INN PRESSME

Processing & modification of micro natural fibres

IWNiRZ - PIB

APPLICATIONS: CONSUMER GOODS | PACKAGINGS | ENERGY & TRANSPORT

DEVELOPMENT: NEW BIOMATERIALS

CURRENT-STATUS

The pilot line will produce 20kg/day of flax or hemp fibers with microsize of diameter and length. The fiber will be degummed to reach efficient bundles dividing and modified to obtain good adhesion between fibers and matrices.

Pilot line **20kg / day**

CHALLENGE

To ensure good homogeneity of micro-fibers structure. To reach this, four combination of degumming and silanization are conducted to determine optimal bath composition and process conditions.

Improve productivity of the line → reach **TRL 7**

FURTHER DEVELOPMENT

For dispersion coatings and printing inks: Cellulose NanoFibrils (CNFs) as very viscous additives are excellent additives but in some special cases need to be functionalised.

For foam extrusion coatings: microfibrillated grade (HefCel) with less water is more compatible with plastics. The homogeneity of HefCel fibres are improved (5% of fibres are larger than 200 µm long).

Increasing productivity to **100 kg / day**

BENEFITS FOR COMPANIES AND SME'S

The pilot line will offer natural microfibers flax or hemp as componet of any biocomposites. The fibers can show high adhesion to any polymer matrices and can be functionalised by different method to meet final requirements. there is lack of such raw materials on the markets. Small fiber dimention allows to produce precise composite elements

APPLICATION EXAMPLES

SPORT EQUIPMENT,

MEDICAL,

REHABILITATIVE DEVICES,

HOME AND GARDEN EQUIPMENT,

FURNITURE,

BOXES,

PACKAGES,