SPECTROSOPIC INVESTIGATION OF THE BINDING OF PCBs AND DIOXINS TO SELECTIVE PEPTIDES ON POLYANILINE MATRIX. Ling Wang[1], Edikan Archibong[1], Ivan Ivanov[2], Nelly Mateeva[1], Adrian Lita[1], Department of Chemistry, Florida A&M University, 1530 S. Martin Luther King, Jr. Blvd., Tallahassee, FL 32307, [2] Department of Veterinary Physiology and Pharmacology, Texas A&M University, Mail Stop 4466, College Station, TX 77843

This study utilizes previously screened pentapeptides that bind selectively to dioxin and dioxin-like structures. The peptides were incorporated in a polyaniline matrix (emeraldin base or emeraldine salt). The first objective of the investigation was to confirm the binding and evaluate the stability of the reagents. Fluorescently labeled peptides were used to follow the ligand binding on the matrix. Elemental analysis, XPS, Raman spectroscopy and solid state fluorescence were employed to investigate the amount of peptide included in the polymer and the stability of the reagent under different conditions. Principal component analysis was performed on a series of UV/Vis and fluorescence spectra of the investigated compounds in order to confirm the interaction between the polymer, glutaraldehyde and the peptides as well as the toxin binding to the chemosensors.