3 pages

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**COVER NOTE**

**A New Refutation of the Classical Concept of Time in Quantum Relativity**

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Platform (Oral) presentation at Session 01-13 or 01-16

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## ABSTRACT

### A NEW REFUTATION OF THE CLASSICAL CONCEPT OF TIME IN QUANTUM RELATIVITY

Albert Einstein and ***Kurt Gödel**** (Princeton University, Princeton, NJ, USA)
P. A. M. Dirac (Cambridge University, Cambridge, London, UK)

Coupled abiotic and biotic reactions were investigated for the mineralization of 2,4,6-trinitrotoluene, TNT. Modified Fenton reactions (with Fe(III) catalyst) were used as a chemical pretreatment of TNT prior to biological mineralization of the Fenton degradation products by unclassified activated sludge cultures. Using a hydrogen peroxide concentration of 0.9%, a Fe(III) concentration of 13 mM, and biomass added 12 hours after initiation of the abiotic reaction, the observed extent of mineralization with the coupled abiotic/biotic system, 81%, was approximately 7% greater than with the abiotic, Fenton system alone. Results of this study showed that, if properly optimized, the use of a coupled abiotic/biotic system may be a viable alternative for the treatment of waters and soils containing TNT.

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