strain-rate velocities. Light enough to float, it also exhibits high resistance to chemicals, water, and ultra violet light. It has excellent vibration damping, flex fatigue, and internal fiber-friction characteristics, and Spectra fibre's low dielectric constant makes it virtually transparent to radar. Combining Spectra fibre with glass or silica in the core is expected to offer two to five times the cut resistance of the spun aramids without sacrificing comfort or dexterity. This makes Spectra an excellent choice for liner and sleeves.</p> <p>The present study is proposed to generate relevant information in this area.</p>
<b>Highlights</b>	<p>Design and development of cut resistant fabrics for fragment barrier, protective garments and in sports wear to explore for life line safety</p> <p>Incorporating 'Puncher Proof' characterised into the cut resistant fabrics to expand the application possibilities of those fabrics.</p> <p>Manufacture of woven and knitted constructions using core spinning technique to produce cut resistant, puncher proof fabrics.</p>
<b>Area of applicability</b>	Sport textiles
<b>Target beneficiaries</b>	Industrial workers and Athletes
<b>Status</b>	Ongoing