

CURRICULUM VITAE

1. PERSONAL DATA

Name : Professor Pannipitiye Gamathi Ralalage Dharmaratne
Date of Birth : 27.10.1955
Nationality : Sri Lankan by descent
Marital Status : Married
Designation ; Senior Professor
Department of Earth Resources Engineering
University of Moratuwa

2. QUALIFICATIONS

2.1 Academic :

- ◆ B.A.Sc in Mining and Mineral processing with first class honours, University of Moratuwa, Sri Lanka – July 1978
- ◆ M.Sc in Rock Mechanics and Excavation Engineering, University of Newcastle Upon Tyne, UK – Oct. 1980
- ◆ Ph.D. in Rock Mechanics, University of Leeds, UK – Oct. 1983
- ◆ Diploma in Diamond Grading, German Gemmological Association, Germany – 1991
- ◆ Diploma in Gemmology, German Gemmological Association, Germany – 1991
- ◆ Diploma in Gemmology, Gemmological Association of Great Britain – 1992

2.2 Professional :

- ◆ Fellow Member of the Institution Engineers, Sri Lanka – 1991
- ◆ Fellow Member of the German Gemmological Association – 1991
- ◆ Fellow Member of the Gemmological Association of Great Britain – 1992

3. EXPERIENCE

4.1 Academic:

- ◆ Assistant Lecturer (Nov. 1978 to Nov. 1983), Department of Earth Resources Engineering(Formally Mining and Minerals Engineering), University of Moratuwa
- ◆ Senior Lecturer – Grade II (November 1983 – November 1989), Department of Earth Resources Engineering, University of Moratuwa.

- ◆ Senior Lecturer - Grade I (November 1989 to November 1999) Department of Earth Resources Engineering
- ◆ Professor (November 1999 to November 2007) Department of Earth Resources Engineering
- ◆ Senior Professor (November 2007 to date) Department of Earth Resources Engineering

4.2 Non academic:

- ◆ Director General (National Gem and Jewellery Authority of Sri Lanka) (Sept 1996 – Sept 1998).
- ◆ Chairman (National Gem and Jewellery Authority),(Oct 1998 – May 2003).
- ◆ Chairman (Geological Survey and Mines Bureau),(June 2004-March 2006).
- ◆ Consultant to Mahaweli Development & Environment (01.07.2018 to date).

4. INVOLVEMENTS IN THE UNIVERSITY AND NATIONAL ACTIVITIES

- ◆ Director Ceylon Gems Ltd. (Public quoted Company, University nominee, December 1987 – July 1987)
- ◆ Chairman, Geuda Research Forum, National Gem and Jewellery Authority, (1993 – 1998).
- ◆ Patron, Ratnapura District Lapidarists Welfare Association (February 1993- to date).
- ◆ Director, National Gem and Jewellery Authority (April 1994 – October 1994).
- ◆ Patron, All Island Gem Miners and Gem Traders Association, Ratnapura (June 1994 – to date).
- ◆ Vice President Gemmologists Association of Sri Lanka (June 1993 – August 1999).
- ◆ President, Gemmologists Association of Sri Lanka (1999).
- ◆ Lead a gem trade delegation of 19 members to Madagascar in May 1999 and held talks with the Minister of Energy and Mines and Government officials to establish trade links between the two countries.
- ◆ Planned and executed a Gemmology Diploma course at the university of Moratuwa (since January 2017)

5. PUBLICATIONS

Improvement of brightness of china clay, proceedings, conference on Mineral Resources of Sri Lanka and its development, University of Moratuwa, Sri Lanka, July 1984.

Rock quality assessments in the Victoria Project tunnel, “Engineer”, Institution of Engineers, Sri Lanka, July 1985

Simplified rock mass rating system for mine tunnel support, Transaction of Institution of mining and Metallurgy, UK Section A, July 1985

Estimating the compressive strength of rocks, “Engineer”, Institution of Engineers, Sri Lanka, Dec. 1985.

Removal of sulphur from graphite powder with particular reference to Kahatagaha-Kolongaha Mine, “Engineer”, Institution of Engineers, Sri Lanka, Jan. 1987.

Performance evaluation of a pulverizing plant with particular reference to Kahatagaha-Kolongaha Mine, “Engineer”, Institution of Engineers, Sri Lanka, June 1988.

Heat Treatment of Gemstones, proceedings, Seminar on Mining and Minerals Engineering, University of Moratuwa, Sri Lanka, Aut. 1988.

Geological exploration for source rocks of gem minerals in Sri Lanka, proceedings, Seminar on Mining and Minerals Engineering, University of Moratuwa, Sri Lanka, Aug. 1988.

Purification of Sri Lankan graphite, proceedings, Seminar on Mining and Minerals Engineering, University of Moratuwa, Sri Lanka, Aug. 1988

Heat treatment of gemstones – Our experience, workshop on “Towards identifying practical solutions to the problems that constrain the development of the gem industry in Sri Lanka”, Hotel Galadari Meridian, Sri Lanka, Feb. 1989

Exploration for alluvial gold occurrences and their probable sources in the area around Kaltota and Weli Oya, off Balangoda – A case study seminar on Research grants Oct. 1989.

Shear behavior of physical models of rock joints under constant normal stiffness conditions, proceedings, International Symposium on rock joints, Leon Norway, June 1990.

Shear behavior of physical models of rock joints under restricted dilation conditions, “Engineer”, Institution of Engineers, Sri Lanka, September 1990.

Gemmological Examination of a colour changing cobalt spinel, Z.Dt. Gemmol.Ges. Germany 42/1/1993.

Can Mechanized Mining replace traditional gem mining techniques, ‘The Sri Lankan Geuda’, proceedings of the National Symposium on Geuda heat treatment, IFS, Kandy, June 1993.

Identification of Heat Treated Corundum, ‘The Sri Lankan Geuda’, proceedings of the National Symposium on Geuda Heat Treatment, IFS, Kandy, June 1993.

Assessment of Techniques used to Block out hard rocks for industrial applications, “Engineer”, Institution of Engineers, Sri Lanka, December 1993

Mechanized Gem Mining in Sri Lanka and it's effects on the environment, "Engineer", Institution of Engineers, Sri Lanka, June 1994.

Critical evaluation of environmental comfort conditions of a deep graphite mine with special reference to Bogala Mines, Sri Lanka, "Engineer", Institution of Engineers, Sri Lanka, December 1994. (CDE award was offered as the best paper for 1994/95 session published in the 'Engineer')

Mining and Minerals Industry in Sri Lanka, Workshop on Mineral Beneficiation, 8 – 19th May 1995, Prague, Czech Republic.

Some Greenish Brown Gemstones from Sri Lanka. Z.Dt. Gemmol.Ges.Germany 47/3/1998

Identification of some colourless gemstones from Sri Lanka, Z.Dt.Gemmols.Ges.Germany. February 1999

Critical evaluation of fashioning of gemstones in Sri Lanka - Sabaragamuwa University Journal, November 1999

The fashioning of rock crystal for spectacles in Sri Lanka, Journal of gemmology,Gemmological Association of Great Britain,27,5.

Ornamental variety of pink marble with apatite found near Eppawala, Sri Lanaka, Austrailian Gemmologist,21,4.

Sri Lanka Gem Industry: past, present and future. Z.Dt. Gemmol.Ges.Germany 50,4

An unusual gem deposit (man made) at Pallededda,Sri Lanka , Journal of gemmology,Gemmological Association of Great Britain,28,1. 2002

Corundum//Spinel reaction textures in carbonate-origin rocks, in Sri Lanka, Austrailian Gemmologist, 21,5, 2002

Identification of Some Yellow – Orange gemstones from Sri Lanka. Z.Dt. Gemmol.Ges.Germany, 51,1, 2002

Gem mining and sustainable environment management in Sri Lanka, Journal of gemmology,Gemmological Association of Great Britain,28,3.,2002

Recent Discovery of Large Sapphires in Sri Lanka. Z.Dt. Gemmol.Ges.52,1, 2003.

Some preliminary observations of corundum from Balangoda region, Sri Lanka, Z.Dt. Gemmol. Ges. Germany, 52,3,2003

Gem mining Industry, (In sinhala) Sabargamuwe Wansa Kathawa, Sabaragamuwa Provincial Council. Ratnapura, Sri Lanka., 2003

Recent study of fluid inclusions in corundum, Z.Dt. Gemmol. Ges. Germany, 52/4,3, 2003.

The Key Factors Affecting the Competency in Value Addition to Gem and Jewellery in Sri Lanka, Proceedings, International conference on Faculty of Architecture Research Unit of University of Moratuwa, Galle Fort, Sri Lanka, 24-25 August 2012.

Minimization of Secondary Fragmentation with a View to Enhancing the Blasting Economics, Proceedings, The 6th National Conference on Minerals and Innovative Thinking, University of Moratuwa, November 2012.

Performance Evaluation of Emulsion/Water gel Explosives and Comparison with Dynamite in Sri Lankan Quarry Practices, Proceedings, The 6th National Conference on Minerals and Innovative Thinking, University of Moratuwa, November 2012.

Mining of Primary Source Rocks of Gems in Sri Lanka, The 3rd International conference on gems & jewellery, Bangkok, Thailand, 13-14 December 2012.

Sapphires from Thammannawa, Kataragama Area, Sri Lanka, Gems & Gemology, summer 2012

Strings, Stars and spangles, Journal of Gemological Association of University of Moratuwa, September 2012

Sapphires from Thammannawa, Kataragama Area, Sri Lanka, Gems & Gemology, summer 2012, pp 98-107

Developments in the Gem and Jewellery Export Industry in Sri Lanka, Journal of Gemological Association of University of Moratuwa, December 2012

Primary Sources of Gems (Pegmatite and Gem Bearing Geodes in Sri Lanka), Journal of Gemological Association of University of Moratuwa, December 2012

The Optimization of Field Parameters of Non-Explosive Demolishing agents, The 7th National Conference on Earth Resources Management, University of Moratuwa, 05 June 2013.

Performance Evaluation of Emulsion/Water Gel Explosives and Comparison with Dynamite in Sri Lankan Quarrying/Mining Practices, Proceedings, The 7th National Conference on Earth Resources Management, University of Moratuwa, 05 June 2013.

An unconventional Approach to National Development Indicators(NDI), Proceedings National Engineering Conference 2013, Young Members Section, IESL Auditorium , Colombo, 25th October, 2013

Critical Evaluation of Underground Support Systems in Bogala Mines, Proceedings National Engineering Conference 2013, Young Members Section,, IESL Auditorium , Colombo, 25th October, 2013

Evaluation of Overhand Cut and Fill Mining Method for Bogala Graphite Mines, Sri Lanka), Proceedings National Engineering Conference 2013, 19th ERU Symposium, University of Moratuwa. November 2013.

Critical Assessment of vein-Type Graphite Mining methods in Sri Lanka, iPURSE. Peradeniya University International Research Session, Peradeniya, Sri Lanka. 4th-5th July 2014

_What ails the gem and jewellery industry in Sri Lanka?,Journal of Gemological Association of University of Moratuwa, September 2014

Underground Mine cost Control Through Proper Mine drainage-Bogala Mines, Proceedings, The 8th National Conference on Earth Resources Management, University of Moratuwa, 25 July 2014.PP 6-11.

Determination of Specific Charge in Sri Lankan Quarrying Industry and Tunneling Practice, Proceedings, The 8th National Conference on Earth Resources Management, University of Moratuwa, 25 July 2014.PP 17-21.

Use of Dynamites, Water-gels and Emulsion Explosives in Sri Lankan Quarrying/Minning Practice. 'Engineer',(2014)Journal of the Institution of Engineers, Vol.XLVII,No.01,pp 31-37.

Influence of Geotechnical Conditions on Explosive Specific Charge in Sri Lankan Quarrying and Tunneling Practices. Proceedings, The ERE Research Conference on Earth Resources Management, Rose Garden Hotel, Boralesgamuwa30 July 2015, pp 9-14.

Critical Analysis of safety Aspects of an Underground Graphite Mine with Reference to Bogala Mines, Proceedings, The ERE Research Conference on Earth Resources Management, Rose Garden Hotel, Boralesgamuwa30 July 2015, pp 15-21.

Delineation of Potential Sites for Gemstone Mining in Kuru-Ganga Catchment, ratnapura: A GIS approach, Proceedings, The ERE Research Conference on Earth Resources Management, Rose Garden Hotel, Boralesgamuwa30 July 2015, pp 46-50.

Critical Evaluation of Blast-Induced Structural Damage Criteria for building around Metal Quarries at Thudugala, kalutara, Proceedings, The Annual Conference on Earth Resources Management, Rose Garden Hotel, Boralesgamuwa,08 July 2016, pp 17-22.

Stope Productivity Improvement through Application of Cut-and-fill method variant at Bogala graphite Mines, Sri Lanka, Proceedings, The Annual Conference on Earth Resources Management, Rose Garden Hotel, Boralesgamuwa, 08 July 2016, pp 23-28.

How Sri Lanka manage Environment with gem Mining, Proceedings, The 9th International Conference on Earth Resource technology, Chulalongkorn University, Bangkok, Thailand, 28-29 July, 2016, pp 786-792.

Critical evaluation of current environmental comfort conditions of Bogala underground, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 29 August 2017, pp 5-12.

Optimizing the specific charge for limestone blasting at Aruwakkalu Limestone Quarry, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 29 August 2017, pp 33-42.

Developing relationships among grindability, chemical composition and particle size of raw material mix at Aruwakkalu Limestone for Cement Production, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 29 August 2017, pp 167-174

Software assisted bench blast optimization, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 29 August 2017, pp 177-182.

Application of emulsion explosive and comparative study on water-gel explosives for rock quarrying in Sri Lanka, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 29 August 2017, pp 185-192.

Optimizing the Specific Charge for Limestone Blasting at Aruwakkalu Limestone Quarry, ISERME 2018, International Symposium on Earth Resources Management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 24 August 2018, pp 21-27.

The Specific Charge for Limestone Blasting at Aruwakkalu Limestone Quarry, ISERME 2018, International Symposium on Earth Resources Management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 24 August 2018, pp 21-27.

Assessment of Environmental Impacts Resulting from Ground Vibrations due to Piling Activities and Railway Transport, ISERME 2018, International Symposium on Earth Resources Management & Environment, Blue Water Resort, Wadduwa, Sri Lanka, 24 August 2018, pp 119-127.

Abstracts:

Corundum/Spinel reaction textures in metamorphosed carbonate rocks of Sri Lanka, SLAAS, proceedings of the 57th Annual session, part 1, 20 November -01 December 2001, Colombo

Plagioclase as a protective rim around corundum in metamorphosed carbonate rocks of Sri Lanka, SLAAS, proceedings of the 57th Annual session, part 1, 20 November -01 December 2001, Colombo

Weakening of index Properties of fresh gneissic rocks Subjected to Artificial Weathering, Institution of Engineers, transactions- volume I- PART B ,2006

Comparison of Vein Mining Methods with the Nature of Occurrences, Proceedings of the 30th Annual Technical sessions, Geological Society of Sri Lanka.28 February 2014.

Critical Assessment of Vein-type Graphite Mining Methods in Sri Lanka. Proceeings, iPURSE, Peradeniya University International research Sessions, 4-5 July 2014.

Analysis of vein Type Graphite Mining Methods in Sri Lanka. Third International Conference on Advances in Mining and Tunneling, Vung Tau, Vietnam, 21-22 October 2014

Modeling of flow rate of Minerals with varying silo angles and orifice diameters, Third International Conference on Advances in Mining and Tunneling, Vung Tau, Vietnam, 21-22 October 2014

Gem Mining and Measures Taken to Protect the Environment in Sri Lanka, International Forestry and Environment Symposium, Aliya Resort and Spa, Sigiriya, Sri Lanaka,24-25 October 2014.

Rock quarrying and Sustainable Environment Management, Proceedings of the International Forestry and Environment Symposium 2016, At Heritance Kandalama,23-24 September 2016,PP 97.

Effect of trenching on blast-Induced ground vibration in Sri Lankan metal quarries, ISERME 2017, International Symposium on Earth Resources management & Environment, Blue Water Resort, Wadduwa, Sri Lanka,29 August 2017,pp 167-174

A Sustainable Method to Rehabilitate the Abandoned Quarries od Anuradapura district. Research Symposium on Mineral Resources of Sri Lanka: prospects and challenges, BMICH, Colombo, 17 October 2017, pp: 26

Mitigation of Dust and Noise Generated from Mineral Processing Plants. Research Symposium on Mineral Resources of Sri Lanka: prospects and challenges, BMICH, Colombo, 17 October 2017, pp: 28.

Developing a Value Added Product using Low grade Quartz as an Alternative for ceramic Floor Tiles, International Mineral Symposium 2018, BMICH, 20 October 2018. pp 30.

Zero waste Sustainable Mining and Processing Operation of Quartz. International Mineral Symposium 2018, BMICH, 20 October 2018. pp 34.

Assessment of Environment Comfort Indicators of Underground Graphite Mine at Bogala, Sri Lanka, International Mineral Symposium 2018, BMICH, 20 October 2018. pp 35.

Fly Rock Generation and Social Impact Mitigation in Local Quarrying, ISERME 2019, International Symposium on Earth Resources management & Environment, Sri Lanka Foundation, Colombo 07, 23 August 2019, pp 33-38.

Study on Royalty for Sri Lankan Quarry Mining of Industrial Minerals using Photogrammetric 3D Modelling, ISERME 2019, International Symposium on Earth Resources management & Environment, Sri Lanka Foundation, Colombo 07, 23 August 2019, pp 3-11.

Colour Development of Geuda Stones after the Gas-Fired and electrically Operated furnace Heat treatment, Journal of Technology and value Addition, Uva wellassa university, Volume 1, January 2019, pp 46-51.

A comparison of global rare earth element (REE) resources and their Mineralogy with REE prospects in Sri Lanka, Journal of Asian Earth Science, 200(2020)104475.

Analysis of Bulking Factor as a basis for Royalty Calculation in Aggregate Quarrying in Sri Lanka, Moratuwa Engineering Research Conference (MERCon2020), 978-1-7281-9975-7/20/\$31.00 ©2020 IEEE, PP 521-525.

5.1.Chapters in books, scholarly work

Chapter on gems- National Atlas, 2006

Chapter on gems- (a) 'Gems that brought fame to sabaragamuwa' (In sinhala), Sabargamuwe Wansa Kathawa, Sabaragamuwa Provincial Council. Ratnapura, Sri Lanka.

(b) Gem mining Industry (In sinhala)

Sabargamuwe Wansa Kathawa, Sabaragamuwa Provincial Council. Ratnapura, Sri Lanka, 2003.

5.2. Books

Gem Industry of Sri Lanka, Published by the Geological Survey & Mines Bureau, 2005

Gemmolgy, Published by the Gem and Jewellery Research & Training Institute, September, 2007

6. SCIENTIFIC AND LITERARARY COMMUNICTIONS (Feature articles in Newsletters, newspapers, Scientific magazines etc)

Sri Lanka's Unexplored gem potential, (Ceylon daily news, 12 September 2000)

Sapphire in danger, (Ceylon Daily News on 3rd March 2003)

Developing the Geuda Industry, (Ceylon Daily News on 31st March 2003)

Blue Sapphire-National Gemstone of Lanka soon, (Ceylon Daily News, 14 April 2003)
Gem mining, Floods and Landslides (Sunday Times, 07. September 2003)

Gems and Astrology, Gem news, Journal of Gemmologists Association of Sri Lanka, August 2004

Gemmology Education in Sri Lanka, Souvenir, Third Gem and Minerals of Lanka exhibition, Gemmologists Association of Sri Lanka, 2005

Need of the hour, or are we too late?, GemTalk, Voice of the Gem Industry of Sri Lanka, Vol-1, Issue 1, 2006

Chromium - The king maker, GemTalk, Voice of the Gem Industry of Sri Lanka, National gem and Jewellery Authority of Sri Lanka, Vol-1, Issue 2, 2006

Beauty off imperfections, MINIKIRANA, The Journal of the Gemmological Association of University of Moratuwa, Vol.1, 2006

What's in a name?, GemTalk, Voice of the Gem Industry of Sri Lanka, National gem and Jewellery Authority of Sri Lanka, Vol-1, Issue 3, 2007

How to become a Gemmologist, Souvenir, Third Gem and Minerals of Lanka exhibition, Gemmologists Association of Sri Lanka, June 2007

Chrysoberyl: Cat's eye and Alexandrite, MINIKIRANA, The Journal of the Gemmological Association of University of Moratuwa, Vol.2, September 2007.

Be Sri Lankan and Buy Sri Lankan Gem,s Sunday Divaina (24 March 2013), Sunday Lakkbima (02 June 2013)

Ruby and Sapphire, Sunday Divaina (31 March 2013), Sunday Lakkbima (09 June 2013)

More about Ruby and Sapphire ,Sunday Divaina (07 April 2013), Sunday Lakkbima (16 June 2013)

Zircon, Sunday Divaina (14 April 2013)

Chrysoberyl: cat's eye; Sunday Divaina (21April 2013),Sunday Lakkbima (23 June 2013)

Chrysoberyl: Alexandrite;Sunday Divaina (28 April 2013), Sunday Lakkbima (30 June 2013)

Spinel, the First Cousin of Ruby; Sunday Divaina (05 May 2013), Sunday Lakkbima (07July 2013)

Tourmaline; Sunday Divaina (12 May 2013), Sunday Lakkbima (14 July2013)

Emerald the Queen of gems; Sunday Divaina (19 May 2013), Sunday Lakkbima (21 July 2013)

Garnet ;Sunday Divaina (26 May 2013)

New Marketing Strategy will Benefit Economy; Sunday Observer (16 June 2013)

7. PRESENTATIONS AT CONFERENCES, MEETINGS OF PROFESSIONAL ASSOCIATIONS ETC

Gem industry in Sri Lanka, the Institution of engineers, Sri Lanka, 28 June 2000

Challenges to the Professional and the trades, 44th technical programme, OPA, 28 July 2000

Gem Industry of Sri Lanka, Dept. of Mining geology, Chulalongkorn university, Bangkok, 29 July 2001

Gem mining and sustainable environmental management, regional training programme in management of natural resources, PGIS, University of Peradeniya, 28 September 2001

An overview of the Gem Industry of Sri Lanka, International Coloured Gemstone congress, Jaipur, India, 4-11 January 2003

Legal, Fiscal, Institutional and Infrastructural aspects of the gem industry, Communities & Small Scale Mining (CASM), AGM & Learning Event, Cinnamon Grand Hotel Colombo, 12-16 October 2004

Heat treatment of corundum, The Gemmological Association of Australia, 59th Annual federal Conference, Colombo Plaza hotel, 15 May 2005

Identification of gem materials, Sri Lanka Customs Department, Colombo 05 July 2006

Present status of the gem industry in Sri Lanka, The First International Gem and Jewellery Conference, December 6-9 2006, Bangkok, Thailand

Future gem prospects in Sri Lanka, International Coloured Gemstone congress Dubai, 4-10 May 2007

Gems for a better Future, St.Allocius college, Ratnapura, 20 July 2007

Identification of Natural gemstones, Public lecture, Town hall, Ratnapura, 11 August 2007

Your career in gem industry, Kuliypitiya Central College, 04 July 2014

Eco-friendly Gem mining in Sri Lanka, 16th ICA Congress, 16-19 may 2015, Colombo