

National Conference on Earth Resources Management

ERE 2013

Proceedings of the 7th Annual Conference



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7th National Conference

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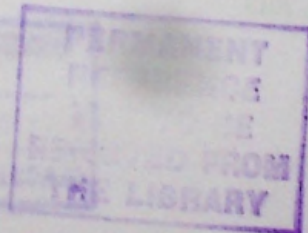
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WELCOME

It was with great pleasure I undertook the responsibility of coordinating the activities leading to the 7th the Annual Conference under the theme "National Conference on Earth Resources Management" as the coordinator. The conference is no doubt the greatest annual academic event of the Department of Earth Resources Engineering of the University of Moratuwa. I consider it an honor to play the pivot role in organizing activities leading to this great event, networking with a large number of organizations and individuals.

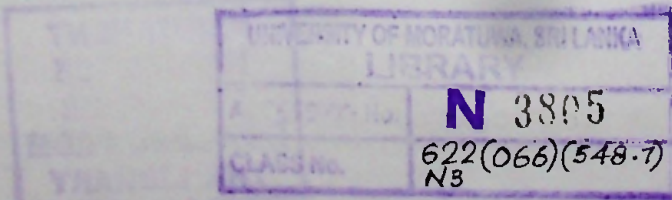
The event brings together many academics, students, industry leaders, alumni and well wishers and is graced by the vice chancellor, Professor C. B. Dissanaiké, the key-note speaker, an academic colossus in the field of geology in Sri Lanka and deans of faculties and senior officials of the university. We are privileged to listen to the key-note address delivered by Professor Dissanaiké.

The forum provides an ideal opportunity for the student to mix along with the senior industry professionals and industrialists and learn firsthand the new trends of development in the industry and in academia elsewhere and, sharpen ones skills to suit the changing circumstances. In an informal setting the academic will also have a chance to feel the pulse of the industry and exchange views which will help guide future research.

I hope that the theme is an inspiration to the young professionals to rethink their future role as there is still a lot to be done to tap the vast potential of industrial minerals in the country and accordingly plan their future and make themselves ready to undertake the future management of country's mineral resources raising the stature of the industry to greater heights.

I sincerely thank all the academic colleagues for the valuable advice offered, reviewers, non-academic staff members and the student body effectively fulfilling the individual tasks undertaken to make the event a success. This event would not have been possible without the financial assistance of the university and our sponsors.

Eng. P. V. A. Hemalal
Senior lecturer - Conference Coordinator
ERE 2013
05th June, 2013



MESSAGE FROM THE HEAD OF THE DEPARTMENT

It is with great pleasure that I send this message to the proceedings of ERE 2013 - 7th National Annual Conference on "Earth Resources Management". The Annual Conference is a land-mark event of the department where the present undergraduates, Alumni and related professionals get-together and actively take part in presenting their new findings for constructive discussion, leading the way for earth resources and mining engineering applications of those findings for betterment of the trade, industry and standards of public life. It is so precious a moment for us because aside from the fact that this function underlines our department's successful forty years in its realm of imparting education, research, this dais is also going to witness the showcasing of the performance of our undergraduates before you. It provides a great chance to the undergraduates to mix and interact with all the stake holders, industry leaders, academics of diverse disciplines and exchange views, share knowledge to achieve synergies in progress.

Your presence is an inspiration to the young researchers who are opening up their talents before you to achieve greater heights. I hope that the theme is timely and would inspire you to innovate new products, develop new technologies and processes in the broad field of earth resources engineering.

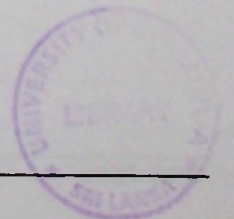
I wish to offer my gratitude to all those who helped me in organizing and steering this event to a successful completion. This gathering would not have been possible without the highly-valued and cordial assistance of our sponsors.

Dr. A.M.K.B.Abeysinghe

Head of the Department

ERE 2013

05th June 2013



CONFERENCE PROGRAM

0830 - 0900 Hrs Registration

Opening Ceremony

0900 - 0910 Hrs Traditional Lighting of the Oil Lamp and Playing the National Anthem.

0910 - 0920 Hrs Welcome address by the Head, Department of Earth Resources Engineering, University of Moratuwa.

0920 - 0930 Hrs Address by the Dean, Faculty of Engineering, University of Moratuwa.

0930 - 0940 Hrs Address by the Vice Chancellor, University of Moratuwa.

0940 - 1000 Hrs Keynote Address -Professor Emeritus, University of Peradeniya and Director, Institute of Fundamental Studies, Kandy

1000 - 1025 Hrs Sponsor Presentations

1025 - 1045 Hrs MORNING TEA

Technical Sessions

1045 - 1230 Hrs Session I - Minerals & Innovations - Chair Person - Dr.Nishantha Attanayake, Dean - Faculty of Science and Technology, Uva Wellassa University and President of the Geological Society of Sri

- ✓ 1. Design of a Low Cost Magnetic Separator for Local Beach Sand Separation. Boralugoda BPD, Udowita, K Sayanthan UGKPB, and * Rohitha LPS.
- ✓ 2. Finding a New Sampling Method and Studying its Characteristics with respect to Existing Sampling Methods. Kumarasinghe KJMD, Nanayakkara SS, Yapa YHPSM, *Rohitha LPS.
- ✓ 3. Designing and Evaluating a Casing Program for Petroleum Wellbores. Wijesinghe KADR, Hewavitharana TD, Mahsoom MSM, * Wickrama MADMG, Senadhira AMADM, Ratnayake NP.
- ✓ 4. Digital Image Processing Technique for Particle Size, Shape and Mineralogical, Textural Analysis. Siriwardana MUVA, Deshapriya NL, Abeysinghe AMKB, Weerawarnakula S and *Ranjith Premasiri

5. Identification of Suitable Garnet-rich Metamorphic Rocks for recovery of garnet sand and Development of a Methodology for Manufactured Garnet Sand. Samarakoon SMCT, Thanayamwatte DMPB, Amarasooriya YS, Abeysinghe AMKB*, Weerawarnakula S and Premasiri HMR
6. Distribution of Graphite Mineralization in the South-West of Sri Lanka and Suitable Locations for Mining. Batagalla YMAS, Senewimala EH, Rajapaksha PV, Weerawarnakula S, *Premasiri HMR and *Abeysinghe AMKB.
7. In Search of Future Construction Material-Recycled Aggregates for Concrete Production. Premasiri ESY, Kariapper ABY, Abeysinghe AMGGMB and Karunaratne S

1230- 1315 Hrs

LUNCH

1315 - 1430 Hrs

Session II-Mining and Rock Blasting - Chair Person - General Manager - Nimal Enterprises, Director, Lanka Phosphate Ltd(State Company)

1. Optimization of Field Parameters of Non-Explosive Demolition Agent. Silva DWGSL, Wikramage KMJP, Vithanage KS, Hemalal PVA and *Dharmaratne PGR.
2. Performance Evaluation of Water-gel-Emulsion Explosives and Comparison with Dynamites in Sri lankan Mining/Quarrying Practice. Kumarage PI, Edirisuriya EMTG, Wanniarachchi AM, *Hemalal PVA and Dharmaratne PGR
3. Mine Cost Control through Effective Mine Drainage at Bogala Mines-Phase-1 Uddika JI, Samarakkody IC, Thanansayan G, Harinth RR and *Prof. Dharmaratne PGR, Hemalal PVA.
4. Economic Feasibility of Copper extraction from Seruwila Copper-Magnetite Deposit. Abinav R, Chamara HAKM, Dinojan J, Sampath HKT, Dr.Dissanayake DMDOK.

- ✓ 5. Development of an Algorithm to Find the Optimum Dredging Region for Short Term Scheduling * Fernando JMMP, Cooray TMJA and Dissanayake DMDOK (Guest Presentation by, Mining Engineer-MineMap Pty. Ltd., Colombo)

1435 - 1520 Hrs

Session III—Geo-Techniques and Environment - Mr. Jayadeva De Silva - Management Consultant.

- ✓ 1. Modeling of Pollutant Removal Rates in Construction Wetlands under Varying Hydraulic Loading rates. Udukumburage RS, Ariyasena MADN, Rupasinghe GGMBMB and * Karunarathne S.
- ✓ 2. Use of Block-punch and Point-load Tests to Predict the Compressive Strength of Gneissic Rocks; with Particular Reference to the Size Effect. Pitawela EWMHRB, Priyan SPD, Kumara HMAP, Vijayarathan K, Maduranga HGS and *Dassanayake ABN
- ✓ 3. Interference of Coastal Sediment Dynamics due to the Colombo Harbour Expansion Project. Bandara M.S.D., Keegle P.V., Mallawa Arachchi M.A.K.M., *Ratnayaka N.P., Premasiri H.M.R., and Amalan K.

1520 - 1535 Hrs

Closing Ceremony and Vote of Thanks

1535 - 1600 Hrs

EVENING TEA