# CERTIFICATE OF PARTICIPATION

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## **ABDUL SYAKUR**

as

## PRESENTER

on the occasion of 2017 International Conference on High Voltage Engineering and Power Systems that has been held on October 2-5, 2017 at Inna Grand Bali Beach, Bali, Indonesia



2017 F.P.S

The 72<sup>nd</sup> National Electricity Day 2017



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Study on tracking time of accelerated aging (Conference Syakur, A.ª ⊠, Hermawanª, Su	<mark>f epoxy resin insulating m</mark> ence Paper) tanto, H. <sup>b</sup> ⊠	naterial under an	tificial	Cited by 0 documents
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Abstract An insulator installation in tropical c essential role in filling insulator wet continuous ultraviolet radiation will make electrical current easy to flow.	imate and high rainfall areas could cau surface which produces contaminant ar accelerate the aging and degradation p Fhis research discussed the effects of ul	✓ Viev vise a problem. Humidit nd leakage current flow rocess on the insulator ltraviolet radiation and	w references (12) y and rain take an ing on it. Besides, surface which also fly ash addition as a	) Set citation alert > Set citation feed >
filler material toward contact angle, f epoxy resin materials. This research MPDA) mixed with silicone rubber an flowed by rainwater contaminant wit	racking time, and the average leakage was done on a laboratory scale using ep nd fly ash with filler composition variati h conductivity of 196 μS/cm, NH4Cl wi	current value of high vo poxy resin polymer mate ion of 20%, 30%, and 4 ith resistivity of 3,95 ± 0	oltage insulation of erials (DGEBA and 0%. Samples were ),05 Ωm and it also	Related documents Experimental investigation on electrical tracking of epoxy resin compound with silicon rubber
were already given ultraviolet radiation conducting several tests using Inclin 3.5 kV. The results indicated that fille affected the contact angle magnitude	on in 0, 24, 48, 72, and 96 hours. Leaka ed-Plane Tracking method (IEC standar r material composition of epoxy resin a e, the average of leakage current value,	ge current values was or rd 587 : 1984) and high and ultraviolet radiatior and the tracking time r	btained by voltage injection of completely needed. From the	Syakur, A. , Berahim, H. , Tumiran (2011) Gaodianya Jishu/High Voltage Engineering
whole parameter measured, the data was the best sample compared to RT	of before and after treatments of ultrav V22 and RTV24. © 2017 IEEE.	violet radiation showed	that RTV23 sample	Effect composition of fly ash filler on electrical properties of silicone rubber insulator material
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Contact angle (Leakage current ) (Polymer insulation) (Tracking time ) (Ultraviolet radiation)

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Leakage Current at Epoxy Resin

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2017 International Conference on High Voltage Engineering and Power Systems (ICHVEPS 2017)

Denpasar, Bali, Indonesia 2-5 October 2017



IEEE Catalog Number: ISBN: CFP17M88-POD 978-1-5386-0946-0

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IEEE Catalog Number:	CFP17M88-POD
ISBN (Print-On-Demand):	978-1-5386-0946-0
ISBN (Online):	978-1-5386-0945-3

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#### **PLENARY INVITED LECTURES**

Date

Venue

### : Tuesday, October 3<sup>rd</sup>, 2017

: Dr. Ir. Umar Khayam (ITB, Indonesia)

: Agung Room (1<sup>st</sup> Floor, Inna Grand Bali Beach Hotel)

Moderator

IN-1



09.00 – 09.30 **Ir. Amir Rosidin, MM.**  *PT. PLN (Persero)* "High Voltage Engineering and Power Systems Challenge in Indonesia Power Network"

IN-2



09.30 – 10.15 **Prof. Masayuki Hikita**  *Kyushu Institute of Technology, Japan* "High Voltage Electrical Insulation in Next Generation Power Module"

IN-3



10.45 – 11.30 **Dr. Nurhidajat Sisworahardjo** *University of Tennessee at Chattanooga, USA* "Data Analytics-Based Anomaly Detection in Smart Distribution Network"

IN-4



11.30 – 12.00 **Mr. Kazuhiro Akima**  *PT. Honda R&D Indonesia* Honda Electric Vehicle Technology

IN-5



12.00 – 12.45 **Prof. Ahmed Abu Siada**  *Curtin University, Australia* "Review of Flexible AC Transmission Systems; Enabling Technologies for Future Smart Grids"

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#### Date Venue Moderator

#### : Wednesday, October 4<sup>th</sup>, 2017

: Agung Room (1<sup>st</sup> Floor, Inna Grand Bali Beach Hotel) : Dr. Ir. Sigit Puji Santosa, MSME (ITB, Indonesia)

IN-6



08.30 – 09.15 **Dr. Muhammad Aziz** *Tokyo Institute of Technology, Japan* "Extended Utilization of Electric Vehicles in Electrical Grid Services"

IN-7



09.15 – 10.00 **Prof. Mohammad Masoum**  *Curtin University, Australia* "Coordination of Plug-In Electric Vehicle Charging in Smart Grid: Challenges and Opportunities"

IN-8



10.15 – 11.00 **Prof. Guan-Jun Zhang**  *Xi'an Jiaotong University, China* "Separation of Multiple Partial Discharge Sources in Power Transformer"

IN-9



11.00 – 11.45 **Prof. Yanuarsyah Haroen**  *Bandung Institute of Technology, Indonesia* "Past, present and future in Indonesian Public Mass Transportation. Perspective - Traction Control Systems"

IN-10



11.45 – 12.30 **Dr. Robert Saers**  *ABB Corporate Research, Sweden* "Digitalization of Electric Power System"

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Date of Conference: 2-5 Oct. 2017 INSPEC Accession Number: 17467181

Date Added to IEEE *Xplore*: 21 December DOI: 10.1109/ICHVEPS.2017.8225899 2017

ISBN Information:

Publisher: IEEE

Conference Location: Sanur, Indonesia

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Contents

#### I. Introduction

Polymer materials have been widely used in the distribution and transmission line for their good dielectric properties, light weight and compact, when compared to the porcelain or glass insulators [1]–[3]. However, polymer outdoor insulator shows degradation due to climate stresses such as ultravioligin isutoligon timois Reading per ature, humidity and other contaminants so that surface discharge, tracking, and erosion can occur, and degradation may reduce the performance. Actually, this reduction is result from chemical and physical changes taking place on the surface of polymer [4].

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<ol> <li>Introduction</li> <li>Principle of Transient Earth Voltage for PD Measurement</li> <li>Experimental Setup</li> <li>Result &amp; Discussion</li> <li>Conclusion</li> <li>Conclusion</li> <li>Figures</li> <li>References</li> <li>Citations</li> <li>Keywords</li> </ol>	Abstract: Partial Discharge (Pl voltage insulation system. PD r equipment an View more Metadata Abstract: Partial Discharge (PD) is one of insulation system. PD measure and avoid the failure. This pape Voltage (TEV) sensor. Applying placed in a metal box produces electromagnetic (EM) wave in w exciting the surface current on (TEV) as a result of current and the surface of the metal box to signals can be measured by an results revealed that each defe with larger magnitude generate PD measurements using TEV s PD magnitude, but also can ob used to estimate the type of PD	D) is one of symptom that neasurement is needed to f symptom that occur dur- ment is needed to monit er deals with PD measure a given voltage around PD. PD occurring inside vide frequency that prop- the metal wall and then p I impedance of the mater detect TEV signal repress oscilloscope to obtain p ct has own characteristic d higher of TEV signal. E sensors, can be further d tain a phase resolved PE o that occurs in the equip	to occur due to defect of to monitor the condition to monitor the condition of the condition of equi- ement by using Transi 2 to 6 kV to artificial de the metal box would agates and leaks to the producing transient ea- rial. TEV sensor is mo tenting PD inside. The artial discharge patter that differs from each Based on experimenta eveloped, not only for 0 pattern. Therefore, it ment.	on the high n of voltage ipment ent Earth efects emits e outside rth voltage unted on n, TEV n. The o other. PD I results, measuring can be	Top Organizations with Patents on Technologies Mentioned in This Article ORGANIZATION 4 ORGANIZATION 3 ORGANIZATION 2 ORGANIZATION 1
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<ol> <li>Introduction</li> <li>Methodology</li> <li>Results and Discussion</li> <li>Conclusions</li> <li>Authors</li> <li>Figures</li> </ol>	Abstract: Sulphur hexafluorid electrical power supply system this r View more Metadata Abstract: Sulphur hexafluoride (SF <sub>6</sub> ) g power supply system and the research work, a reliable and byproducts caused by partial defect, named as a hybrid de	de (SF 6 ) gas insulated s m and therefore needs re gas insulated switchgear refore needs regular prev effective diagnostic tech discharge (PD) occuring fect. A 0.2-MPa pressuris	GIS) is widely used in ventive maintenance. I nique was used to dete as a result of more that sed coaxial chamber p	elely used in enance. In electrical in this ect SF $_{6}$ at one rototype	Top Organizations with Patents on Technologies Mentioned in This Article ORGANIZATION 4 ORGANIZATION 3 ORGANIZATION 2 ORGANIZATION 1
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Metrics More Like This	transform infrared spectrome and C $_2$ F $_6$ for the former, an product combination together type of hybrid defect. Results be potentially more harmful th	ter are SO $_2$ , HF, SOF $_2$ d C $_3$ F $_8$ and C $_2$ F $_6$ for t with the by-product cond also show that the protru- nan the void-floating hybr	, SO $_2$ F $_2$ , SO $_2$ F $_10$ , he later. It was found t centration can be corre usion-floating particle h id.	SiF <sub>4</sub> , CO, hat the by- lated to the ybrid can	
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Gas insulated switchgear (GIS) is ar	electromechanical device that	
involves the combination of electrica	l switches, circuit breakers, fuses,	
current and capacitive voltage transf	ormers that is widely used in	
transmission and distribution of elect	trical energy [1], [2] because of its	
dimensions, high reliability and perfe	Philinke, Thomeshop ive, long	
lifespan (about 40–50 years), low ma	aintenance requirements during its	
to interrupt fault current in power sys	tem network, and also its operation	
is noiseless and well insulated again	st external interference (weather)	
[3]–[6].		
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11 12 <b>14</b> 1 <i>4</i>		
Ibrahim Musa Visa	mont Foculty of Floctrical Facility and	
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III. Proposed Method	Motodoto				ORGANIZATION 2
IV. Experiments and Validation	Abstract: Partial shading on a photovol	taic (PV) string will lead to	o PV characteristic, ex	hibiting	
IV. Conclusions	Maximum Point (GMP). Rese	methods such as P&O m archers have utilized met	tethod may not track the track the tetra t	e Global s to track	L]
Authors	the GMP. Recently Simulated Maximum Power Point Tracki	Annealing (SA) method ng (MPPT) because of its	has also been adapted s simplicity and effectiv	l for veness to	
Figures	GMP is excessively long. In the	nis paper, we combine SA	A method with a Modifi	ed INC	
References	method to improve tracking ti adaptive step size to increase To validate the performance of	me of the SA. The modifient the tracking speed and a the tracking speed and a soft the proposed algorithm	ed INC method employ accuracy of the conver , experimental verifica	/s an ntional INC. tions are	
Citations	conducted. Both results indic	ate that the proposed alg	orithm can perform as	well as SA On	
Keywords Metrics	average, the tracking time of method.	the proposed method is t	wo times shorter than	the SA	
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	K. L. Lian Electrical E	ngineering, NTUST, Taipei, Taiv	wan		
	V. Andrean Electrical E	ngineering, NTUST, Taipei, Taiv	wan		
		: <b>=</b> c	Contents		
	I. Introdu Maximum system to due to mi and non reverse b To avoid by the no bypass d voltage (I To maxim global ma	Iction ) power point tracker is an indis ) extract maximum power avails smatch issues, for example, du uniform solar irradiance, the sh iased and behave as a load, let this, bypass dio <b>8egnaireto3edrite</b> in-shaded cells within a module iodes will change the uniform c P-V) characteristics of the module ize the efficiency of the module aximum point (GMP).	spensable part in a photovoltaic able to supply the load. However ust, shading, thermal gradients, laded cells in a module become eading to the het spot problem. IncentReabling current generated a. However, the connection of current-voltage (I-V) and power- ule, resulting in multiple peaks. e, it is necessary to track the		
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Figures	the SWER lines. The system the SWER feeder and relies for data transmission and co	n comprises pole-mounted on its own independent w	I monitoring units distri vireless communication	buted along is platform	
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#### I. Introduction

It is costly to have a conventional three phase electricity supply system to service sparsely-populated rural areas or remote communities. As a solution, the single wire earth return (SWER) system was proposed by Lloyd Mandeno. Although he termed it "Earth Working Single Wire Line", it was often called "Mandeno's Clothesline" [1]. The SWER system requires only one single overhead conductor; the returning current flow through the earth stake back to the main isolation transformer [2]. Nowadays, more than 200,000 km of SWER network has been developed and installed in Australia and New Zealand for delivering power in rural areas. With the increasing demand for safe and stable operation of the network, a proper solution needs to be carried out to guarantee the stability of the SWER supply network. Currently, there is no real-time information of the SWER lines for fault detection and power quality monitoring.

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