

ATTACHMENT OF SMALL PEPTIDES TO A POLYMERIC MATRIX Edikan Archibong¹, Ling Wang¹, Nelly Mateeva¹, Ivan Ivanov², Adrian Lita¹ ¹Department 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

The present study employs several dioxin-selective pentapeptides as a model to create a heterogeneous chemosensor on polyaniline matrix and investigate its stability and binding properties. The peptides have been selected using combinatorial approach and competitive binding reaction between chlorinated dioxins and labeled dioxin-like compound with peptide library on polymer beads. In this study, the peptides have been labeled with fluorescence markers at the C- or N- end, leaving the other end available for binding. The original, dioxin-selective peptides have also been modified in order to study the role of some key amino acids in the binding process. The peptides were incorporated into the PANI matrix both with and without the GA linker. XPS, FTIR, elemental analysis, UV/Vis, and fluorescence was used to investigate the interaction between the polymer, crosslinking reagent, and the peptides. PCA has been applied to clarify the type of bonding between the peptides and the matrix.