



## Personal report

**John Bannister Goodenough**

Professor, The University of Texas at Austin, Virginia H. Cockrell Centennial Chair of Engineering

John Goodenough was born of U.S. parents in Jena, Germany, in 1922. He received a BA in mathematics from Yale University in 1943. After serving as a meteorologist for the USAAF in World War II, he obtained a Ph.D. in physics at the University of Chicago in 1952. From 1952 to 1976 he was at the Lincoln Laboratory of the Massachusetts Institute of Technology where he first helped to develop the ferrite-core coincident-current memory critical to the development of the digital computer and headed research groups in Magnetism and in Electronic Materials. It was during that period that he wrote his two books *Magnetism and the Chemical Bond* and *Les oxydes des métaux de transition*.

From 1976 to 1986, he was Professor and Head of the Inorganic Chemistry Laboratory in Oxford, England, where his research concentrated on new materials for energy conversion. He developed the concept of framework structures for alkali-ion solid electrolytes and obtained the basic patents for layered and spinel oxides as cathodes for lithium secondary batteries. He also worked in photoelectrolysis for solar-energy conversion and catalytic electrodes for fuel cells.

Since 1986, he has held a chair in the Materials Science and Engineering Center of the University of Texas at Austin where he has identified the LiFePO<sub>4</sub> cathode for the Li<sup>+</sup>-ion battery, developed

new electrolyte and electrode materials for the solid oxide fuel cell, and contributed significantly to our understanding of the unusual physical phenomena encountered at the crossover from localized to itinerant electronic behavior.



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