

## 4<sup>th</sup> International Conference on Medicine and Surgery

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### Artificial cells with emphasis on applications in medicine

Artificial Cells is not to reproduce biological cells, but to prepare artificial system for possible uses in medicine and other areas. Many of the ideas on artificial cells (Chang Science 1964, Nature 1971, Nature Rev Drug Disc 2005, JANB 2019) are being extensively applied and extended by researchers around the world resulting in rapid and exiting progress and discoveries. This has evolved into nanomedicine, biotherapeutics, blood substitutes, drug delivery, enzyme/gene therapy, cancer therapy, cell/stem cell therapy, nanoparticles, liposomes, bioencapsulation, COVID\_19 vaccine, replicating synthetic cells, cell encapsulation/scaffold, biosorbent/immunosorbent hemoperfusion, regenerative medicine, encapsulated microbe, nanobiotechnology, nanotechnology and other areas. More futuristic research includes nanorobot, nano computer, multimodal locomotion delivery robot and others. This author predicted in 1972 that “Artificial Cell is not a specific physical entity. It is an idea different approaches can be used to demonstrate this idea”. Indeed, there are now unlimited possibilities in variations for the membranes. contents, dimensions (macro, micro, nano and molecular), and configurations. We have only touched the surface of the enormous potential of artificial cells.

### Biography

He is known as the co father of artificial cells. An honor physiology B.Sc. student at McGill University, he proposed and prepared the first artificial cells on his own in his dormitory room and was then allowed to use this for his required honor research project (Chang, Hon B.Sc. research report, 1957). He continued this research in medical school then Ph.D. (Chang Science 1964, Nature 1971, Artificial Cells Monograph 1972) and for the rest of his research career to the present with 560 full papers.

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