



2015

4<sup>th</sup> ITB INTERNATIONAL GEOTHERMAL WORKSHOP

4<sup>th</sup>

## **“Strengthening the Role of Human Resources for Geothermal Development”**

PROGRAM STUDI S2  
TEKNIK PANAS BUMI ITB

Editors:  
Suryantini  
Hendro Wibowo  
Dian Darisma  
Hutra Guswinanda



# **Proceeding Book**



The 4<sup>th</sup> ITB International Geothermal Workshop, which took place between 16<sup>th</sup> and 20<sup>th</sup> March 2015 in Bandung, has managed to carry a positive message towards the worldwide geothermal industry, as was expected in this year workshop theme:

**“Strengthening the Role of Human Resources for Geothermal Development”**

## ITB Campus Map



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# **Welcoming Remark and Report from the Committee of 4<sup>th</sup> ITB International Geothermal Workshop March 16–20, 2015**

## **“Strengthening the Role of Human Resources for Geothermal Development”.**

Held on 16 – 20 March 2015 in Bandung, Indonesia, 4<sup>th</sup> ITB International Geothermal Workshop 2015 was a very successful event. Over 300 delegates attended and participated in the five day workshop, which brought together managers, geologists, engineers, experts, and students from some countries involved in all aspects of geothermal knowledge and technology.

The theme of this year’s Event was *Strengthening the Role of Human Resources for geothermal Development*, which allowed presenters and speakers to explain the latest geothermal energy issues and technologies, including exploration, engineering, environmental, and education partnership program sector. The Chairman of 4<sup>th</sup> ITB International Geothermal Workshop 2015 welcomed delegates before the Workshop was officially opened by Prof. Sri Widiyantoro, Dean of Faculty of Mining and Petroleum Engineering ITB.

For Institut Teknologi Bandung (ITB), with its Master Degree Study Program of Geothermal Technology (Prodi Teknik Panas Bumi), it is the moment to report some of the result of our ongoing collaboration either with Industries such as Star Energy, Pertamina Geothermal Energy, Supreme Energy, PT Niaga Power Indonesia and other industry, or collaboration among universities that has been supported by USAID and Star Energy Collaboration, or internal ITB Research and education that has been improved until this year.

High quality technical papers were presented with topics of geothermal industry from geochemistry, geophysics, geology, integrated exploration, utilization, social-economic, environment, international collaboration, and Education. The Workshop Proceedings, comprising 29 papers on various aspects of geothermal energy topic, were published in booth book and CD.

Overall, the event was divided into 6 main parts; pre workshop course, workshop (technical and panel session), exhibition, photo contest, field camp and field trip. The panel session attended by experts in geothermal industry to be speakers; Antoni de Wilde from Emerging Power-Philippines, Retno Setianingsih from USAID Indonesia, Triharyo Indrawan Soesilo from Supreme Energy Ltd, Majedi Hasan and Anton Wahyu Sudibyo from PEN Consulting, Dave Jenson from Green Energy Group, Amir Fauzi from PT. Geo Power Indonesia, Arief

Munandar and Dikdik Risdianto from Geological Agency, Freek D. Van Der Meer from ITC Faculty Twente University, C.A.M. van den Ende and C. Savy from KEMA, Wouter Van Leeuwen from IF Technology, Sanusi Satar from Star Energy, Aminzadeh F. and Joe Ioevenitti from USC, Udi Harmoko from Diponegoro University, Rachmat Sule, Andri D. Nugraha and Nenny Saptadji from Institut Teknologi Bandung.

Nothing would have been possible without the support of Indonesia Geothermal Association (INAGA) Chairman, Abadi Poernomo, who has been supported in the execution of this event as well and his willingness to give key note speech as an introduction to the panel discussion. Gratitude is also attributed to the Nenny Saptadji, the Steering Committee, who with her knowledge of how the Workshop have operated in the past made it a great success.

We are also glad to announce that there are some new comers from universities supported by USAID-Star Energy Collaboration. This is one of many success of our efforts in promoting geothermal energy.

**Sincerely,**



**Suryantini**  
**4<sup>th</sup> ITB International Geothermal Workshop Organizing Committee**

# DESCRIPTION

Geothermal Technology Magister Program of Institut Teknologi Bandung continued to contribute development of the geothermal industry by further enhancing the contents of the Workshop and providing an excellent setting for business interest. In this year, 4<sup>th</sup> ITB International Geothermal Workshop 2015 divided to 6 main parts; pre workshop course, workshop (technical and panel session), exhibition, photo contest, field camp and field trip from Monday, March 16 to Friday, March 20.

Visitors were mostly students and delegates from industry; PT. Pertamina Geothermal Energy, Supreme Energy, PT. Geo Power Indonesia, PEN Consulting, Emerging Power Inc, Geological Agency, Schlumberger, Green Energy, IF Technology, KEMA, Geocap, GFZ, Institut Teknologi Bandung, Universitas Indonesia, Universitas Hasanuddin, Universitas Syiah Kuala, Universitas Diponegoro, Universitas Sumatera Utara, Universitas Negeri Lampung, Universitas Pendidikan Indonesia, Universitas Negeri Manado, Universitas Padjajaran, Universitas Brawijaya, Institut Teknologi Sepuluh Nopember Surabaya, and Universitas Pembangunan Nasional "Veteran" Yogyakarta.

## 1. Pre Workshop Courses

Pre Workshop Course is a series of beginning events in IIGW. There is two parts of this event; Pre Workshop Course 1 (Application of Remote Sensing for Geothermal Exploration from ITC Twente - ITB Joint Course) and Pre Workshop Course 2 (Geothermal for Everyone from ITB Geothermal Study Program).

Pre Workshop Course 1 held on 16 to 17 March 2015 in Exploration Room, Energy Building 2nd floor, On the first day the speaker is Dr. Pikha Dhruba Shrestha and discusses about the Introduction to GIS and Remote Sensing. Pre Workshop Course 1 followed by 15 participants and lasted 10 hours. Speakers Pre Workshop Course 1 on the second day are Dr. Pikha Dhruba Shrestha; Dr. Suryantini; Dr. Asep Saepuloh; Ir. Hendro Wibowo MSc which also discusses the Application of GIS and Remote Sensing in Geothermal. Pre Workshop Course 1 second day also followed by 15 participants and lasted 10 hours. In the Pre Workshop Courses 1, each participant must bring a laptop. In addition, each participant is given a certificate and a goodie bag.

Pre Course Workshop 2 held on March 17, 2015 in IMAGE Room, Building Energy 2nd floor. Speakers at the Pre Workshop Course 2 on the first day are Dr. Suryantini, Ir. Nenny Miryani Saptadji, PhD, Ir. M. Ali aAshat, Dipl. Geothermal Tech. which discusses Geothermal for



Everyone. Pre Workshop Course 2 followed by 18 participants and lasted for 9 hours. In the Pre Workshop Course 2 each participant is given a certificate and a goodie bag. Schedule for Pre Workshop Course attached below.

**Pre Workshop Course 1**  
**Monday-Tuesday, March 16-17th 2015**

Application of Remote Sensing for Geothermal Exploration (ITC Twente – ITB Joint Course)		
Venue	Exploration Room, Geothermal Master Program, Energy Building 2 <sup>nd</sup> floor	
Day 1 : Introduction to GIS and Remote Sensing (Dr. Dhruba Pikha Shrestha)		
08.00-10.00	Introduction to Remote Sensing/GIS	ITC
10.00-10.30	Break	
10.30-11.45	Exercise	ITC
11.45-12.30	LUNCH	
12.30-13.30	RS/GIS Applications in Natural Resources and Environmental Impact Assessment	ITC
13.30-15.00	Exercise	ITC
15.00-15.30	Break	
15.30-17.30	Discussion	ITC
Day 2 : Application of GIS and Remote Sensing in Geothermal (Dr. Dhruba Pikha Shrestha; Dr. Suryantini; Dr. Asep Saepuloh; Ir. Hendro Wibowo MSc)		ITB-ITC
08.00-10.00	Introduction to Thermal Infrared Remote Sensing	ITB
10.00-10.30	Break	
10.30-11.45	Application of Radar for Structural Mapping	ITB
11.45-12.30	LUNCH	
12.30-13.30	Remote Sensing for Assessing Vegetation Stress in Thermal Areas	ITB
13.30-15.00	Spatial Analysis for Area Selection	ITB
15.00-15.30	Break	
15.30-17.30	Spatial Analysis for Well Targeting	ITB
17.30-18.00	Closing	

**Pre Workshop Course 2**  
**Tuesday, March 17th 2015**

<b>Geothermal for Everyone (ITB Geothermal Study Program)</b>	
Venue	IMAGE Room at Geothermal Study Program, Energy Building 2 <sup>nd</sup> floor
<b>Day 1 : Geothermal for Everyone</b> <i>(Dr. Suryantini, Ir. Nenny Miryani Saptadji, PhD, Ir. M. Ali Ashat, Dipl. Geothermal Tech.)</i>	
08.00-10.00	Geothermal System; Type, Worldwide Occurrence and Utilization
10.00-10.30	Coffee Break
10.30-12.00	Geothermal Manifestation and Geothermal Exploration
12.00-13.00	LUNCH
13.00-15.00	Engineering and Exploitation of Geothermal Energy
15.00-15.30	Coffee Break
15.30-17.00	Economic and Environmental Issue of Geothermal Energy Utilization







## 2. WORKSHOP

IGW Workshop 2015 lasted 2 days (18-19 March 2015) located in East Hall Institute of Technology (ITB). This workshop is divided into two parts, namely the Plenary Session and Technical Session. Plenary session is divided into four sessions, the first session discusses geothermal development in Indonesia, in the second session and discuss the potential geothermal reserves in Indonesia, the next session discusses the research collaboration between GEOCAP Netherlands and Indonesia, and the last session to discuss collaborative research and ITB USC USAID-funded by Energy Star.

Technical Sessions were held at March 19th 2015. It was held on the East Hall in three separate classes. Papers were divided into two fields: exploration and engineering. The paper that presented on technical session were about 29 papers, and 5 for reserve presentation. Participants who follow these sessions were enthusiastic, judging from the room full presentation.

Schedule of plenary sessions and technical sessions attached below.

Venue : <b>Aula Timur / East Hall</b>		
07.30-08.45 : Registration and Morning Coffee (registration continued after opening by Dean FTTM)		
Opening and Keynote Speaker (Moderator : <b>Nenny Saptadji</b> )		
09.00-09.05	Welcoming Remark from the Chairman of IGW2015	<b>Suryantini</b>
09.05-09.10	Indonesia Raya	
09.10-09.20	Opening of the IGW2015 by the Dean of Faculty	<b>Sri Widiyantoro</b> (Dean FTTM)
09.25-09.45	Keynote speaker-1 : National Energy Policy	<b>Abadi Purnomo</b> (Chairman of INAGA)
09.45-09.55	Question and Discussion	
09.55-10.15	Keynote speaker-2: Acceleration Program for HRD for Supporting Geothermal Development in Indonesia.	<b>Triharyo Indrawan Soesilo</b> (President Director of Supreme Energy Ltd.)
10.15-10.25	Question and Discussion	
<b>Plenary Session 1</b>		
<b>Challenges and Opportunity in Geothermal Development</b>		
Opening and Keynote Speaker (Moderator: <b>Sanusi Satar – Star Energy</b> )		
10.30 -11.00	Implication of New Geothermal Law to Geothermal Development in Indonesia.	<b>Majedi Hasan and Anton Wahyu Sudibyo</b> (PEN Consulting)
11.00-11.30	Challenges and Opportunity in Geothermal Energy Development in Indonesia	<b>Sanusi Satar</b> (INAGA)
11.30-12.00	Modular Well Head Power Generation- Benefits of Matching Generation to the Geothermal Drilling Program; An Alternative	<b>Dave Jenson</b> (Green Energy Group)



	Solution to Accelerate Geothermal Utilization in Indonesia	
12.00-13.00	<b>LUNCH and PRESS CONFERENCE</b> at Aula Timur A / East Hall A	
<b>Plenary Session 2</b> <b>Resource and Reserve</b>		
13.00-13.30	Global Classification of Geothermal Resources and Reserve	<b>IGA</b>
13.30-14.00	Geothermal Resources Risks and Mitigation from A Private Sector Perspective: Mindoro Geothermal Project	<b>Antonie de Wilde</b> (Emerging Power Inc.)
14.00-14.30	Classification of Indonesia Geothermal Resources and Reserve	<b>Amir Fauzi</b> (PT. Geo Power Indonesia and PT. Bio Energy Prima Indonesia)
14.30-15.00	Toward New SNI	<b>Arief Munandar, Dikdik Risdianto</b> (Geological Agency)
15.00-17.00	Discussion	Moderator <b>Nenny Saptadji</b>
17.00-17.30	Gathering	
17.30-20.00	DINNER	

Venue: <b>Aula Timur / East Hall</b>		
<b>Plenary Session 3</b> <b>GEOCAP Netherlands – Indonesia Collaboration</b> Moderator : <b>Murtiti Setiasih Muharamiah – ITC Twente</b>		
08.30-08.50	Geocap Overview, Research and Education Opportunities	<b>Freek D. van der Meer</b> (ITC Faculty Univ Twente)
08.50-09.10	Technical Paper 1 : ORC, TAG and TEG – "Technology, Applications and Risks"	<b>C.A.M. van den Ende, and C. Savy</b> (KEMA)
09.10-09.30	Technical Paper 2 : Processing Workflow for MT Exploration of A Geothermal Prospect	<b>Wouter van Leeuwen</b> <b>Guus Willemsen</b> (IF Technology)
09.30-09.50	Technical Paper 3 : Thermal Energy Estimation of The Onshore North West Java Basin	<b>Setya Drana Hari Putra</b> (ITB)
09.50-10.00	Coffee Break	
<b>Plenary Session 4</b> <b>USC-ITB Collaboration Funding by USAID-Star Energy</b> Moderator : <b>Nenny Saptadji</b>		
10.00–10.20	Industry Commitment for Geothermal Capacity Building	<b>Sanusi Satar – Star Energy</b>
10.20-10.40	Technical Paper 1 : Use of Microseismicity to Predict Permeability in Geothermal Systems	<b>Aminzadeh, F. and Lovenitti, J.</b> (USC)
10.40 – 11.00	Investing in Human Resources Capacity Development to Support Geothermal Expansion	<b>Retno Setianingsih (USAID)</b>
11.00 – 11.20	Technical Paper 2 : Calibrating Exploration Methodologies to Identify Hydrothermal and EGS Drilling Target	<b>Lovenitti, J. (USC)</b>

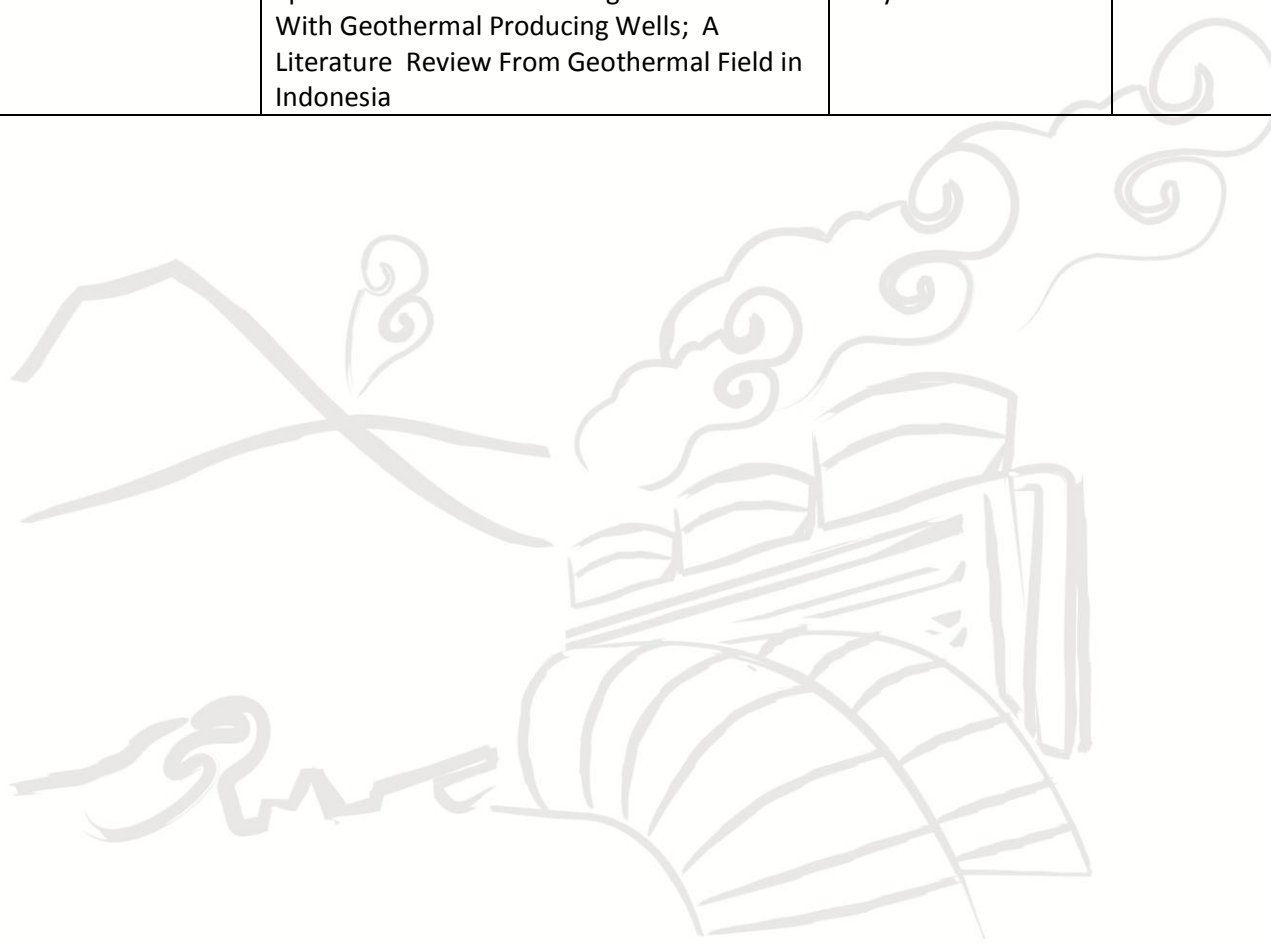
11.20-11.40	Technical Paper 3 : Microseismic Investigation in Indonesian Geothermal Field	<b>Rachmat Sule, Andri D. Nugraha</b> (ITB)
11.40-12.00	Technical Paper 4 : Resource Investigation of Low Temperature Geothermal Areas in Klepu Sub-district, Semarang	<b>Udi Harmoko</b> (Diponegoro University )
12.00-12.30	LUNCH	
12.30-14.00	<b>LIMITED EXHIBITION AND PHOTO CONTEST</b>	
14.00-16.50	<b>Parallel Technical Session 1 and 2</b> Room A: Integrated Exploration / Earth sciences Room B: Geophysics Room C: Utilization, Social-Economic, Environment, International Collaboration, Education	
16.50-17.30	<b>CLOSING CEREMONY</b> Band performance , door prize announcement, Field Trip – Field Camp announcement and preparation	

Date	Paper Code	Paper	Author	Page
<b>Integrated Exploration</b>				
19 March 2015	A01	Leapfrog Geothermal – A Comprehensive Geological Modelling Tool for the Geothermal Industry	Clare Baxter	Not available
	A02	3D Geology and Geophysical Modeling Using Leapfrog; Lesson Learned.	Angga Bakti Pratama	Not available
	A03	Development Simulation Of Lainea Geothermal Field	Lia Putriyana, Hari Soekarno	27
	A04	Integrated Data of Alteration, Geology, and Geochemistry of Bantarkawung Area; Implication to Geothermal System	Dimas Aji R. Prawiranegara, Rizal Tawakal Alya, Sigit Yuniarto, Gandi Anas N. Hakim	35
	<b>Geochemistry</b>			
	A05	Occurrence of Non-volcanic Geothermal Manifestations in Tarakan Basin, East Borneo	K.P.B.D. Sudono, A.S.O. Tampubolon and N.R. Herdianita	43
	A06	Volcanic Gasses and Unconfined Groundwater Mixing in Cibuni Area: A Preliminary Investigation	R. D. Mahantara, S. Khurniawan, F. A. Rosyid, M. Chandra, M. I. Hasani, S. Hidayat and D.E. Irawan	51
	A07	Geochemical and Geothermometry Studies on Manifestations of Showers Seven and Shower Three at Baturraden, Purwokerto, Central Java	Muhammad Abdurrozak Siamashari, Priyo Adi Nugroho, Dhevi Andhini Antikasari, Irfania Fitria Arsah, As'ad Argiansyah	55
	A08	Geochemistry Study For Identification of Seawater Intrusion Into A Geothermal System	Sitti Nur Asnin, Suryantini, Antonie de Wilde	Not available

<b>Geophysics</b>			
B09	Magnetic Data Analysis for Subsurface Structure Identification at The Geothermal Field of Way Ratai, Padang Cermin	Ratu Mifta Fadilla dan Rosita Renovita	63
B10	Audio-Magnetotelluric Investigation at The Geothermal Prospecting Area in Pariangan Tanah Datar, West Sumatra	Andriyan Saputra, Widodo and Muhammad Kholid	69
B11	The Application of Magnetotelluric Method in Geothermal Prospect Area of Mount Batur, Kintamani, Bali	Agung Bimo Listyanu, Widodo, Tony Rahardinata	77
B12	Optimizing 2D Resistivity Method to Reveal Complex Structures Beneath an Old Basaltic Volcano in West Java, Indonesia	Prihadi Sumintadireja, Diky Irawan and Hendra Grandis	85
B13	High Resolution Delay Time and Shear Wave Splitting Tomography for Reservoir Monitoring of The "RR" Geothermal Field, West Java, Indonesia Using Micro-earthquake Data	Rexha Verdhora Ry, Tania Meidiana, and Andri Dian Nugraha	89
B14	Determination of Focal Mechanism, Local Magnitude, and Coda Magnitude of Microseismic Event in "North Villy" Geothermal Field, Indonesia	Massita A. C. Putriastuti and Andri Dian Nugraha	95
B15	Microgravity Modelling for Mass Balance Monitoring of Geothermal Reservoir	Ferry Rahman Aries and Hendra Grandis	107
B16	Identifying Recharge and Discharge Zones at Geothermal System using Full Polarimetric Synthetic Aperture Radar (Polsar) Data	Deny Dwi Nurwati, Asep Saepuloh and Prihadi Sumintadireja	113
<b>Utilization</b>			
C17	Geothermal Direct Use for Breweries	Rob Kleinlugtenbelt	Not available
C18	CSR: Geothermal Energy Applications as a Coffee Drying Technology to Increase Coffee Production in Ulubelu Geothermal Field, Lampung	Taufiq, Farkhan Rafflesia and Nur Sya'bana Santoso	119
C19	Modelling of Milk Pasteurization System Using Geothermal Energy.	Ichwan A.E, Nursanty B, Ariel H.G, Jooneed Hendrarsakti	125
C20	The Evolution of Liquid Dominated Geothermal Reservoir Under Exploitation : A Review	Heru Berian	131
<b>Geology, Geochemistry</b>			
C21	Volcanotratigraphic Study Based on Topography and Remote Sensing Analysis and Its Implication to Wayang Windu Geothermal System	Betseba Br Sibarani, Evanda EPM, Dian Darisma	Not available
C22	Geochemical Analysis of Hot Spring and Hydrothermal Alteration of Geothermal Prospect at Kendalisodo, Semarang District, Central Java	Fauzu Nuriman, Yudhi Try Saepuddin and Ryan Jodi Pratama	139

	C23	Geochemistry of Hot Water and Interpretation of Permeable Zone from ASTER-GDEM and Radon Concentration in Mount Slamet, Central Java, Indonesia	Heri Nurohman, Hendra Bakti and Sri Indarto	145
	C24	Application of Geochemical Methods in Geothermal Exploration in Indonesia: A Literature Review (Part 1)	Anggita Agustin and Dasapta Erwin Irawan	151

RESERVED PAPER			
R25	Spatial Association of Geological Features With Geothermal Producing Wells; A Literature Review From Geothermal Field in Indonesia	Suryantini	163







### 3. Field Trip

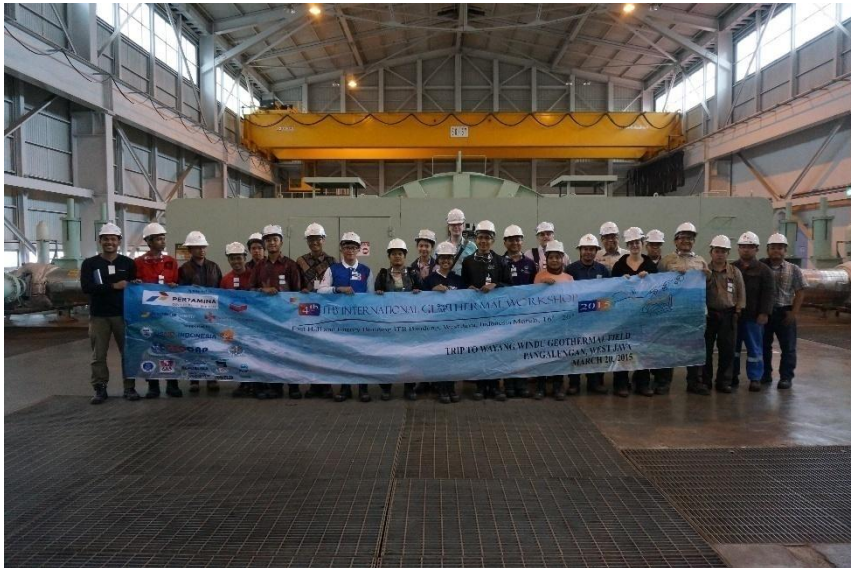
The activities carried out in accordance with the date of the implementation plan is on 20 March 2015. The total number of participants and organizers and speakers who participated in the field trip as many as 28 people. Brazing of the ITB is Mr. Arif Susanto, ST., MT which is a geology professor from the Faculty of Engineering Sciences of Earth. While the guide who also serves as speaker of the Energy Star is Mr. Ali Auza and Mr. Anton who is also a student Geothermal Engineering Master Program.

Schedule of field trip attached below

- 05:30 : Participants gathered at ITB
- 05:30 – 08:00 : Trip to Wayang Windu
- 08:00 : Participants arrive at Wayang Windu
- 08:00 – 09:00 : Introduction Wayang Windu Field by Star Energy
- 09:15 – 10:15 : Sighting several Wayang Windu Well Pad
- 10:15 – 11:30 : Visiting the production facilities
- 11:35 – 13:00 : Break
- 13:00 – 14:30 : Visiting Core Storage
- 15:00 – 16:30 : Visiting Windu Crater
- 16:30 – 19:00 : Go back to Bandung

During the activity, the participants in good health and enthusiastic. The activity began with a gathering at the main gate ITB Jl. Ganesha. Then headed to the location using two units of mini buses with a capacity of 15 people with the delay time left for about 30 minutes. Over at the location, the event was started with the presentation of safety induction, followed by an overview of Wayang Windu field of the PT. Star Energy. Initial activities began with the observation wells and surrounding facilities. The next activity in the form of the lunch break (meal and Friday prayers). After that, the activities continued with the observation in the area of plants as well as an explanation of the PT. Energy Star for each facility utilization. After observations on the plant area, followed by visiting the warehouse storage core (core storage), as long as these activities are guided by Mr. Arif Susanto, ST., MT. Since it was too late, then a visit to the crater manifestation Windu immediately canceled and getting ready to go back to Bandung.





## 4. Field Camp

The activities carried out in accordance with the date of implementation of the plan that is on 19 March 2015. Total number of participants and organizers and speakers who participated in the field trip as many as 8 people. Speaker of this event is Dr. Ir. Suryantini who is a ITB lecturer of the Department of Geological Engineering, Earth Science Engineering and Geothermal Engineering, Faculty of Mining and Petroleum Engineering. In addition, there are also 3 assistants, Mahesa, Sitti Nur Asnin, and Riostantieka who helped in the provision of material and technical maintenance of things.

Schedule of field camp attached below

### Thursday, 19th March 2015

Time	Activity
18.00-18.30	Participants gathered at ITB
18.30-19.30	Trip to lodging (Lembang)
19.30-20.30	Preparation and dinner
20.30-22.00	Lecture
22.00-selesai	Rest

### Friday, 20th March 2015

Time	Activity
06.00-07.00	Preparation and breakfast
07.00-07.30	Trip to Domas Crater
07.30-08.30	Geological and geochemical observation in Domas Crater
08.30-09.00	Trip to Ratu Crater
09.00-09.30	Geological observation in Ratu Crater
09.30-10.00	Trip to Ciater
10.00-11.30	Discussion about Ciater
11.30-12.30	Break
12.30-13.00	Return to lodging
13.00-13.30	Preparation for lecture
13.30-15.00	Lecture
15.00 - 15.30	Preparation for return to Bandung
15.30-16.30	Trip back to Bandung

During the activity, the participants in good health and enthusiastic. The activity began with a gathering in front of the East Hall. Then headed to the location using two units of car with a capacity of 6 people with a delay time left for about 30 minutes. Initial activities began with a dinner together. The next activity for the provision of materials to the participants.



After that, the activities continued break in the bedroom that has been provided. The next day, the participants went to the field, visiting the Kawah Domas for 1.5 hours. The journey continues towards Crater Queen for 1 hour. Subsequent observations conducted in Ciater for 2 hours, to determine the relationship Kawah Ratu and Domas crater with Ciater. After that, participants returned to the inn to discuss the results of observations in the field for 2 hours. Around 16:00 the event is over and the participants returned to Bandung.



## 5. PHOTO CONTEST

Photo Contest held with a series of events IIGW 2015 with theme Geothermal Energy in Indonesia. The event aims to introduce the potential of geothermal energy in Indonesia to the wider community. Photo is collected amounted to 26 photos which are then exhibited on the last day Workshop IIGW. Participants came from various backgrounds, such as students, and public agencies. Assessment carried out by a jury consisting of ITB Lecturer (Dr. Andri Subandrio) and representatives of LFM (Student Film League). The assessment is based on five aspects which include: story / mood, composition, lighting, subject / interest, and originality. Winners were 3 people and announced at the closing ceremony IIGW Workshop March 19, 2015.





## 6. MINI EXHIBITION

In this year, 4th ITB International Geothermal Workshop 2015 has mini exhibition as part of the Workshop, from March 18th to March 19th 2015 in East Hall, ITB. Mini Exhibition aims to promote activities and programs related to geothermal by relevant agencies. Mini Exhibition consists of several booths that filled by USAID, GEOCAP, PSDG, and GEOTHERMAL ITB. At each booth there are usually several posters, magazines, and banner stands associated with geothermal and seen by the visitors.



# ORGANIZING AND TECHNICAL COMMITTEE

<b>Steering Committee</b>	Nenny Miryani Saptadji and Staff of Geothermal Study Program, FTTM – ITB
<b>Chairman</b>	Suryantini
<b>Vice Chairman</b>	Muhammad Mirza Aquario
<b>Secretary General</b>	Fidya Varayesi ,Evanda Eko Putra Maris, Riostantieka Mayandari S
<b>Treasurer</b>	Fitri Oktaviani Purwaningsih, Rizki Trisna Hutami
<b>Creative Team</b>	Fuad G, Hendro H Wibowo
<b>Sponsorship, Publications &amp; Promotion</b>	Prihadi, Damar Nandwardhana, Gugun Abdurrahman, Hutra Guswinanda, Andhika Arief Rachman Akib
<b>Pre – Workshop Course</b>	M. Rachmat Sule, Rangga Aji Nugraha, Waldy Afuar, Fery Ismar D, Nurita Putri H, Sitti Nur Asnin, Mahesa Pradana, Ali Fahrurozi, Agastyo N
<b>Technical Session &amp; Planning</b>	Hendra Grandis, Nurita Putri H, Sitti Nur Asnin, Mahesa Pradana, Ali Fahrurozi, Agastyo N, Rangga Aji Nugraha, Waldy Afuar, Fery Ismar D
<b>Field Trip Kamojang &amp; Field Camp</b>	Suryantini, Betseba Br Sibarani, Dian Darisma
<b>Geothermal Photo Contest</b>	Betseba Br Sibarani, Rizki Trisna Hutami