



Department of Earth Resources Engineering
Faculty of Engineering
University of Moratuwa
Sri Lanka

National Conference on Earth Resources Management

ERE 2014

Proceedings of the 5th Annual Conference
25th July 2014



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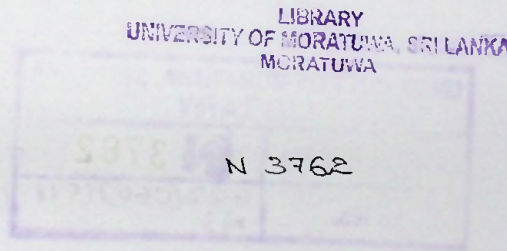
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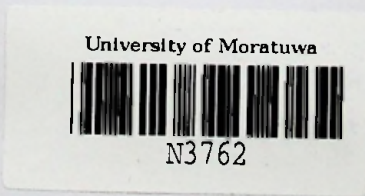
ERE 2014

8th National Conference
on

“Earth Resources Management”



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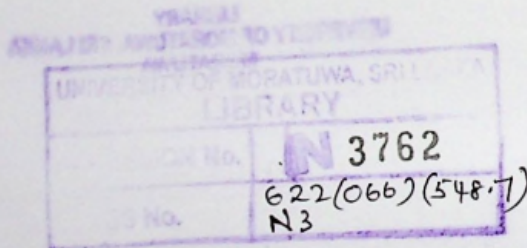
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on

**“EARTH RESOURCES
MANAGEMENT”**

WELCOME

It is with great pleasure, I continue to fulfill the responsibility of coordinating the activities leading to the 8th 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, Mr.SaliyaWickramasuriya, the key-note speaker, a person leading a new frontier vitally important to Sri lankan economy, and senior academics of the university. We are privileged to listen to the key-note address delivered Mr.Wickramasuriya.

The forum provides an ideal opportunity for the students 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 2014
07th July, 2014

MESSAGE FROM THE HEAD OF THE DEPARTMENT

It is with great pleasure that I send this message to the proceedings of ERE 2014 - 8th 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-Department of Earth Resources Engineering
ERE 2014

14th July, 2014



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CONFERENCE PROGRAM

0830 - 0900 Hrs Registration

Opening Ceremony

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

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

0920 - 0930 Hrs Introducing the Chief Guest to the Audience by the Conference Coordinator.

0930 - 0940Hrs Address by the Dean, Faculty of Engineering, University of Moratuwa.

0940 - 0950 Hrs Address by the Vice Chancellor, University of Moratuwa.

0950 - 1010Hrs Keynote Address-Mr. Saliya Wickramasuriya, Director General, Petroleum Resources Development Secretariat.

1010 - 1025Hrs Sponsor Presentations.

1025 - 1045 Hrs Morning Tea.

Technical Sessions

1045 - 1230 Hrs **Session I-Mining, Rock Blasting and Mineral Processing-Chairman- Mr. Asela Fernando - Chief Mining Engineer, Geological Survey and Mines Bureau.**

1. Parameters which Affect the Flow Rate of Minerals through Silos with Varying Silo Angles and Particle Size. Kankanamge LUM, Siriwardene KM, Sairudeen MI, Rangana WGL, Chathurange KJVM and *Rohitha LPS.
2. Underground Mine Cost Control Through Proper Mine Drainage - Bogala Mines. Ahmed AI, Norbertsan JR, Sabry MIM, Sandaruwan MWMS, Morayas MMST, * Dharmaratne PGR and Hemalal PVA.

3. Investigation into Off-the -Road Tire Performance at Aruwakkalu Limestone Quarry. Walpita SC, Priyankara IDND, Wickrama MADMG and *Jayawardena CL.
4. Determination of the Specific Charge in Sri Lankan Quarrying Industry and Tunnelling Practice. Fainaz MIM, Premathilaka SDNN, Faslan ACM, Gayan WAMS, Gugathasan N, *Hemalal PVA and Dharmaratne PGR.
5. Development of an Algorithm for Optimum Allocation of Multiple Teams to Borehole Drilling Sites. *Dilanthi UN, Fernando JMMP and Dissanayake DMDOK.

1230- 1330 Hrs

Lunch.

1330 - 1450 Hrs

Session II – Minerals & Innovations – Chairman – Dr. Bernard Prame – Deputy Director –Geological Survey and Mines Bureau, Sri Lanka

1. Replenishment Dynamics of the Verugal Heavy Mineral Sand Deposit. Igalawithana TD, Udayakumara PWG, Dissanayake DMCJB, Karunarathne AVPI, Maduranga SWM, Amalan K and *Rathnayake NP.
2. Identifying Garnet Bearing Rocks Suitable for Mining and Processing of Manufactured Garnet Sand. Senthuran S, Boyagoda EMRCL, Rukshan AMM, Sathiyaparathan T, Wannisinghe WMVK, *Abeyasinghe AMKB, Weerawanakula S, Peramasiri HMR and Rohita LPS.
3. Phlogopite Mica Mineralization in the Central Part of Sri Lanka and Identification of Suitable Areas for Mining. Senanayake HPSD, Pitawala WWSM, PiratheepB, Nivethan T, Vinothan K, Jotheesvaran K and *Weerawarnakula S.

1450- 1555 Hrs

Session III – Geo-Techniques, Oceanography and Petroleum Exploration - Chairman Mr. Mahinda Premathilaka – Manager, Ground Water Investigation, National Water Supply and Drainage Board.

1. Dynamic Model to Forecast Slope Stability - A Case Study Geradiella Landslide Site. Abeygunasekara WAHA, Hewavidana SM, Jananthan T, Madawala RMS, Vaheeshan K, *Premasiri HMR, Abeysinghe AMKB and Weerawarnakula S.
2. Integrated Remote Sensing and GIS Approach for Demarcation of Groundwater Potential Zones in Ambalantota Divisional Secretariat. *Mayadurra BB, Weerasekera WL, Senanayake IP and Dissanayake DMDOK.
3. Development of a Pore Pressure and Fracture Pressure Gradient Prediction Model for few exploration blocks in Mannar and Cauvery Basins, offshore Sri Lanka. Jayasinghe JMSTW, Kurukulasuriya AC, Jayasinghe WMTU, Wickrama MADMG, Senadhira AMADM and *Ratnayake NP.
4. Effects of Recycled Fine Aggregate Content on Cementitious Mortar. Subasinghe IS, Madusanka VPS, Jayasinghe VRDK, Sundarapperuma SMAP, Fernando WSSR, Chandrasiri SAKN and *Karunarathne S

1600- 1615 Hrs

Closing Ceremony and Vote of Thanks by the Conference Coordinator. Eng.P.VA.Hemalal – Senior lecturer.

1615 - 1645 Hrs

Evening Tea