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**BIOMEDICAL ENGINEERING**

**BIOMEDICAL IMAGING AND VISUALIZATION**

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Sequence Analysis of rDNA ITS of Clinical Fusarium Species .............................................................................................................. 1904

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A Nonlinear Model and an Optimization Algorithm to Infer Genetic Interactions ............................................................................... 1917

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Analysis of the Bipartite Networks of Domain Compositions and Metabolic Reactions ........................................................................ 1921

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Selection of Proximity Measures for Matrix Visualization of Binary Data ............................................................................................ 1932

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A Fast Method of Coarse Density Clustering for Large Data Sets ........................................................................................................... 1941

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Data Integration Model Based on Plug-In and Ontology Language ....................................................................................................... 1950

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Scientific Quality Towards Specific Topics ........................................................................................................................................ 1955

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Semantic Based Integration of Heterogeneous Databases ..................................................................................................................... 1960

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Semantics of Fuzzy Temporal Databases Calculus ................................................................................................................................. 1966

Liguo Deng, Z. M. Ma, Gang Zhang

A High Security Framework for SMS ....................................................................................................................................................... 1971

Songyang Wu, Chengxuian Tan

A New ID-Based Deniable Ring Authentication with Constant-Size Signature .................................................................................... 1977

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An Adaptive Trust Management in Distributed Systems Using Reputation and Uncertainty ................................................................. 1981

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Multi-Factor Rebalanced RSA-CRT Encryption Schemes ......................................................................................................................... 1986

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Efficient Privacy of Message Encryption Algorithm for Anonymous Receivers in E-Commerce ............................................................ 1991

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Two Constructions of Fuzzy Identity Based Signature .......................................................................................................................... 1995

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Metadata Oriented Software Development Method .................................................................................................................................. 2004

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Research on the Clustering and Composition of P2P-Based Web Services .......................................................................................... 2007

Lei Wang, Jing Si, Xiao-bo Hu

Software Reliability Model Based on Stochastic Theory .......................................................................................................................... 2012

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SurgView-RFT Electromagnetic Navigation System in Trigeminal Ganglion RF Therapy ................................................................. 2017

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