



National Research Council - IPCB

<http://www.cnr.it>

Bilateral Meetings

- Tuesday (09:00 am - 01:30 pm)

Description

The Institute deals with new energy, environmental protection and life science. The IPCB has both equipments to process (extruders, brabender, etc) and to characterize (thermal (DSC, TGA, DMTA), morphological (OM, SEM, TEM, AFM), structural (X-Ray, FTIR, NMR) and mechanical (Instron, pendulum) polymer based materials, blends and composites. The research activities is mostly concentrated on: • correlation molecular structure and composition, physical structure and morphology, physical-chemical properties and processability of polymeric based materials; • realization of innovative polymeric materials such as blends, mixtures, composites and nanocomposites with tailored end-use properties and for the sustainable development. Particular attention is devoted to the use of renewable materials and to the recycling opportunities of plastic materials. In recent years IPCB has developed innovative spray biodegradable varnishes for the control of spontaneous weeds in vegetable crop protection and flower cultivation.

Organization Type

Research Centers,

Country

Italy

City

Pozzuoli, Via Campi Flegrei 34 [Google map](#)

Areas of Activities

Agro-food manufacturing

Other sectors relevant to the thematic focus of the event

Technological offer

Biomedical polymers for tissue engineering and controlled release

The development of protocols for the functionalization of biodegradable polyesters. Modified polycaprolactone has been also used for successive crosslinking reactions.

Chemical modification of natural polysaccharides (alginate, chitosan) and their blends for use as hydrogels, devices for drug release and biodegradable networks intended to prolong the in situ re-sorption time of a mineral phase for tissue regeneration. Realization of scaffolds for tissue engineering based on blends of PDLLA and PCL. Realization of composite materials based on PCL reinforced with silica nanoparticles. Realization of non-viral vectors for gene therapy based on polyethylenimine (PEI) and biocompatible polymers. Chemical modification of the biopolymer/PEI material

with the insertion of molecules able to work as ligands of receptors in order to improve the transfection efficiency.
Shape-memory biodegradable polymers for in vivo applications based on cross-linked polycaprolactone.

Cooperation Offered

1. Technical co-operation
2. Manufacturing agreement

Cooperation Requested

1. Technical co-operation
2. Manufacturing agreement
3. Investment/Financing

Technological offer

Water based sprayable mulching for crop protection

the project aims at developing and testing innovative mulching materials for protected cultivation based on biodegradable coatings.

INNOVATIVE ASPECTS AND MAIN ADVANTADGES / BENEFITS:

The coatings are applied as spray on the soil. The coatings are made of biodegradable water soluble polysaccharides coming from seaweeds or crustaceous shells and reinforced with vegetal fibers, coming from wastes of agro-food products, such as hemp, kenaf, cotton, bamboo, waste cellulose from recycled paper

TECHNICAL SPECIFICATIONS: (for requests only):

We need to find companies able to supply the raw materials for the preparation of the sprayable coatings at the best cost/performance ratio.

CURRENT STAGE OF DEVELOPMENT:

The coatings are at an industrial pilot plant production level. Many tests have been carried out in Italy, Netherlands, China, Spain, on different crops and flower cultivations, either in soil and in pots.

INTELLECTUAL PROPERTY RIGHTS (IPR):

A patent has been issued to Dr. Mario Malinconico in Italy, and an international patent application procedure (PCT) has been started.

APPLICATION FIELDS:

Agriculture, waste management

Cooperation Offered

1. Technical co-operation
2. License agreement
3. Manufacturing agreement

Cooperation Requested

1. Technical co-operation
2. License agreement
3. Manufacturing agreement