

From molecular understanding to knowledge-based design and innovative uses of humic materials in biotechnology (“DESIGNER-BIOHUMICS”)

Molecular Design and Innovative Uses of Biohumics

I. Perminova¹, N. Kulikova¹, S. Ponomarenko¹, A. Kovalenko¹, L. Karpiouk¹, G. Badun¹, V. Kholodov¹, A. Muzafarov¹, Ph. Schmitt-Kopplin², N. Hertkorn², M. Frommberger², A. Kettrup².

1 Department of Chemistry, Lomonosov Moscow State University, Russia, ipermin@org.chem.msu.ru

2 GSF-Research Center for Environment and Health, Institute of Ecological Chemistry, Neuherberg, Germany

Natural organic matter and humic substances are environmentally benign (e.g. biocompatible, non-toxic) and vastly abundant resources with a wealth of as yet mostly untapped applications in agriculture, remediation, biotechnology, industry and medicine.

In this concept poster, various routes to the synthesis of humic materials with tailored properties for a wide range of applications are proposed and outlined with various examples.