

Project Title-16	Development of a technology package for speciality polyester fibres
Principal Investigator	K.P. Chellamani
Cost	Rs.27.50 lakhs
Date of Commencement	July 2000
Duration	24 Months
Date of Completion	Sep 2002
Abstract	The report deals with a comprehensive study conducted at SITRA towards optimization of process parameters for spinning speciality polyester fibres like Hollow Polyester, Trilobal Polyester, Low Pill Polyester and Flame Retardant Polyester and to evaluate quality characteristics of yarns and fabrics made out of them. Image Processor was used to measure the cross – sectional diameter of hollow polyester. Thermal Insulation Values (TIV) were determined for hollow polyester, acrylic and wool fabrics. Vertical flammability as per BS 3119 and Limiting Oxygen Index as per IS 13501:1992 were determined for Flame Retardant Polyester Fabrics. Low stress mechanical and surface properties of fabrics made out of speciality polyester fibres were also assessed using Kawabata Evaluation System for Fabrics
Highlights	<ul style="list-style-type: none"> ▪ Hollow, Trilobal, Low pill and Flame Retardant polyester fibres could be spun in cotton spinning system incorporated with long cradles in fly frame and ring frame ▪ Fabrics made out of hollow polyester fibre yarns are distinctly superior as compared to that from acrylic yarns in terms of Total Hand Value (THV) measured by Kawabata Evaluation System for fabrics (KES – F) ▪ Trilobal polyester yarns meet International 50% statistics in the case of yarn tenacity. They even excel International 5% statistics in the case of yarn hairiness ▪ Trilobal polyester fabrics amply satisfy the quality requirements for medium duty upholstery fabrics ▪ Fabrics made out of Low pill polyester / cotton blends are found superior by as much as 45% in terms of Total Hand Value as compared to that from normal polyester / cotton blends ▪ Flame Retardant Polyester yarns have higher breaking elongation and better abrasion resistance as compared to normal polyester yarns ▪ Fabrics made out of Flame Retardant Polyester yarns are found superior in all the comfort – related properties like stiffness, smoothness and softness as compared to fabrics made out of normal polyester yarns
Area of applicability	Spinners
Target beneficiaries	All the SITRA member mills
Status	Completed