

Biopolymers and functional restorative materials: origins, reasons and applications**V. Tamara Perchyonok**¹¹ VTPCHEM PTY LTD, Department of Research and Innovation, Southport, Australia, e-mail: tamaraperchyonok@gmail.com**1. EDITORIAL**

Recently the role of free radicals in health has attracted tremendous interest in the field of medicine, dentistry and molecular biology. Free radicals can be either harmful or helpful to the human body. When there is an imbalance between input and output of free radicals, a condition called “oxidative stress” develops. To counteract oxidative stress, the body has protective antioxidant mechanisms, which aid in lowering the incidence of various human morbidities and mortalities. The implication of oxidative stress in the etiology of many chronic and degenerative diseases suggests that antioxidant therapy represents a promising avenue for treatment.

Fields of interest, functional biomaterials for alternative drug delivery systems, bio-actives and protein based drug delivery systems, novel antioxidants and biomaterial molecular reactors, synthetic nano-materials as a potential man made free radical

defense mechanisms. The issue will highlight the progress, which has been recently in developing conventional free radical chemistry in the test-tube to a broadly applicable and useful tool to build and understand the complex problems of life science and novel material with the precision and clarity of well-defined and controlled free radical chain reaction.

The scope of the issue brings together the research in the field of innovative approaches of free radical chemistry, “intelligent bio-materials” and design for biomedical applications, heterogeneous catalysis under the “green chemistry conditions” as well as diamond-like carbon coatings on medically relevant polyurethane tubing with a follow-up aging study which highlights the importance and necessity of the multidimensional science on the bio-interface in order to achieve in depth understanding of biologically relevant molecular problems.