

COMBINATORIAL MATHEMATICS RESEARCH DIVISION

COMBINATORIAL MATHEMATICS RESEARCH DIVISION

We envision to be one of leading research divisions for combinatorics and graph theory in South East Asia region. We conduct researches on the cutting-edge problems in combinatorics and graph theory and carry out the implementation to various applied (real-world) problems. Promoting the use and the importance of mathematics in today's life is also our mission.

Our research focus on (1) graph extremal problems: degree/diameter problems in di(graphs) and Ramsey theory and its generalizations/variations, (2) various aspects of graph labelings and colorings, (3) distance-related concepts in graphs, (4) combinatorial designs and association schemes, (5) random graphs, (6) coding & cryptography, and (7) combinatorial applications in real-world problems or other fields. We actively conduct prestigious international conferences and workshops, such as IWOCA 2001, IJCCGGT 2003, IWOGGL 2004, ICGTIS 2007, CIMPA School 2009, and IWONT 2012. Graph Masters Workshop, an annual informal forum, has been regularly conducted since 2010. We have active and productive collaborations with the University of Newcastle Australia, Tohoku University Japan, Abdus Salam School of Mathematical Sciences GC University Pakistan, University of Twente Netherlands, Technical University of Kosice Slovakia, University of West Bohemia Czech Republic, and Polytechnic University of Catalonia Spain. Recently, we initiated the establishment of the Electronic Journal of Graph Theory and Applications (EJGTA).



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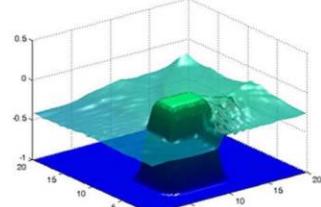
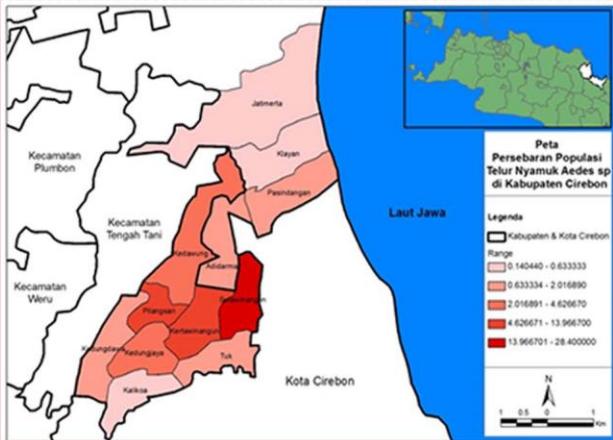
1. Edy Tri Baskoro, Hilda Assiyatun, Asmiati, I. A. Purwasih. Penentuan Bilangan Kromatik Lokasi untuk Graf Halin. *Riset Program Doktor Unggulan ITB 2012*.
2. Edy Tri Baskoro, Hilda Assiyatun, D. K. Syofyan. Bilangan Kromatik Lokasi untuk Graf Pohon dan Hasil Koronanya. *Riset Program Doktor Unggulan ITB 2012*.
3. Edy Tri Baskoro, Amrullah, D. Welyyanti. Karakterisasi Graf Pohon Menurut Bilangan Kromatik-Lokasinya. *Hibah Desentralisasi DIKTI 2012*.
4. M. Salman A. N., Djoko Supriyanto, Adiwijaya. Karakterisasi Graf Operasi Graf Lengkap Berdasarkan Indeks f-Kromatik. *Program Riset dan Inovasi KK ITB 2012*.
5. M. Salman A. N., Rinovia Simanjuntak, K. I. A. S, T. K. Maryati,N. Inayah. Karakterisasi Graf Berdasarkan H-Ajaib atau H-(a,b)-Ajaib. *Hibah Desentralisasi DIKTI 2012*.
6. Hilda Assiyatun, Edy Tri Baskoro, Asmiati. Dimensi Partisi Graf Hasil Operasi Korona. *Hibah Pascasarjana DIKTI 2012*.
7. Djoko Suprijanto. Konstruksi Kode Swa-Dual MDS dan Near MDS Atas Lapangan Hingga. *Hibah Riset KK ITB 2012*.

Publication

1. Adiwijaya, Salman A. N. M., Suprijanto D., Baskoro E. T. A characterization of the corona product of a cycle with some graphs based on its f-chromatic index. *AIP Conf. Proc.*, **1450**: 155-158. 2012.
2. Ahmad A., Baskoro E. T., Imran M. Total vertex irregularity strength of disjoint union of helm graphs. *Discussiones Mathematicae-Graph Theory*, **32(3)**: 427-434. 2012.
3. Asmiati, Baskoro E. T. Characterizing all graphs containing cycles with locating-chromatic number 3. *AIP Conf. Proc.*, **1450**: 351-357. 2012.
4. Asmiati, Baskoro E. T., Assiyatun H., Suprijanto D., Simanjuntak R., Uttunggadewa S. The locating-chromatics number of firecracker graphs. *Far East Journal of Mathematical Sciences*, **63(1)**: 11-23. 2012.
5. Astuti M., Garminia H., Salman A. N. M., Irawati. Integral complete r-uniform hypergraphs and sunflower hypergraphs. *Far East Journal of Mathematical Sciences*, **66(1)**: 87-96. 2012.
6. Astuti M., Salman A. N. M., Garminia H., Irawati. The properties of some coefficients of the characteristic and the Laplacian polynomial of a hypergraph. *Inter'l J. Contemporary Math. Sci.*, **7(21-24)**: 1029-1035. 2012.
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Mathematical Sciences, **66(2)**: 181-196. 2012.

8. Baskoro E. T., Purwasih I. A. The locating chromatic number for corona product of graphs. *Southeast Asian Journal of Sciences*, **1(1)**: 126-136. 2012.
9. Darmaji, Baskoro E. T. Further results on partition dimension of corona products. *AIP Conf. Proc.*, **1450**: 77-81. 2012.
10. Elviyenti M., Suprijanto D. An algorithm to construct new (near-) MDS or (near-) MDR self-dual codes over finite rings $Z_{-(p^m)}$. *AIP Conf. Proc.*, **1450**: 205-210. 2012.
11. Hussain M., Baskoro E. T., Ali K. On super antimagic total labeling of Harary graph. *Ars Combinatoria*, **104**: 225-233. 2012.
12. Muhshi H., Baskoro E. T. On Ramsey $(3K_2, P_3)$ -minimal graphs. *AIP Conf. Proc.*, **1450**: 110-117. 2012.
13. Purwasih I. A., Baskoro E. T. The Locating Chromatic Number of Certain Halin Graphs. *AIP Conf. Proc.*, **1450**: 342-345. 2012.
14. Roswitha M., Baskoro E. T. H-magic coverings on some classes of graphs. *AIP Conf. Proc.*, **1450**: 135-138. 2012.
15. Saputro S. W., Suprijanto D., Baskoro E. T., Salman A. N. M. The metric dimension of a graph composition products with star. *J. Indones. Math. Soc.*, **18(2)**: 85-92. 2012.
16. Syafrizal Sy, Baskoro E. T. A lower bound of the size multipartite Ramsey number $m_j(P_n, K_{j,b})$. *AIP Conf. Proc.*, **1450**: 259-261. 2012.
17. Tatanto D., Baskoro E. T. On Ramsey $(2K_2, 2P_n)$ -Minimal Graphs. *AIP Conf. Proc.*, **1450**: 90-95. 2012.
18. Tilukay M. I., Salman A. N. M., Elviyenti M. On super d-face antimagic total labelings of the corona product of a tree with r copies of a path. *AIP Conf. Proc.*, **1450**: 218-221. 2012.



INDUSTRIAL AND FINANCIAL MATHEMATICS RESEARCH DIVISION



INDUSTRIAL AND FINANCIAL MATHEMATICS RESEARCH DIVISION

We focus on mathematical modeling and simulation of problems that are arisen not only from mathematics itself, but also from industry. We develop an active and strong network between mathematicians and users of mathematics in solving real problems through mathematical modeling. We provide mathematical and numerical courses on finance, optimization and control theory, fluid dynamics, and mathematical biology that are offered to any graduate and undergraduate students of ITB. Workshops related to certain topics in applied mathematics and industrial problems through IMW (Industrial Mathematics Week) are held regularly. We are actively involved in developing interdisciplinary networks between mathematician and other professionals or scientists in solving real-world problems using mathematical modeling. Several linkages have been developed for many years with our partner institutions. For instance, the group has collaborated intensively with Research Consortia OPPINET (Optimization on Oil & Gas Pipeline Network) and FinanMOS (Financial Modeling, Optimization, and Simulation). Both research consortia are conducted by PPMS (Center for Mathematical Modeling and Simulation) ITB.



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| 9. Leo Harry Wiryanto | |
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| 13. Novriana Sumarti | |
| 14. Nuning Nuraini | |
| 15. Rieske Hadianti | |
| 16. Dila Puspita | |

Grants

1. Leo Harry Wiryanto. Model perambatan gelombang di atas gundukan. *Hibah Riset dan Inovasi KK ITB 2012.*
2. Sri Redjeki Pudjaprasetya. Pengaruh refleksi dan dispersi pada perambatan gelombang tsunami. *Hibah Riset dan Inovasi KK ITB 2012.*
3. Sri Redjeki Pudjaprasetya, Ikha Magdalena. Efektifitas dan dampak berbagai bentuk pemecah gelombang. *Hibah PDU Batch II 2012.*

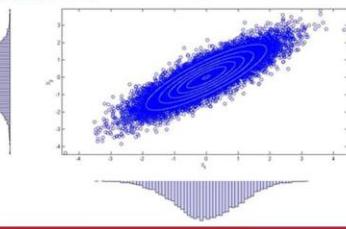
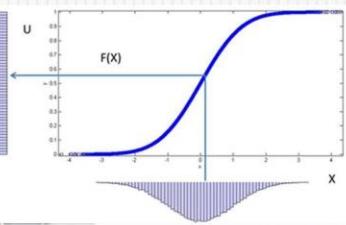
4. Sri Redjeki Pudjaprasetya, Novry Erwina. Conserved Numerical Modeling for nearshore hydrodynamic. *Hibah PDU Batch III* 2012.
5. Roberd Saragih. Mereduksi Orde model sistem berdimensi takhingga yang tidak stabil dengan menggunakan perturbasi singular. *Hibah Riset dan Inovasi KK ITB* 2012.
6. Roberd Saragih. Sistem kontrol berorde minimum pada sistem bilinear yang mempertahankan performansi lup tertutup. *Hibah Riset Desentralisasi DIKTI* 2012.
7. Roberd Saragih, Dewi Handayani. Developing of Stochastic Bilinear Control in Population Dynamic. *Hibah PDU Batch III* 2012.
8. Edy Soewono. Pengendalian Demam Berdarah dengan kontrol optimum di wilayah endemik dengan mobilitas tinggi. *Hibah Riset dan Inovasi KK ITB* 2012.
9. S. W. Indrianto. Estimasi basic reproductive ratio RO untuk wilayah endemis dengue. *Hibah Desentralisasi DIKTI* 2012.
10. Edy Soewono. Optimal Control in Disease Transmission. *Kerjasama Luarnegei dan Publikasi Internasional* 2012.
11. Edy Soewono, Meta Kalista. *Hibah PDU Batch III* 2012.
12. Nuning Nuraini. Model penyebaran penyakit yang diakibatkan oleh nyamuk dengan pengaruh dinamika curah hujan. *Hibah Riset dan Inovasi KK ITB* 2012.
13. Nuning Nuraini. Model dan Simulasi peta endemik Demam berdarah dalam kaitannya dengan Dinamika Curah Hujan di Indonesia 2012.
14. Novriana Sumarti, Edy Soewono. Promoting best practices on Mathematical Modelling Course in higher education curriculum of APEC economies HRD 06/2011A. *APEC* 2012.

Publication

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2. Yulianti K., Gunawan A. Y. An asymptotic study of the steady state model of oxygen diffusion in tissue regions. *ITB Journal of Science*, **44A(2)**: 164-178. 2012.
3. Nuryaman A., Gunawan A. Y., Sidarto K. A., Budhi Y. W. A Singular Perturbation Problem for Steady State Conversion of Methane Oxidation in Reverse Flow Reactor. *ITB Journal of Science*, **44A(3)** (In press). 2012.
4. Windarto, Gunawan A. Y., Soewono E., Sukarno P. Modelling of formation damage due to mud filtrate invasion in a radial flow system. *Journal of Petroleum Science and Engineering* 100, 99-105. 2012.
5. Darwis S., Gunawan A. Y., Permadi A. K., Fitriyati N., Reserve Estimation. *Advances and Applications in Statistics*, **28(1)**: 45-54. 2012.
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23. Mahardhika T., Saragih R., Trilaksono B. R. Reduksi sistem bilinear dengan menggunakan Algoritma Genetika. *Prosiding Konferensi Nasional Matematika XVI*. 2012.
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28. Suakanto S., Supangkat S. H., Suhardi, Saragih R., Nugraha I. G. B. B. Building crawler engine on cloud computing infrastructure. *Proceedings-International Conference on Cloud Computing and Social Networking 2012: Cloud Computing and Social Networking for Smart and Productive Society*. 2012.
29. Sitompul P., Gunawan H., Soeharyadi Y., Gunawan A. Y. An Energy Investigation of Reaction Diffusion Equations. *AIP Conference Proceedings*, **1450**: 363-367. 2012.





STATISTICS RESEARCH DIVISION



STATISTICS RESEARCH DIVISION

Statistical Analysis can be described as a study of sample spaces which is based on either field or σ -algebra. The determination of probability measure is constructed by a certain field or σ -algebra. At ITB, Statistics Research Division put emphasis towards the applied side of Probability Theory and Mathematical-Statistics. Some recent research include topics in space-time analysis, copula, hidden-Markov models, financial time series, reliability process, statistical process control, statistical inverse problems, general insurance, bio-informatics, geo-statistics, warranty. In the past and at present, some members of the Statistics Research Division had and have (research) collaborations with The Insurance Bureau, Indonesia Ministry of Finance; financial institutions and insurance industries. The Statistics Research Division also conduct workshops, including training for (statistics) laboratory assistants in order to improve their knowledge and skill in Data Analysis. Two workshops on Data Analysis (WDA) and Dependency Variables (WDV) will be held annually in the future. Another future program is Undergraduate Student Statistics Competition (USSC).



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Grants

Agus Y. Gunawan, Sutawanir Darwis. Pengembangan Metode Bayesian pada Simulasi Reservoir. *Hasil Penelitian Riset dan Inovasi KK 2012.*

Publications

1. Andriychuk M.I., Indratno S.W., Ramm A.G. Electromagnetic wave scattering by a small impedance particle: Theory and modeling. *Optics Communications.* 2012.
2. Mukhaiyar U., Pasaribu U. S. A New Procedure of Generalized STAR Modeling using IAcM Approach. *ITB Journal of Science.* **44 A (2).** 2012.
3. Nurhayat, N., Pasaribu, U.S., Neswan, O. Application of Generalized Space-Time Autoregressive Model on GDP Data in West European Countries. *Journal of Probability and Statistics.* 2012.





ELECTRONIC MATERIALS PHYSICS RESEARCH DIVISION



ELECTRONIC MATERIALS PHYSICS RESEARCH DIVISION

The scopes of Physics for Electronic Material Research Group research activities are growthand characterization of electronic materials, theoretical/numerical studies of electronic material properties, and its application for electronic and optoelectronic devices. Research areas that we are interested in are divided into four major groups that are of nano semiconductors and other nanomaterials, compound semiconductors, superconductors and oxides, and theory and simulations. The study of nano semiconductor is focused on the growth and characterization of nano silicon, carbon and its application to some electronic and optoelectronic devices such as solar cell, light emitting diode, and color sensor. Other nanomaterials are also synthesized using several physical method such as spray pyrolysis, sol gel, etc. Their applications in industry are also applied such as clarifier, purifier, Li-ion battery. In another field, the study of compound Semiconductor is focused to III-V compound semiconductor and their related materials, such as gallium, nitrate, and antimony based compound semiconductors. These deposited materials have been applied to various electronic devices such as ultraviolet and infrared detectors, gas sensor, laser diode, FET, and MOSFET. The study of superconductor and oxides are focused to superconductors, ferroelectric, pyroelectric and high dielectric materials investigation. Research on superconductor is directed to thin film high critical temperature superconductor and their application in electronic devices. The solid electrolyte fuel cell and supercapacitor application have also been studied. While, the study of theoretical and simulation is specialized to investigate the electronic material properties through theoretical analysis using computer simulation and its probability usage to experimental process of electronic devices.



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1. Khairurrijal. Pengembangan Instrumen Otomatik Triksial untuk Uji Kuat Geser Tanah. *Hibah Desentralisasi Dikti 2012.*
2. Mikrajudin A. Peningkatan Efisiensi Sel Surya Ukuran Besar Menggunakan Jembatan Logam Ukuran Nanometer. *Hibah Desentralisasi Dikti 2012.*
3. Euis Sustini. Studi Penumbuhan IZO (Indium Zinc Oxide) denganTeknik Spray Pyrolysis Sebagai Material Transparent Conducting Oxide (TCO) Pada Sel Surya. *Hibah Riset dan Inovasi KK 2012.*
4. Fery Iskandar. Fabrikasi BCNOSiO₂ Nanokomposit Phoshor untuk Aplikasi Lampu LED Putih. *Hibah Riset dan Inovasi KK 2012.*
5. Pepen Arifin. Studi Injeksi dan Transport Spin Elektron Dalam Struktur TiO₂ : Co/TiO₂/TiO₂ : Co. *Hibah Riset dan Inovasi KK 2012.*
6. Khairurrijal. Sintesis Nanopartikel Metal Oksida yang Homogen Sebagai katalis untuk Menurunkan Viskositas Minyak Berat. *Hibah Riset dan Inovasi KK 2012.*
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THEORETICAL HIGH ENERGY PHYSICS AND INSTRUMENTATION RESEARCH DIVISION



THEORETICAL HIGH ENERGY PHYSICS AND INSTRUMENTATION RESEARCH DIVISION

Research activities in the Theoretical High Energy Physics and Instrumentation Division are grouped into two main streams of research: researches in theoretical aspects of fundamental physics and researches in physical instrumentation. The first research stream concentrates on theoretical high energy physics, the frontier of physics in understanding of fundamental nature. The topics considered by members of the group include, among others, Einstein general relativity and other models of gravity, quantum field and gauge theory, topological gauge theory, supersymmetry, supergravity, superstring and brane world as well as analytical and numerical studies in integrable and dynamical systems. The second research stream weighs on the development of sensors and systems of instrumentation. This kind of research is very important in many aspects, including supporting research experiments in various research areas. The group develops, among others, sensors, imaging and signal processing, bioinstrumentation and also instrumentation for research and education purposes.



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13. Agus Suroso	M.Si (ITB)

Grants

- Agus Suroso. Stabilitas Model Universal Extra Dimension Lima Dimensi Dengan Kopling Derivatif Medan Skalar. *Program Riset Peningkatan Kapasitas IT 2012.*
- Bobby E. Gunara. Geometri Ruang Waktu Stasioner Berdimensi Tinggi. *Riset Inovasi dan KK ITB 2012.*
- Bobby E. Gunara. Rigit Limit Dari Solusi BPS Dalam N=2 Supergravitasi Terkopel Multiplet Materi. *Program Riset Hibah Kompetensi DIKTI 2012.*
- Suprijadi. Robot Pengintai Berbasis Citra Stereovision. *Riset Inovasi dan KK ITB 2012.*
- Triyanta. Radiasi Hawking Dari Lubang Hitam Dengan Metrik Reissner-Nordstrom-Vaidya. *Riset Inovasi dan KK ITB 2012.*
- Triyanta. Hamburan Medan Materi oleh Medan Gravitasi dalam Teleparallel Gravity. *Program Doktor Unggulan IMHERE 2012.*
- Mitra Djamal. Disain dan Pengembangan Sensor Momen Gaya Berbasis Koil Datar. *Riset Inovasi dan KK ITB 2012.*
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PHYSICS OF MAGNETISM AND PHOTONICS RESEARCH DIVISION



PHYSICS OF MAGNETISM AND PHOTONICS RESEARCH DIVISION

This group consists of two subgroups with fairly different research topics. Magnetic subgroup deals with magnetic, thermopower, dilute magnetic semiconductor, and strongly correlated electron system. Whereas, photonics subgroup focuses on theoretical and numerical study of periodic system and photonic crystal-based devices as well as experimental study of organic-based optical laser, amplifier, and nonlinear optical materials as well. Researches in photonic material and technology are focused on the development of photonic and nonlinear optical materials, waveguide based optical periodic systems, light emitting sources for applications in telecommunication/information technology as well as optical sensors. Meanwhile, researches in magnetic materials and technology are focused on the development of superconductors, dilute magnetic semiconductors (DMS), transition metal oxides for applications in frictionless magnetic bearing, superconducting magnetic energy storage (SMES), fault current limiter, spintronics and thermoelectric power source. Our research is intertwined between theories, experiments and modeling by emphasizing analyses of experimental results based on theoretical model as well as computational and simulation results.



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Grants

1. Alexander A. Iskandar. Kristal Fotonik dengan Sistem Hibrid Metal-Dielektrik. *Hibah Desentralisasi DIKTI 2012*.
2. Alexander A. Iskandar. Pita Fotonik Terlarang Sempurna dari Struktur Periodik 2 Dimensi. *Program Riset dan Inovasi ITB 2012*.
3. Agung Nugroho. Studi Interaksi Magnetik Jangkauan Panjang dalam Senyawa Hibrida berdasarkan Pengukuran Dinamika Spin. *Hibah Desentralisasi DIKTI 2012*.
4. Rahmat Hidayat. Pengembangan Sel Surya Tersensitisasi-Dye Bentuk Padat Untuk Mengatasi Masalah Kebocoran Elektrolit Dalam Bentuk Konvensionalnya. *Hibah Desentralisasi DIKTI 2012*.
5. Rahmat Hidayat. Studi Fabrikasi Mikrokanal Dari Polimer Hibrid untuk Mikrochip Optik Sensor Biokimia. *Program Riset dan Inovasi ITB 2012*.
6. Inge M. Sutjahja. Uji Efek Hall pada Bahan Thermoelektrik Berbasis Bismuth. *Program Riset dan Inovasi ITB 2012*.

Publication

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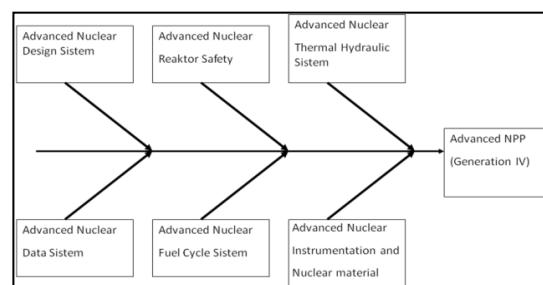


NUCLEAR PHYSICS AND BIOPHYSICS RESEARCH DIVISION



NUCLEAR PHYSICS AND BIOPHYSICS RESEARCH DIVISION

Nuclear Physics and Biophysics research division consists of two sub-division, namely Nuclear Physics sub-division and Biophysics sub-division. Nuclear Physics sub-division mainly studies several aspects of nuclear physics and its applications for research and development of the advanced nuclear power plants, especially Generation IV reactors. Generation IV reactors have particular characteristics, such as inherent safety, highly economic, nuclear waste burning capability, and ability to utilize the natural nuclear fuel effectively and efficient. Roadmap of Nuclear Physics sub-research division can be summarized in the following diagram.



Biophysics sub-division studies the physical processes in bio-system (molecule, cell, and organ) using several quantitative methods and measurements. Main research topics of this sub-research division are: molecular biophysics, membrane biophysics, radiation biophysics, and medical physics.



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Grants

1. Zaki Su'ud. Optimasi Disain Reaktor Kecil dan Menengah Moduler Berumur Panjang dengan Uranium Alam Sebagai Input Siklus. *Hibah Bersaing Dikti 2012*.
2. Sparisoma Viridi. Pemodelan Vibrasi Lempeng yang Memiliki Resonansi Internal Jamak dengan Menggunakan Dinamika Molekuler Granular. *Hibah Desentralisasi Dikti 2012*.
3. Abdul Waris. Safety Analysis of Direct Recycling of Nuclear Spent Fuel in Light Water Reactor (LWR). *Hibah Asahi Glass Foundation 2012*.
4. Rizal Kurniadi. Aproksimasi Polinomial pada Deskripsi Neck Rupture Model serta Implementasinya terhadap Penentuan Besaran-besaran Fisis Nuclear Elongation. *Hibah Riset dan Inovasi KK 2012*.
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6. Sparisoma Viridi. Pendekatan Dinamika Molekuler pada Reaksi Fisi Model Tetes Cairan. *Hibah Riset dan Inovasi KK 2012*.
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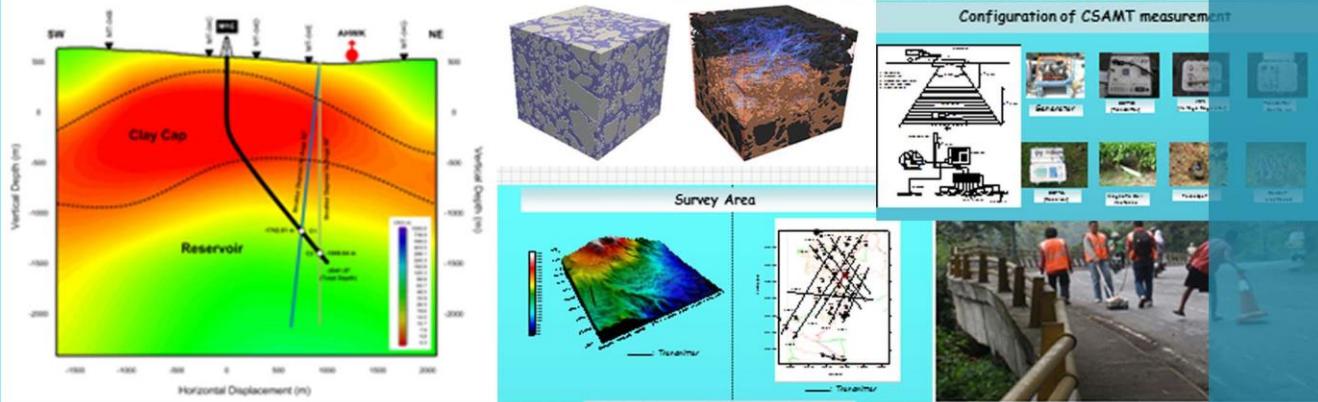
8. Zaki Su'ud. Studi Pendahuluan Analisa Kecelakaan Fukushima dan Pengembangan Reaktor Berpendingin Air yang Memiliki Kemampuan Inherent Safety. *Hibah Riset dan Inovasi KK* 2012.
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PHYSICS OF EARTH AND COMPLEX SYSTEMS RESEARCH DIVISION

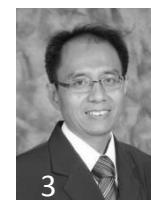


PHYSICS OF EARTH AND COMPLEX SYSTEMS RESEARCH DIVISION

The Physics of Earth and Complex Systems Division at ITB concern on complexity of the physical system and its response. By imposing the central paradigm namely complex system to the physical concepts, common tools such as numerical methods, expert system and symbolic manipulation, nonlinearity and robust prediction, as well as fuzzy logic and artificial neural network are applied to solve the related problems.

Recently, the main research activities focused on the two main issues concerning the national energy survival and mitigation of the natural disaster. Those include electromagnetic technology for exploration, fluid dynamics and rock physics, as well as seismicity.

An international conference with the theme “Modeling and Inversion in Earth and Complex Systems” is being held on July this year. Reputable invited speakers on the related topic are joining the conference.



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Grants

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2. Doddy Sutarno. Pemodelan Elemen Hingga Respon Magnetotelurik Berbasis Elemen Tepi. *Riset dan Inovasi KK 2012*.
3. Doddy Sutarno. Pengembangan metoda pemantauan aktivitas gunungapi berdasarkan pada sifat listrik dan magnetik. *Hibah bersaing 2012*.
4. Fourier D. E. Latief. Study of Rock Pore Shape Using Fourier Descriptor Analysis (Kajian Bentuk Pori Batuan Menggunakan Analisis Fourier Descriptor). *The Asahi Glass Foundation Overseas Research Grants 2012*.
5. Fourier D. E. Latief. Pemodelan dan Rekonstruksi Batuan Pasir dari Berbagai Daerah di Indonesia Menggunakan Metode Berbasis Buliran. *Riset Inovasi KK-ITB 2012*.
6. Umar Fauzi. Pemodelan dan Karakterisasi Batuan Pasir Berpengotor Lempung. *Hibah Desentralisasi Dikti 2012*.

7. Umar Fauzi. Pemodelan Sedimentasi Butiran 3D di Bawah Pengaruh Gravitasi dengan Menggunakan Dinamika Molekular. *Hibah Riset Inovasi KK-ITB 2012*.

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8. Latief F. D. E., Fauzi U. Modeling and Characterization of The Computer Model of Laminated Granular Rocks, 2011. *Proceedings of International Conference on Physics and Its Applications*. 2012.
9. Sutarno D. Development of CSAMT Impedance Modeling and Its Estimation. *The 2nd Asian Physics Symposium (APS)*. 2012.
10. Irayani Z., Fauzi U., Latief F. D. E., Atmoko H. Microstructure Characterization of Reservoir Sandstone Using X-Ray Microtomography. *PROCEEDINGS PIT HAGI 2012, 37th HAGI Annual Convention & Exhibition*. 2012.
11. Fauzi U., Annisa, Latief F. D. E. Effective Permeability Of Layering Simple Grain Packings. *PROCEEDINGS PIT HAGI 2012, 37th HAGI Annual Convention & Exhibition*. 2012.
12. Latief F. D. E., Irayani Z., Fauzi U. Digital Characterization of Loose Sandstone Using Image Analysis and Simulation of Fluid Flow. *PROCEEDINGS PIT HAGI 2012, 37th HAGI Annual Convention & Exhibition*. 2012.
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