

# VIBI

## Innovative matrix for a vascularized and innervated bone engineered implant

The current proposal focuses on the development of innovative matrices for bone tissue engineering. These matrices aim to recruit different cell types, especially sensory neurons, integrating the role played by the peripheral nervous system on bone physiology and vascularization. Here, we aim to develop a cell-free and growth factor-free matrix suitable for the complex orchestration between innervation, angiogenesis and osteogenesis, in case of large and complex bone defects. Such a holistic multidisciplinary approach to regenerate a fully innervated and vascularized bone tissue represents a real innovation in the field of bone substitutes, and requires a strong collaboration between two Departments from University of Bordeaux, dedicated to Technologies for Health, Physics and Chemistry.

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**With the help of the SPARK team, we wish to transfer our technology from the laboratory to the clinical use. To achieve this goal, we will benefit from the large expertise of the Medical Doctors, Industrials and Business Consultants that are available through the SPARK initiative.**