



## Supramolecular green theranostic platforms as a remedy for the burden on the healthcare systems

**Ruken Esra Demirdogen**

*Cankiri Karatekin University, Turkey*

### Abstract:

Unsustainable styles of production and consumption caused many different diseases rise. This put huge burden on healthcare systems. Among these diseases cancer with increasing incidence and prevalence is a severe social, economic and health challenge. The current treatment strategies relying on chemotherapy has limited success due to poor bioavailability, high-dose requirements, adverse side effects, low therapeutic indices, multiple drug resistance, and non-specific targeting of the drugs used. As a solution to all “theranostics” -the precision medicine providing simultaneous diagnosis and targeted treatment- rose. The key actor -the drug- can become more effective by increasing the biodistribution, selectivity, safety-efficacy ratio via supramolecular nanomedicines. This talk will be about a novel smart theranostic system -the light switchable/controllable delivery system (MMoO<sub>4</sub>:Eu-MCM-41-Fe<sub>2</sub>O<sub>3</sub>)- with magnetic and luminescent properties providing controlled and targeted drug release, high biocompatibility, loading efficiency, circulation stability, predetermined release kinetics and monitoring of the drug. The increased effectiveness and efficiency of treatment and diagnosis would decrease the huge burden put on the healthcare system.

### Biography

Esra Demirdogen, Ass. Prof. Dr. -chairperson of Analytical Chemistry at Karatekin University, Turkey- has her expertise in green chemistry and nanotechnology especially on smart materials and drug delivery systems and recently developed SCF-EHDA for production of new supramolecular theranostic platforms for which she received many awards. She pioneered green chemistry and sustainable technologies initiation in Turkey and established green chemistry centers both at home and abroad. She authored more than 100 papers, 4 books and coordinated and completed many national and international



projects and lectured in many countries. She is editorial board member and reviewer of many distinguished scientific journals.

### Publications:

1. Investigation of heavy metal content of Turkish tobacco leaves, cigarette butt, ash, and smoke Pelit, Fusun Okcu; Demirdogen, Ruken Esra; Henden, Emur ,2013 in Environmental Monitoring and Assessment, DOI: 10.1007/S10661-013-3266-4
2. Achievements, outcomes and proposal for global accreditation of engineering education in developing countries Memon, Javed A.; Demirdogen, R. Esra; Chowdhry, B. S. , 2009 in Procedia - Social and Behavioral Sciences, DOI: 10.1016/J.SBSPRO.2009.01.451
3. Novel thiourea derivative and its complexes: Synthesis, characterization, DFT computations, thermal and electrochemical behavior, antioxidant and antitumor activities Yesilkaynak, Tuncay; Muslu, Harun; Ozpinar, Celal; ... Kulcu, Nevzat; see more, 2017 in Journal of Molecular Structure, DOI: 10.1016/J.MOLSTRUC.2017.04.049

**Webinar on Healthcare - Health Economics and Policy, October 28, 2020, London, UK**

**Citation:** Ruken Esra Demirdogen, Supramolecular green theranostic platforms as a remedy for the burden on the healthcare systems, Health Economics 2020; October 28, 2020; London, UK