INN PRESSME

Formulation of novel cellulose-based bio-inks and slurries

cidetec
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

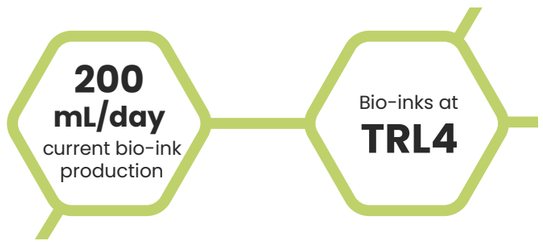
APPLICATIONS: PACKAGINGS | ENERGY & TRANSPORT

DEVELOPMENT: FORMULATION

CURRENT-STATUS

CIDETEC has developed bio-based printable inks based on commercial cellulose derivatives for use as electrolytes in printed batteries and displays.

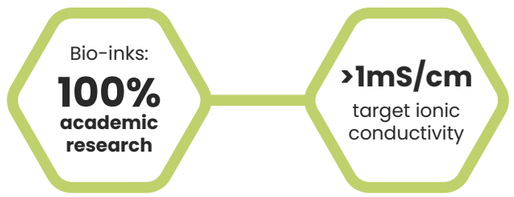
Currently, these formulations are produced at lab scale in small batches.



CHALLENGE

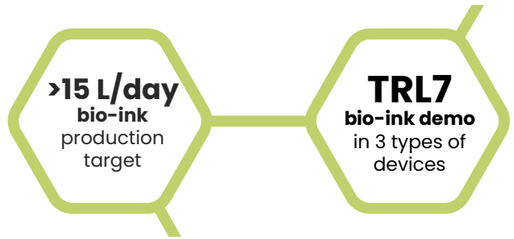
Limited development and evaluation of bio-based inks and slurries by companies due to little support in Europe for development of functional inks through technological platforms/PL services.

Challenging to attain high conductivity for printed electronic applications.



FURTHER DEVELOPMENT

Production of novel nanocellulose-based bio-inks & slurries will be scaled-up (batches of at least 15 L/day) and their functionality will be demonstrated at TRL7 as electrolytes for batteries and electrochromic displays in smart labels and as electrode material in ultracapacitors.



BENEFITS FOR COMPANIES AND SME'S

The pilot line will allow companies to develop and test bio-based printable/coatable formulations and assess the possibilities and benefits that these eco-friendlier solutions can bring them.

The pilot line services will allow SMEs and companies to develop and test such new products or manufacturing processes at affordable cost. It will also allow them to be well positioned in the field of bio-based materials and support decision-making for further and larger investments for production scale implementation.

APPLICATION EXAMPLES

SMART LABEL PRINTING

CIDETEC will develop bio-based printable inks based on cellulose nanofibers and nanocrystals for use as electrolytes in printed batteries and displays integrated in smart labels.

ULTRACAPACITOR CELLS

CIDETEC will develop water-based slurries from carbon nanomaterials of biological origin with cellulose nanoadditives for roll-to-roll coated electrodes to be used in ultracapacitors.