

# **2012 IEEE 10th International Conference on the Properties and Applications of Dielectric Materials**

**(ICPADM 2012)**

**Bangalore, India  
24 – 28 July 2012**



**IEEE Catalog Number: CFP12ICP-PRT  
ISBN: 978-1-4673-2852-4**

# fTABLE OF CONTENTS

<b>Application Of A Class Of Nano Fluids To Improve The Loadability Of Power Transformers .....</b>	<b>1</b>
<i>T. Ramu, B. Keshavan, K. Murthy</i>	
<b>Tree Propagation Speeds in Epoxy Nanocomposites .....</b>	<b>7</b>
<i>T. Tanaka</i>	
<b>Electrical Discharge Resistant Characteristics of Nanodielectrics .....</b>	<b>13</b>
<i>Rashmi, N. Renukappa, K. Shivakumar, M. Manjunath</i>	
<b>Control Of Electric Field And Voltage Distribution Of A 765KV System Polymeric Insulator Used In Indian Transmission Systems .....</b>	<b>18</b>
<i>M. Kanyakumari, R. Aradhya, H. Jangawala</i>	
<b>Research on Preparation Technology and Properties of mLLDPE/LDPE/CB Composite with PTC .....</b>	<b>22</b>
<i>W. Zhang, X. Hu, W. Wu, Y. Zhang</i>	
<b>Experimental Study of Permittivity of Acrylic Dielectric Elastomer .....</b>	<b>26</b>
<i>B. Pramanik, R. Sahu, S. Bhaumik, K. Patra, A. Pandey, D. Setua</i>	
<b>Boron Nitride Filled Immiscible Blends Of Polyethylene And Ethylene-Vinyl Acetate Copolymer: Morphology And Dielectric Properties .....</b>	<b>30</b>
<i>W. Dong, Z. Han, B. Han</i>	
<b>Fabrication and Characteristics of Sub-Micrometer Vertical Type Organic Semiconductor Copper Phthalocyanine Thin Film Transistor .....</b>	<b>34</b>
<i>D. Wang, X. Wang, C. Wang, C. Pang, J. Yin, H. Zhao</i>	
<b>Study On Mechanism And Properties Of Alcohol-Based Polyurethane Adhesives .....</b>	<b>38</b>
<i>Y. Chen, J. Yin, Y. Sun, F. Li, W. Jiang</i>	
<b>Synthesis Of Vinyl Ester And It Blending With UPR To Prepare Electrically Insulating Composite With Improved Mechanical Properties.....</b>	<b>42</b>
<i>S. Bhattacharya, S. Patil, L. Chaudhari, S. Swain, R. Sharma, V. Chaudhary</i>	
<b>A Micro Electro-freezing Chip Used in the Crystallization of Aqueous Solutions under AC Electric Field .....</b>	<b>46</b>
<i>Y. Ma, L. Zhong, H. Hu, Q. Yu, Y. Zhang</i>	
<b>The Dielectric Properties of Electroporated Human Breast Cancer Cells.....</b>	<b>50</b>
<i>R. Sundararajan, F. Xiao, K. Otto, I. Camarillo</i>	
<b>The Effect Of <math>\text{CaCu}_3\text{Ti}_{3.95}\text{Zr}_{0.05}\text{O}_{12}</math> Fillers On Microstructure And Dielectric Behaviour Of <math>\text{CaCu}_3\text{Ti}_{3.95}\text{Zr}_{0.05}\text{O}_{12}</math>/Polyimide Composites .....</b>	<b>55</b>
<i>Q. Chi, L. Gao, J. Sun, X. Wang, Q. Lei</i>	
<b>Preparation and Characterization of Multiferroic <math>\text{BiFeO}_3</math>.....</b>	<b>59</b>
<i>W. Song, D. Zhang, Z. Sun, B. Han, L. He, X. Wang, Q. Lei</i>	
<b>Breakdown Performance of Low Density Polyethylene Nanocomposites .....</b>	<b>63</b>
<i>S. Li, G. Yin, J. Li</i>	
<b>Preparation of High-Dielectric-Constant <math>\text{Ag}@\text{Al}_2\text{O}_3</math>/Polyimide Composite Films for Embedded Capacitor Applications.....</b>	<b>67</b>
<i>L. Liu, X. Gao, L. Weng, H. Shi, C. Wang</i>	
<b>Study on the Transformation of Electrical Tree from Water Tree Degradation in XLPE .....</b>	<b>71</b>
<i>J. Wang, X. Zheng, J. Wu, Y. Li, Z. Zhang</i>	
<b>Thermal Effects On Acoustic Emission Based PD In Transformer Oil: A Study .....</b>	<b>77</b>
<i>T. Shanker, H. Nagamani, G. Puneekar</i>	
<b>Modeling and Simulation Based Study for On-line Detection of Partial Discharge of Solid Dielectric.....</b>	<b>81</b>
<i>V. Fasil, S. Karmakar</i>	
<b>Spectroscopic Analysis Of Tracked Silicone Rubber Insulation.....</b>	<b>86</b>
<i>S. Ganga, N. Vasudev, V. Thambi, Vainatheya, G. Viswanath, R. Aradhya</i>	
<b>Denosing and Pattern Recognition of Partial Discharges in an Insulator using Wavelet Transform .....</b>	<b>90</b>
<i>V. Padma, V. Raghavan</i>	
<b>Interpreting the Frequency Responses of PD Signals for PD Location in Transformer Windings - Gram Schmidt Orthonormalized Method .....</b>	<b>95</b>
<i>V. Jeyabalan</i>	
<b>Interpreting the Frequency Responses of PD Signals for PD Location in Transformer Windings - Normalized Correlation Method .....</b>	<b>99</b>
<i>V. Jeyabalan</i>	

<b>Influence Of Compatibilizers On The Water-Tree Property Of Montmorillonite/ Cross-Linked Polyethylene Nanocomposites</b> .....	103
<i>X. Li, X. Liu, M. Xu, D. Xie, X. Cao, X. Wang, H. Liu</i>	
<b>Dielectric Properties of Silica Hollow Spheres/Epoxy Nanocomposites</b> .....	107
<i>H. Zhou, Z. Dang, J. Zha, Y. Fan, H. Chen</i>	
<b>Specific Gravity and Dielectric Permittivity Characteristics of Mesoporous-Alumina/Epoxy Composite</b> .....	110
<i>M. Kurimoto, T. Kawashima, H. Suzuki, Y. Murakami, M. Nagao</i>	
<b>Improved Performance Of Silicone Rubber Insulation With Nano Fillers</b> .....	114
<i>S. Ganga, G. Viswanath, R. Aradhya</i>	
<b>Effect of TiO<sub>2</sub> and oMMT Nanofiller On Thermal Conductivity And Heat Deflection Temperature Of Nanodielectric Composites</b> .....	118
<i>N. Renukappa, K. Shivakumar, M. Manjunatha, P. Kumaran</i>	
<b>Fabrication and Characterization of Electrospun Composite Materials</b> .....	123
<i>S. Bian, S. Jayaram, E. Cherney</i>	
<b>Plasma Functionalization of SiO<sub>2</sub> Nanoparticles for the Synthesis of Polymer Nano-dielectrics</b> .....	127
<i>W. Yan, B. Phung, Z. Han, K. Ostrikov</i>	
<b>Erosion of ATH and Silica Filled Silicone Rubber in the DC Inclined Plane Test</b> .....	131
<i>R. Ghunem, S. Jayaram, E. Cherney</i>	
<b>Surface Flashover Characteristics of Modified Polyimide under DC Voltage in Vacuum</b> .....	135
<i>Z. Zhang, W. Wu, J. Wu, J. Wang, X. Zheng</i>	
<b>Effects of Oil Thermal Aged States on the Space Charge Behavior in Oil-paper Insulation</b> .....	139
<i>D. Wang, S. Wang, H. Mu, G. Zhang, M. Lei</i>	
<b>Understanding Electrical Treeing Phenomena In Gamma Ray Irradiated Xlpe Cable Insulation</b> .....	143
<i>R. Sarathi, B. Aryanandiny, T. Tanaka</i>	
<b>Models For The Estimation Of Life Of Stator Insulation In Large Rotating Machines</b> .....	147
<i>T. Ramu, B. Keshavan, M. Anuradha</i>	
<b>Exploration on Use of Ferrofluid in Power Transformers</b> .....	153
<i>S. Chaudhari, S. Patil, R. Zambare, S. Chakraborty</i>	
<b>Differential Time-Domain Spectroscopy Technique Based on Polarization and Depolarization Current and Their Applications in Oil-Paper Insulation Estimation</b> .....	157
<i>J. Wei, H. Xu, J. Wang, G. Zhang</i>	
<b>Determination Of Temperature Distribution And Reduction Of Life Of A Dry Type Three Phase Transformer</b> .....	161
<i>M. Ebenezer, M. Rajkumar, P. Nair</i>	
<b>A Multiple Regression Model for Estimating the Moisture in Oil Impregnated Paper Insulation</b> .....	165
<i>M. Mandlik, T. Ramu</i>	
<b>Electric Field Calculation and Optimization of the UHVDC Converter Valve Shield Case</b> .....	170
<i>J. Cheng, Z. Peng, J. Wang</i>	
<b>Study on Electric Field Distribution of Cage-type Rigid Jumper for 500 kV AC Transmission Lines</b> .....	174
<i>H. Cai, Z. Peng, X. Yang</i>	
<b>Research on Insulation Characteristics of Multi-layers Dielectrics Under Polarity Reversal Based on Field-circuit Coupling Method</b> .....	178
<i>L. Zhang, Z. Peng, J. Liao</i>	
<b>Potential And Electric Field Distribution In A Ceramic Disc Insulator String With Faulty Insulators</b> .....	182
<i>S. Reddy-B, S. Naik-B, U. Kumar, L. Satish</i>	
<b>Optimization of Grading Rings for Post Insulators used in EHV/UHV Transmission System</b> .....	186
<i>B. Gunasekaran, P. Nirgude</i>	
<b>Preparation and Electrical Properties of SiO<sub>x</sub> /LDPE Nanocomposites by Mixing Organic Silica Sol and Melting LDPE Directly</b> .....	190
<i>W. Zhang, J. Mu, Y. Du, X. Wang, H. Zhao</i>	
<b>Dielectric Spectra Properties Of Low-Density Polyethylene(LDPE) / Zeolite Nanoscale Composite</b> .....	194
<i>B. Han, Z. Sun, D. Zhang, L. Li, X. Wang, Q. Lei</i>	
<b>Study On Curing Process, Surface Strength And Thermal Diffusivity Of Epoxy Nanocomposites</b> .....	198
<i>F. Xu, Z. Han, H. Zhou</i>	
<b>Preparation of Bio-nanocomposites of Chitosan/Thermoplastic starch Reinforced with Multiwalled Carbon Nanotubes</b> .....	202
<i>M. Deepthi, G. Ananthapadmanabha, P. Sampathkumaran, S. Seetharamu, V. Ganga, V. Thambi, R. Sailaja</i>	
<b>Preparation And Characterization Of Polymer Blend Nanocomposites</b> .....	206
<i>R. Singh, A. Indolia, M. Gaur</i>	
<b>Experimental Study on the Factors Determining the Partial Discharge Resistance of Polymers</b> .....	209
<i>Y. Hasegawa, I. Isamu, Y. Ohki</i>	

<b>Measured PD Pulses in Vegetable-Oil-Impregnated Insulation System .....</b>	<b>213</b>
<i>W. Ariastina, B. Phung, T. Blackburn</i>	
<b>On the Thermal Breakdown of AC Cables and Transformer Bushings .....</b>	<b>217</b>
<i>C. Reddy</i>	
<b>Modelling of a Spark Gap Switch.....</b>	<b>221</b>
<i>S. Bindu, H. Mangalvedekar, S. Umbarkar</i>	
<b>Resistivity of Pressboard Immersed in Mineral Insulation Oil.....</b>	<b>225</b>
<i>H. Li, X. Zhan, L. Zhong, Q. Yu, Y. Zhao, G. Liu, M. Shigekazu, Y. Shin</i>	
<b>Research On The Preparation of LDPE/Fe<sub>3</sub>O<sub>4</sub> Composite Films And Its Dielectrical Property .....</b>	<b>229</b>
<i>D. Zhang, B. Han, W. Song, X. Wang, J. Li, Q. Lei, Z. Sun</i>	
<b>Internal Charging in Low Density Polyethylene Irradiated by Energetic Electrons .....</b>	<b>233</b>
<i>N. Zhao, D. Min, S. Li, X. Zheng</i>	
<b>Behavior of Water Droplets on Polymer Surface.....</b>	<b>237</b>
<i>H. Nagaraj, V. Vasudev, K. Ravi, S. Aradhya</i>	
<b>Study on Multi-factor Aging Characteristics of Stator Insulation for Wind Turbine Generator.....</b>	<b>241</b>
<i>X. Ding, X. Liu, J. Zhang, T. Zhang, Y. Bai, W. Ren</i>	
<b>Comparative Performance of Silicone Rubber Insulators with IEC Stipulated Test Methods.....</b>	<b>245</b>
<i>N. Vasudev, S. Vynatheya, R. Senthilkumar</i>	
<b>Insulation Degradation In The Field Aged Mv XLPE Power Cable – A Key Concern For Utilities - Improvement Opportunities .....</b>	<b>249</b>
<i>M. Chavan, P. Shewale, D. Sahasrabudde</i>	
<b>Electric Field Distribution on Four-Bundle Conductors in 750 kV AC Substation .....</b>	<b>253</b>
<i>Z. Liao, Z. Peng, L. Zhang, S. Zhang, N. Li, J. Li</i>	
<b>Simulation Models of Transformer Hot-spot Temperature .....</b>	<b>257</b>
<i>X. Huang, L. Zhou, G. Wu, Q. Du</i>	
<b>Structure Characteristics and Dielectric Properties of PI/MMT Nanocomposite Films .....</b>	<b>261</b>
<i>J. Yu, W. Bu, F. Tian, M. Chen, Y. Kong, X. Liu, G. Li, Q. Lei</i>	
<b>DC Conduction Properties of SiO<sub>2</sub>/LDPE Nanocomposite .....</b>	<b>265</b>
<i>J. Yang, X. Wang, C. Zheng, H. Zhao, Q. Lei</i>	
<b>Study of Interface Behavior on Dielectric Properties of Epoxy-Silica Nanocomposites .....</b>	<b>269</b>
<i>M. Veena, N. Renukappa, K. Shivakumar, S. Seetharamu</i>	
<b>Prerparation, Structure And Crystallization Of Modified LDH/Polyethylene Nanocomposites .....</b>	<b>273</b>
<i>Y. Wang, L. Jiang, W. Lai, B. Cui, Z. Han</i>	
<b>Chemiluminescence as a Clear Diagnostic Tool of Polymer Oxidation.....</b>	<b>277</b>
<i>Y. Ohki, N. Hirai</i>	
<b>Fault Prediction Based On Dissolved Gas Concentration From Insulating Oil In Power Transformer Using Neural Network.....</b>	<b>281</b>
<i>K. Annapoorani, D. Umamaheswari</i>	
<b>Terahertz Spectroscopic Observation of Cross-linked Polyethylene Aged Simultaneously by Heat and Gamma-rays.....</b>	<b>285</b>
<i>M. Komatsu, Y. Ohki, M. Mizuno, K. Fukunaga</i>	
<b>Assessment Of Water Logged Cables By Very Low Frequency Tan Delta Testing Technique .....</b>	<b>289</b>
<i>B. Rao, K. Mallikarjunappa</i>	
<b>Some Aspects of Location Identification of PD Source Using AE Signals by an Iterative Method.....</b>	<b>293</b>
<i>G. Puneekar, P. Jadhav, B. Shanker-T, H. Nagamani</i>	
<b>Curing Kinetics And Dielectric Properties Of Epoxy Based Nanocomposites .....</b>	<b>297</b>
<i>H. Zhao, X. Zhang, Z. Han</i>	
<b>Development Of HDPE/Silicon Nitride Nanocomposites Using HDPE-g-Dibutyl maleate as Compatibilizer .....</b>	<b>301</b>
<i>M. Deepthi, P. Sampathkumaran, S. Seetharamu, S. Vynatheya, R. Sailaja</i>	
<b>Dielectric Nanocomposites Prepared by Gaseous Infusion .....</b>	<b>305</b>
<i>L. Hui, J. Nelson, L. Schadler, S. Prybyla, T. Vargo, W. Peifer</i>	
<b>Estimation and Computation of Transfer Function Parameters from FRA Data for Analyzing Transformer Winding Deformation and Displacements .....</b>	<b>309</b>
<i>M. Prameela, K. Yadav, G. Murthy, P. Nirgude</i>	
<b>Diagnosis and Identification of Transformer Winding Faults from Frequency Response Data by the Application of ANN Technique.....</b>	<b>313</b>
<i>M. Prameela, G. Murthy, P. Nirgude</i>	
<b>On-Site Testing of Extruded AC and DC Cables above 36 kV and up to 500 kV .....</b>	<b>317</b>
<i>A. Horeth, R. Pietsch</i>	

<b>New Approaches for Transformer Testing on Site and in the Factory based on Static Frequency Converters</b> .....	321
<i>A. Horeth</i>	
<b>Application of a New Sensor Circuit Model in the Oil Dissolved Gas Monitoring</b> .....	325
<i>Y. Zhao, X. Li, L. Zhou, G. Wu, C. Shan</i>	
<b>Electrical Aging Markers for Low-Voltage Cable Insulation Wiring of Nuclear Power Plants</b> .....	329
<i>L. Verardi, D. Fabiani, G. Montanari, V. Placek</i>	
<b>Insight Into SFRA Responses &amp; Interpretations With Regard To Insulation System Of Transformer</b> .....	333
<i>A. Yargole</i>	
<b>Influence of Surface Roughness on Hydrophobic Stability of Silicone Rubber Composites in Dynamic Drop Test</b> .....	337
<i>M. Kurimoto, M. Azman, R. Kin, Y. Murakami, M. Nagao</i>	
<b>Study of Impulse Stress Gradient on Stator Winding of HV Explosion-proof Motor</b> .....	341
<i>W. Cong, X. Liu, X. Liu, H. Li, G. Tian, S. Zhou</i>	
<b>Electrical Degradation Due to Treeing in Nanocomposite Dielectric Materials with Impurities</b> .....	345
<i>D. Pitsa, M. Danikas</i>	
<b>Design Of Optimum Toroid Configuration For The 1200KV System Solid Core Bus Post Insulator</b> .....	349
<i>M. Kanyakumari, R. Aradya, D. Chowdary, V. Ghownslay</i>	
<b>Research on the Electric Field Distribution of Multilayer Dielectric under AC-DC Composite Voltage</b> .....	353
<i>J. Cheng, Z. Peng, P. Liu</i>	
<b>Condition Assessment of in-situ Generator Transformers by Frequency Domain Analysis Using Time Domain Data</b> .....	357
<i>S. Sarkar, T. Sharma, A. Baral, B. Chatterjee, D. Dey, S. Chakravorti</i>	
<b>Denosing Neutral Current of a Power Transformer Measured During Impulse Test by Framelet Technique</b> .....	361
<i>R. Misra, A. Baral, A. Lahiri</i>	
<b>An Attempt to Investigate the Transformer Failure by using DGA and SFRA Analysis</b> .....	367
<i>S. Patil, S. Chaudhari</i>	
<b>Evaluation Of Fire Gases From Polymeric Materials</b> .....	371
<i>B. Rao, R. Arunjothi, A. Srinivasan</i>	
<b>Assessing Smoke And Fire Hazard Of Burning Electric Cables</b> .....	375
<i>B. Rao, R. Arunjothi, A. Srinivasan</i>	
<b>k-Nearest Neighbor Algorithm Based Classification and Localization of Seven Different Types of Disc-to-Disc Impulse Insulation Failures in Power Transformer</b> .....	379
<i>K. Ray, P. Rajamani, A. Mukherjee</i>	
<b>Failure Analysis Of Medium Voltage Cable Accessories During Qualification Tests</b> .....	384
<i>K. Meena, B. Rao, Thirumurthy, G. Raja</i>	
<b>Interpretation Of Recovery Voltage Mechanisms In Performance Of Solid Insulation System In Power Transformer</b> .....	388
<i>M. Aruna, N. Vasudev, K. Ravi, P. Poovamma</i>	
<b>Microscopic Study Of A Solid Insulating Material After Breakdown Under DC And AC Voltages</b> .....	393
<i>S. Mohanty, S. Ghosh, P. Panda</i>	
<b>Application Of Neural Networks For Transformer Fault Diagnosis</b> .....	397
<i>A. Venkatasami, P. Latha, K. Kasirajan</i>	
<b>Surface Flashover of the ATH/Epoxy under the Nanosecond Voltage Pulse</b> .....	401
<i>Q. Wu, Z. Peng, Y. Jiang, J. Tang, Y. Yang</i>	
<b>Effect Of Coupling Agent On PD Resistivity Of Unsaturated Polyester – Alumina Nano-Composites</b> .....	405
<i>R. Sharma, S. Swain, L. Chaudhari, S. Bhattacharya</i>	
<b>Study on Surface Modification of Basalt Fiber and Properties of BF/EP-PU Composites</b> .....	410
<i>Y. Chen, F. Li, Y. Xiao, X. Zhang, J. Sun</i>	
<b>Effect of Diffusion on Space Charge Formation in Dielectrics under Steady-state DC Conditions</b> .....	414
<i>C. Reddy</i>	
<b>Space Charge Accumulation In Epoxy Resin And Polyethylene</b> .....	420
<i>S. Das, N. Gupta</i>	
<b>Research On The Trap Energy Levels In Dielectric By Non-Isothermal PSD</b> .....	424
<i>L. He, D. Li, H. Xie, X. Wang, Q. Lei</i>	
<b>Performance of Capacitor Dielectrics during Some of the Important Tests of IEC Standards</b> .....	428
<i>H. Nagamani, T. Bhavani, S. Vaidhyanathan, S. Neelakantan, G. Rao</i>	
<b>Degradation Analysis of Insulation Used in High Power Transformers by Means of Polarization/Depolarization Currents</b> .....	432
<i>D. Gavrilă, C. Ilies</i>	

<b>The Influence of Water Content on Thermal Conductivity of Paper Used as Transformer Windings Insulation</b> .....	436
<i>R. Lopatkiewicz, Z. Nadolny, P. Przybylek</i>	
<b>Experimental Investigation of Iso-Paraffinic Oil for Application in High Voltage Power Transformers</b> .....	440
<i>U. Babuparamashiva, S. Chaudhari, A. Bhatia</i>	
<b>Physicochemical Properties Investigation in Nano Sized SiO<sub>2</sub> Filled Silicone Rubber for High Voltage Insulation Applications</b> .....	444
<i>N. Loganathan, S. Chandrasekar</i>	
<b>Impact Of Small Voids In Solid Insulating Materials</b> .....	448
<i>M. Lerchbacher, C. Sumereder, G. Lemesch, F. Ramsauer, M. Muhr</i>	
<b>Research on Dielectric Loss Characteristic of 550kV AC Resin-Impregnated Paper Oil-SF<sub>6</sub> Bushing</b> .....	452
<i>W. Hu, X. Xie, S. Zhang, Z. Xu, P. Liu, J. Cheng, Z. Peng</i>	
<b>Design Of Corona Control Rings For EHV/UHV Line Hardwares And Substations</b> .....	458
<i>S. Chatterjee, Udayakumar</i>	
<b>Grading Ring Optimization for Tension Porcelain Insulator String on Double Circuit Tension Tower in 1000 kV AC Transmission Lines</b> .....	462
<i>X. Yang, Z. Peng, J. Liao</i>	
<b>Design Of Grading Ring For 624KV Gapless Zinc Oxide Surge Arrester</b> .....	466
<i>M. Kumari, R. Shivakumara, B. Rajaiyya, S. Kondalarao</i>	
<b>Evaluation And Failure Analysis Of High-Resistance Collar Coating Of Varistor</b> .....	470
<i>A. Paul, S. Saravanan, N. Jha, J. Yesuraj, J. Nemade</i>	
<b>Novel Insulation System In Power Transformer</b> .....	474
<i>M. Aruna, N. Vasudev, K. Ravi, V. Pattanshetti</i>	
<b>Experimental Investigation of the Dielectric Strength of Hot SF<sub>6</sub></b> .....	480
<i>P. Simka, M. Seeger, T. Votteler, M. Schwinne</i>	
<b>Analysis on the Longitudinal Temperature and Computation of Ampacity of 10kV Cables in Pipes Crossing Unfavorable Thermal Regions</b> .....	484
<i>Y. Zheng, Z. Xu, G. Zhang</i>	
<b>Research On Preparation And Properties Of PI-EP Composite Material</b> .....	488
<i>Y. Chen, W. Yue, Z. Bian, Y. Fan, Y. Chen</i>	
<b>Effect Of ATH Filler Content On The Performance Of Silicone Rubber By Inclined Plane Tracking And Erosion Test Method</b> .....	492
<i>N. Vasudev, S. Ganga, R. Aradhya, B. Pai</i>	
<b>International Specifications Of Liquid Dielectrics Under Use In Power Equipment With A Special Focus On Very High Voltage Transmission Systems And High Ambient Temperature Based Tropical Countries</b> .....	496
<i>V. Pattanshetti, G. Viswanath</i>	
<b>Partial Discharge Localization in Transformers Using Monopole and Log-Spiral UHF Sensors</b> .....	500
<i>H. Singa, B. Phung, T. Blackburn</i>	
<b>Research on the Structure and Electrical Property of PI/MWNTs Ternary Hybrid Films</b> .....	504
<i>M. Zhang, Y. Ma, H. Chen, Z. Li, Q. Wu</i>	
<b>Study on Preparation and Properties of Polyimide /MWNTs Triple Hybrid Films</b> .....	508
<i>M. Zhang, H. Chen, Y. Ma, Q. Wu, C. Liu</i>	
<b>Dielectric Properties Of Poly(Methyl Methacrylate) (PMMA)/CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> Composites</b> .....	512
<i>P. Thomas, R. Ravindran, K. Varma</i>	
<b>Application Of RVM Technique To Study The Polarisation And Depolarisation Characteristics Associated With Thermal Ageing Of Epoxy Mica Composite</b> .....	516
<i>B. Rao, J. Rajan, B. Ramachandra</i>	
<b>Simulation of Pulsed Electro Acoustic Method of Space Charge Measurement</b> .....	520
<i>J. Chahal, C. Reddy</i>	
<b>Performance Of Telecommunication Modules TO 0.5µS-100kHz Ring Wave Surges</b> .....	524
<i>S. Reddy-B, U. Kumar</i>	
<b>Dielectric Characterization using Patch Antennas</b> .....	528
<i>A. Khanna, V. Velayudhan, P. Sharma, A. Sheila-Vadde</i>	
<b>Field Experiences Using Radio Frequency Scanning (RFS) to Detect Partial Discharge (PD) in Bus Duct and Metal Clad Switchgear of Electrical Generating and Transmission Substations</b> .....	532
<i>J. Acevedo</i>	
<b>Investigation of Hydrophobic and Optical Properties of HfO<sub>2</sub> Coating on Ceramic Insulator</b> .....	536
<i>V. Dave, H. Gupta, R. Chandra</i>	
<b>Poly Aryl Ether Ketone Based Novel Nano Composites As Dielectric Material For Power Equipment</b> .....	540
<i>V. Pattanshetti, G. Shashidhara</i>	

<b>Investigations on the Suitability of Indigenous Natural Esters as Liquid Dielectrics .....</b>	<b>545</b>
<i>A. Nagashree, S. Murthy, V. Champa, B. Sumangala</i>	
<b>Dielectric Properties of CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> Thick Films.....</b>	<b>549</b>
<i>H. Wang, S. Li, C. Lin, J. Li, M. Rong</i>	
<b>Microbial Growth Reduction in Tomato Juice by Pulsed Electric Field with Co-Axial Treatment Chamber.....</b>	<b>553</b>
<i>T. Sathyanathan, V. Kayalvizhi, V. Sree, R. Sundararajan</i>	
<b>Investigation Of Lightning Impulse Voltage Characteristics And Other Thermo-Physical Characteristics Of Vegetable Oils For Power Apparatus Applications .....</b>	<b>557</b>
<i>D. Divakaran, C. Kalaivanan</i>	
<b>Performance Of Insulation Systems For Low Voltage APFC Panels During Temperature Rise Test At Elevated Ambient Temperatures.....</b>	<b>561</b>
<i>V. Vaidhyathan, T. Shanker, G. Rao, H. Nagamani</i>	
<b>Root Cause Analysis Of Red Color Band Appeared On Multi Core MV XLPE Insulation.....</b>	<b>565</b>
<i>A. Majumdar</i>	
<b>FEM Approach To Design Functionally Graded Transformer Bushing .....</b>	<b>569</b>
<i>S. Ganga, M. Kanyakumari, R. Aradhya</i>	
<b>Author Index</b>	