



**GCOE HSE Overseas Base Bandung Office and its staff**

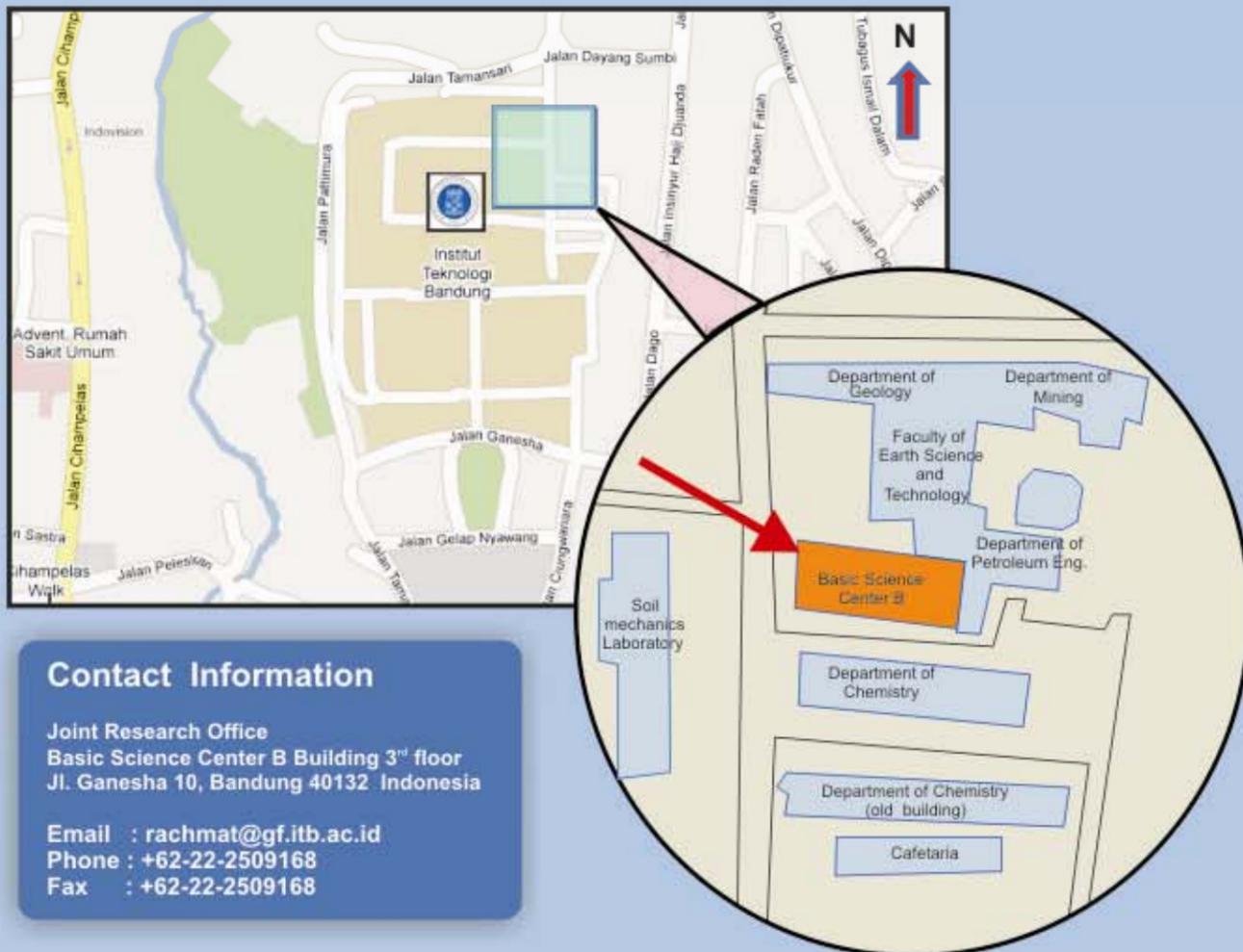


Basic Science Center B building



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**Access map**



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**Establishing the Discipline of Energy  
Security Engineering and Disaster  
Prevention in Indonesia**



**Institut Teknologi Bandung  
and  
Kyoto University**





## Researchers



Prof. Toshifumi **Matsuoka** : overseas base leader, received Ph. D. in 1995 from the University of Tokyo. In 2002 he was promoted to become a Professor of Geological Engineering Lab. Department of Civil and Earth Resources Engineering Kyoto University. During 1997-1998 he served Vice-President of SEG and President of SEG Japan from 2006 to 2008.  
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Prof. Djoko **Santoso** held doctoral degree from ITB in 1990. He is rector of ITB, 2005-2010, a Professor of Exploration Geophysics. His main interests are in geology-geophysics, time-lapse microgravity for geohazards engineering, exploration in oil and gas, and geothermal.  
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Prof. Hasanuddin Z. **Abidin** : received doctoral degree from Univ. of New Brunswick, Canada, in 1992. He is a Professor and Head of Geodesy Research Division, ITB. His research works includes the use of GPS survey method for monitoring volcano deformation, land subsidence, and integration of GPS and INSAR for deformation study.  
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Dr. Wawan Gunawan A. **Kadir** : earned doctoral degree from ITB in 1995, vice dean Faculty of Mining and Petroleum Engineering, an Associate Professor of Exploration Geophysics ITB. His main interests are micro-gravity for geotechnical engineering, exploration and exploitation of energy resources.  
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## Research Activities

### Long-term Monitoring on CO<sub>2</sub> Injection for Enhanced Oil Recovery (EOR)



Goal of research program is intended to make a significant contribution to energy systems for low carbon society. The 2008 World Energy Outlook predicts that world demand for oil will increase. Alternative energy sources cannot deliver large-scale energy supplies at present, which means that fossil fuels will continue to satisfy over 80% of demand in the decades to come. Meanwhile, burning fossil fuels is one of the major contributors to the rise of CO<sub>2</sub> in the atmosphere.

The collaborative research on Carbon Capture and Storage (CCS) among ITB, Pertamina and Kyoto University to conduct long-term monitoring process on EOR using CO<sub>2</sub> injection. Pertamina, as state oil and gas company in Indonesia, has a plan to conduct CO<sub>2</sub> injection in their oil field that can be used as pilot project for the CCS research program.

### Land subsidence and sea water intrusion in Jakarta, estimated from time lapse microgravity

Jakarta's government is not yet able to provide clean water for all people since Jakarta population is continually increasing. Hence to fill short supply of clean water, people usually drill a well to extract groundwater. However excessive extracting groundwater can causes several problems, such as land subsidence, lowering groundwater level and seawater intrusion. This makes environmental impacts and affects to human activities as well. The impact needs to be addressed at the early stage so that other environmental hazards can be avoided or reduced. In this research, accurate and repeated time-lapse microgravity measurements are necessary to clarify changes in subsurface conditions.



## General Information and History of Institut Teknologi Bandung

Institut Teknologi Bandung (ITB) was founded on March 2, 1959 by the Indonesian government as an institution of higher learning of science, technology, and visual arts, with a mission of education, research, and service to the community. ITB was named as Technische Hoogeschool te Bandung after its establishment on 1920 during Dutch Government Era.

Government Decree No. 155/2000 pertaining to the decision on ITB as legal entity has opened a new path for ITB to become autonomous. The status of autonomy implies a freedom for the institution to manage its own business in an effective and efficient way, and to be fully responsible for the planning and implementation of all program and activity, and the quality control for the attainment of its institutional objective. The institution has also freedom in deciding their measures and taking calculated risks in facing tight competition and intense pressures.

ITB is located in Bandung city, with a population of approximately one and a half million, lying in the mountainous area of West Java, at an altitude of 770 meters. ITB main campus, to the north of the town centre, covers a total area of 770,000 square meters.



## Symposium and Educational Activities

The symposium and workshop of the Global COE program "Global Center for Education and Research on Human Security Engineering for Asian Megacities" was held in Nusa Dua Bali on October 7<sup>th</sup> and 8<sup>th</sup>, 2009. The first day was used for symposium. Purposes are to disseminate recent research and also to establish a new discipline and collaboration of energy security in Indonesia. The second day was for a one-day workshop. The workshop was conducted to disseminate for Indonesian's students about human security engineering for Asian megacities.

