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Research Tutorials in Chemistry (RTC)

## Chemical Aims Today (Cat)

### One. (Statistical Evolving) Experimental design (Seed) in Omni\_metrics (O!M)

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In chemistry, the application disciplines, instrumental sensors in operation and thought experimental/computational/ experimental methods in vogue span a wide spectrum with high fidelity in scope and precision. Chemical aims today (Cat, Chart 1) are after hundreds of years of evolution and further evolve to adapt to the challenges of twenty second century.

During twentieth century, the designing of experiment, varying magnitudes of relevant chemical/physico-chemical factors/catalysts etc. was believed to be in the minds/ genes of trained chemists. Statistical experimental design (ED) developed in first half of last century was used in agricultural trials for maximum yield of rice and other cereals. In 1970s, design of experiments using factorial/central composite entered into quantitative and kinetic methods of chemical analysis. With evolutionary changes of Chemometrics, ED has become an integral part chemical activity. The breadthwise application endorsed the positive benefits compared to equal/unequal interval trials and set the flag for its indispensability in critical tasks. Now, Omnimetrics dealing with diverse disciplines with chemical component in the interdisciplinary task from high end contributions employ most of state- of-knowledge tools to ensure not only value-added-end-

#### Chart 1: Cat in nature

Cat belongs to felidae family and species range from domestic cat to wild leopard/lion. The magnificent integrity/diversity is along nature's evolution.



#### CAT (computerized axial tomography) in Medical diagnosis:

is a state-of-knowledge instrument in medical



Diagnosis, an outcome of decades' experts' effort; it sees soft-tissues, which are not perceived by X-rays except mapping bones.