

## **Lyohemp<sup>®</sup> fibres made of dissolving pulp based on hemp shives**

K. Thümmeler<sup>1</sup>, B. Kosan<sup>2</sup>, F. Meister<sup>2,\*</sup>

<sup>1</sup> TU Dresden, Institut für Pflanzen- und Holzchemie, Piener Straße 19, 01737 Tharandt, Germany

<sup>2</sup> Thüringisches Institut für Textil- und Kunststoff-Forschung e.V., Breitscheidstraße 97, 07407 Rudolstadt

\* e-mail contact: [meister@titk.de](mailto:meister@titk.de)

Hemp based textile materials relives a technical renaissance both as natural fibre and as dissolving pulp raw material. The reasons for this development are increasing regenerated cellulose fibre demand, improved environmental standards and customers interests for sustainable textile goods with local origin on the one hand and the appreciation of hemp as a valuable agricultural crop on the other hand. No other domestic crop cultivates such high amounts of biomass than hemp. While natural hemp fibres access only one-fifth of the available biomass more than 50 per cent of the hemp straw material could be used for dissolving pulp manufacturing. Even if hemp (natural fibre) quality is changing in regard with the prevalent weather and present soil most of these qualities are of minor or no importance for pulp manufacturing.

The lecture will report on the results of a public funded R&D project which had been focused on the application options of hemp shives in dissolving pulp manufacturing. It will present the evaluation of different shive qualities as well as technological procedures for pulp cooking. Furthermore, dissolving pulp processing in direct dissolution and dry-wet-spinning will be introduced. Fibres resulting from the procedures exhibit comparable properties than similar cellulose regenerated fibres and offer good options for further processing into textile goods.