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# Catalogue of Innovative Opportunities

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## Introduction

**Catalogue of innovation opportunities (KIP)** is a portfolio associating products, special offers of contract research and other forms of investment opportunities covering all faculties of Charles University.

Every year we register new innovative technologies and the portfolio is constantly updated. CPPT considered as the most effective form of cooperation personal contact with the company, when we identify specific areas of your interest.

Below listed technologies are not an absolute list of our portfolio and we are pleased to establish cooperation with other companies.

### Contact

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## Portfolio

### In vivo evaluation of antituberculous activity of agents with efficacy against mycobacterium tuberculosis

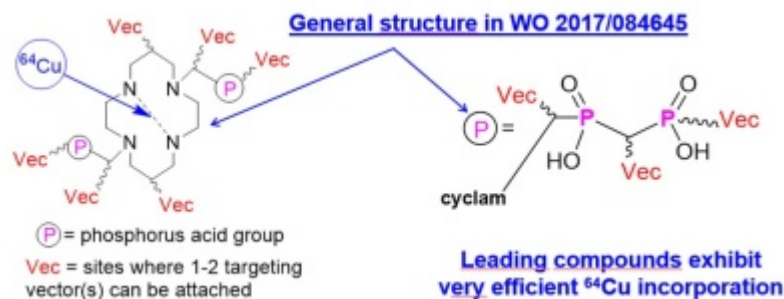
Charles University's Faculty of Pharmacy in Hradec Králové, in cooperation with the Centre of Biological Defence in Těchonín, developed an innovative method for in vivo testing of the antituberculous agents' activity against *Mycobacterium tuberculosis*. The unique method and equipment are now available for scientific institutions and private companies.



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### Bifunctional cyclam based ligands for conjugations with targeting vectors and their 64-Cu radiopharmaceuticals for PET imaging

Completely new chelator family for copper isotopes crucial for theranostic scenario in the visualization of biodistribution of many biologically active compounds using PET imaging in nuclear medicine. The novel bifunctional cyclam based ligands have high efficiency and specificity in radiolabelling with 64-copper.



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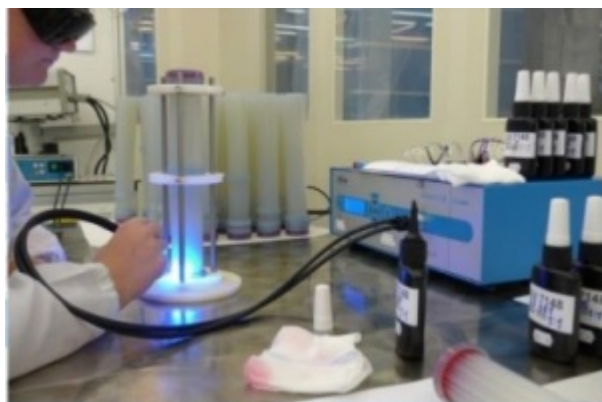
## Oxa- and thiadiazoles useful on the treatment of drug-susceptible and multidrug-resistant tuberculosis

Inventors of the Faculty of Pharmacy in Hradec Králové developed a promising large series of substituted nitro group-containing oxa- and thiadiazoles, with high antimycobacterial effect against drug-susceptible and multidrug-resistant mycobacteria. The simple synthetic procedures make them easily accessible and appealing for pharma companies and antituberculosis chemotherapy.

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## Heat exchanger with laminarizer

New filling in the gap heat exchanger medical device for cooling and heating of fluids, primarily developer for blood and dialyzing procedure. The new heat exchanger is intended as a single use healthcare device, it is small and made by plastic. It can be used as well in pharmaceutical, chemical and food industry.



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## Homebalance

Homebalance is an interactive system for home-based therapy of balance and motor skill disorders. It is suitable for patients of any age category, in healthcare facilities or at home with an interactive game-like interface. It consists of low-cost, portable and lightweight components.



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## **Innovative technical solution for home-based therapy monitoring, evaluation of ergodiagnosics and occupational potential of patients**

This innovative mobile application enables a more efficient approach to therapy and more detailed ergodiagnosics of patients with different types of diagnoses. The tool can be used also in home based therapy and it is suitable also for healthy population as prevention and for patients suffering from cognitive function disorders during their rehabilitation.

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## **ROTAPHONE - a mechanical sensor system for measuring seismic ground motions and a method of seismic measurement using this system**

Innovative device for seismic prospecting with excellent resolution of geological structure. The developed mechanical seismic sensor allows for the first time the simultaneous collocated detection of three rotation rate and three ground velocity components in a short-period range using one single device.



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## Device to measure and monitor pressure pulses

New non-invasive method of measuring intracranial arteries pressure changes and their collateral circulation thanks to a small, quick, inexpensive and objective diagnostic output device. Using this innovative method and device it is possible to check easily the patient's tolerance to subsequent surgery and temporary closure of one of the carotid arteries.



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## Mobile application intended for training and therapy of cognitive function disorders

New mobile application for cognitive functions therapy. The innovative solution allows patients with brain damage and seniors with memory, attention and orientation disorders to train cognitive functions at home thanks to the application designed with a user friendly interface and motivating, easy and optimize levels to suit the patient's needs.

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## Testing Thermo-chamber

Thermo-chamber for nondestructive contactless testing of the physical properties of biocompatible smart materials and health care instruments made by such compounds. This new device will enable a better adaptability of medical solutions to the real environment inside the patient's body .



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## PORTABLE LOW-COST DEVICE FOR EXAMINATION OF VISUAL EVOKED POTENTIALS (VEPs)

The Institute of Pathological Physiology of Charles University in Hradec Králové has developed and patented low-cost 4-channel wearable device for examination of visual evoked potentials (VEPs) for quality of visual perception and diagnosis of its disorders. With such device, now it is possible to carry out VEP diagnostics simply and everywhere with a competitive cost.



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