

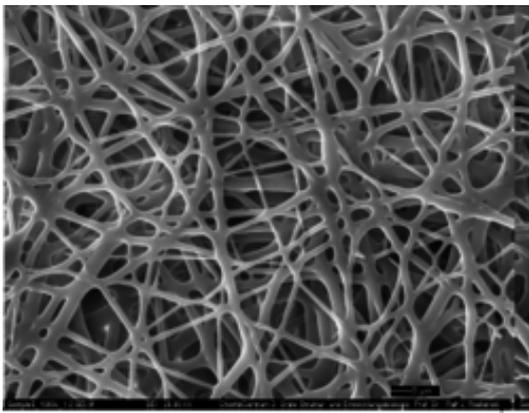
### Technology Offer

## Novel biomembranes based on defined electro-spun Poly (alkyl Cyanoacrylate)-fibers

Reference Number 32-00064

### Challenge

There is a permanent need for novel resorbable biomaterials as membranes for biomedical use in surgical bone regeneration, implant placement, tissue engineering or skin dressing. Collagen-based or polytetrafluoroethylene membranes, the mainstay in guided bone regeneration, are widely used in clinical application. To overcome limitations with respect to membrane requirements such as biocompatibility, proper antibiosis activity, scaffolding properties to create proper biological space, and suitable resorption time innovative approaches for steering controlled manufacturing of synthetic biodegradable biomembranes are desirable in oral, skin and bone regeneration medicine.



### Technology

This technology refers to a novel procedure for fabricating poly(alkyl cyanoacrylate) (PACA) based fibers and meshes of defined PACA-polymers generated by controlled polymerization. The procedure opens the possibility to blend with other (synthetic or natural) polymers, (small) molecules, supplements, compounds or agents (e.g. antibiotics, growth factors), giving rise to a multitude of diverse fibers with preferred biophysical and biological properties and functions. Consequently, fibers/ meshes with tunable degradation profiles can be obtained after the e-spinning of polymers/co-polymers with defined molecular weight.

### Commercial Opportunity

Collaboration towards biomedical application/ clinical translation and in-licensing opportunities exist.

### Development Status

Methodology and protocols have been established with poly(n-butylcyanoacrylate) (PBCA) of defined polymer-size for development of various meshes, including blends with other materials/co-polymers or compounds/ small molecule agents. Information on the physico-chemical morphological as well as biological properties of various PACA fibers and meshes and respective derivatives are available upon request. In vitro testing was carried out to reveal their biofunctions and biological compatibility.

### Patent Situation

European Patent Application filed December 2018

### Further Reading

Ramos Carriles et al., 2014, Molecules 19, 6220-6227