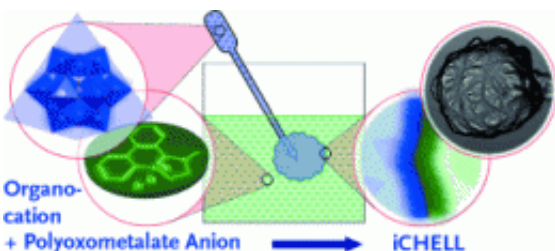


Scientists take first step towards creating 'inorganic life'

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(PhysOrg.com) -- Scientists at the University of Glasgow say they have taken their first tentative steps towards creating 'life' from inorganic chemicals potentially defining the new area of 'inorganic biology'.

Professor Lee Cronin, Gardiner Chair of [Chemistry](#) in the College of Science and Engineering, and his team have demonstrated a new way of making inorganic-chemical-cells or iCHELLS.

Prof Cronin said: “All [life](#) on earth is based on organic biology (i.e. carbon in the form of amino acids, nucleotides, and sugars etc) but the inorganic world is considered to be inanimate.

“What we are trying do is create self-replicating, evolving inorganic [cells](#) that would essentially be alive. You could call it inorganic biology.”

The cells can be compartmentalised by creating internal membranes that control the passage of materials and energy through them, meaning several [chemical](#) processes can be isolated within the same cell – just like biological cells.

The researchers say the cells, which can also store electricity, could potentially be used in all sorts of applications in medicine, as sensors or to confine chemical reactions.

The research is part of a project by Prof Cronin to demonstrate that inorganic chemical compounds are capable of self-replicating and evolving – just as organic, biological carbon-based cells do.

The research into creating ‘inorganic life’ is in its earliest stages, but Prof Cronin believes it is entirely feasible.

Prof Cronin said: “The grand aim is to construct complex chemical cells with life-like properties that could help us understand how life emerged and also to use this approach to define a new technology based upon evolution in the material world – a kind of inorganic living technology.

“Bacteria are essentially single-cell micro-organisms made from organic chemicals, so why can’t we make micro-organisms from inorganic chemicals and allow them to evolve?”

“If successful this would give us some incredible insights into evolution and show that it’s not just a biological process. It would also mean that we would have proven that non carbon-based life could exist and totally redefine our ideas of design.”

The paper ‘Modular Redox-Active Inorganic Chemical Cells: iCHELLs’ is published in the journal *Angewandte Chemie*.

Lee Cronin: Making matter come alive. A video of Professor Cronin's TED lecture

More information: Modular Redox-Active Inorganic Chemical Cells: iCHELLs, [DOI:10.1002/anie.201105068](https://doi.org/10.1002/anie.201105068)

Provided by University of Glasgow

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