# STABILIZATION OF DOPAMINE INTO SILICA SOL-GEL NANOSTRUCTURED MATRIX TO BE DELIVERY INTO THE BRAIN IN PARKINSON STUDIES

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Dr. James Parkinson, a British physician, for whom the disease was named, first described Parkinson disease in 1817. Despite progress in understanding the pathogenesis of this ill, the cellular basis of human Parkinson remains a mystery and, in the absence of specific etiological comprehension, approaches to drug therapy are still directed toward the control of symptoms, i.e a variable combination of tremor, bradykinesia, rigidity and postural instability. Parkinson's disease (PD) is the second most progressive neurodegenerative disorder after Alzheimer's disease. Therefore, we propose to release dopamine directly into the brain using nanostructured sol-gel $SiO_2$ reservoir devices, stabilizing the drug within the reservoir by adsorption. Dopamine is a strongly oxidizing agent. However, our biocompatible materials are functionalized with reductor groups and maintain the stability of the drug within the matrix

Thermal effusivity evolution as a function of time of aqueous emulsions of dopamine encapsulated in a $SiO_2$ matrix, synthesized by the sol–gel method, was monitored during dehydration under ambient conditions. Measurements of thermal effusivity were performed by a photoacoustic technique using a conventional cell. The results show sigmoidal growth as a function of time during the dehydration process.