

# VIBRATION PRACTITIONER / SPECIALIST CERTIFICATION PROGRAM BASED ON ISO 18436

LEVEL

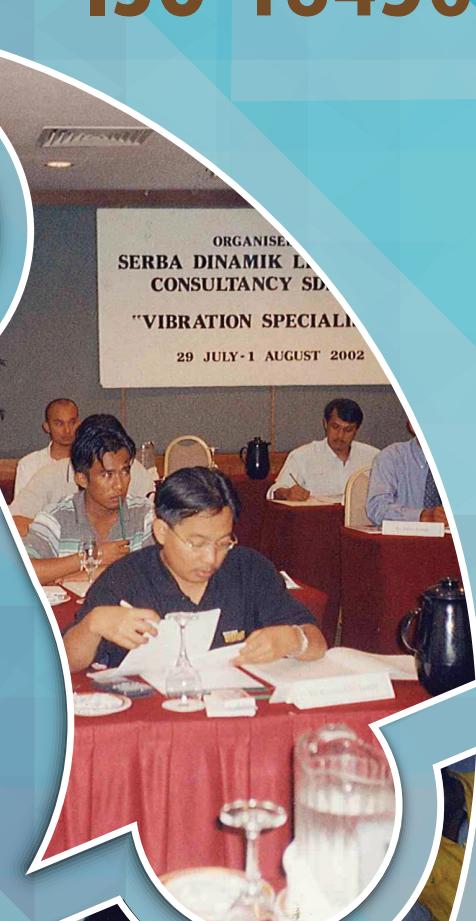
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VIBRATION SPECIALIST  
1 COURSE

4TH-7TH FEBRUARY 2002

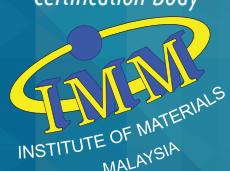
ORGANISED BY  
SERBA DINAMIK LABORATORY &  
CONSULTANCY SDN. BHD.

"VIBRATION SPECIALIST"  
29 JULY-1 AUGUST 2002



A Joint Program by :

Certification Body



Training Institution



Approved Training Provider



SERBA DINAMIK SDN. BHD.

# Vibration Practitioner / Specialist Certification Program Based On Iso18436



## INTRODUCTION

The quality of vibration analysis and condition monitoring depends to very large extent on the quality of the people who carry it out. It does not matter how good the monitoring equipment is or even how committed management is, the program will fall unless it is run by capable and dedicated people. What can be done to ensure the availability of capable and dedicated people? Professional certificate with performance objectives will be the answer.



## THE NEED

### 2.1 Plant requirement

Nowadays, no one questions the benefits of a good predictive maintenance system. Plenty of evidence from a wide variety of sources has demonstrated the benefits time and time again. Three factors, primarily, govern the quality of the program.

- Management understanding and commitment
- Suitable and quality of equipment for the identified tasks
- Quality, dedication and competency of the personnel who will run the program

Of these, the first two are beyond the scope of this paper and helping ensure the third is our focus by way of creating a certification program in compliance to international industrial standards and practices.



### 2.2 Personal/Personnel Requirements

Individuals need to know their tasks and they need to be able to demonstrate that they know them. This statement is true particularly in the vibration jobs, since the diversity of educational background, training and experience is so broad.

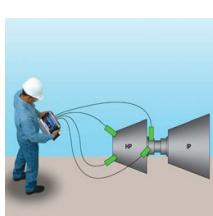
Similar problems exist for companies who need to hire the appropriate expertise. How can they know what type of individual is required for their particular job? How can they even write the job description, since the specialty is so narrow? A certification program will be a solution.



## CERTIFICATION INSTITUTION

IMM is an certification institution recognized by PETRONAS and other PSC contractors in Malaysia and this Vibration Specialist Certification Program is done strictly in accordance to ISO18436 requirements which shall be recognized worldwide.

IMM recognized Vibration Technology as a proven tool to troubleshoot and analyse problem related to various failure in material of machines, structure etc.



## WHY CERTIFICATION?

Certification gives academic recognition to you technical staff which is increasingly important in a competitive global market that heavy emphasis on 'standards' of excellence that is traceable to documented systems and work practices. This IMM Vibration Specialist Certification program fulfills the need for such a standard of excellence.

## THE PROGRAM CONTENT

Training course requirements for personnel involved in vibration condition monitoring and diagnostics of machines

## The Course Examination Fee

Vibration Practitioner Level I

5 - 8 May 2014

Course fee/pax

**RM 2,610<sup>00</sup>**

Exam fee/pax

**RM 500<sup>00</sup>**

# The Program Content

## DAY 1

- Principles of Vibration

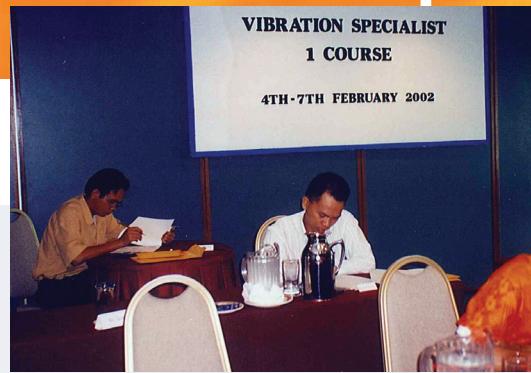
- Basic Motion
- Period
- Frequency Amplitude
- Peak
- Peak-to-peak
- R.M.S
- Parameters

- Displacement

- Velocity
- Acceleration units
- Unit conversions
- Times and frequency domains

- Natural Frequency

- Resonance
- Critical speeds



## DAY 3

- Signal Processing

- FFT Application

- Condition Monitoring

- Fault condition recognition

- Fault Analysis

- General fault recognition

- Correction Action

- Basic maintenance action

- Equipment Knowledge

- Electric motors
- Generators and drives
- Pumps, Fans
- Compressors



## DAY 2

- Data Acquisition

- Instrumentation
- Transducer
- Sensor mounting
- Mounted natural frequency
- Test planning
- Data formats
- Computer database upload/download



## DAY 4

- Equipment Knowledge

- Rolling mills
- Paper machines
- Other process equipment
- Machine tools
- Structure, piping
- Gearboxes

- Acceptance Testing

- Test procedure



# List of Approved Trainers

## Dr. Ir. Mohd Abdul Karim Abdullah

The Managing Consultant of Serba Dinamik Resource & Development Sdn. Bhd. (SDRD) who has acquired more than 25 years of hands-on experience in managing, supervising, lecturing and carrying out various tasks related to turbomachinery maintenance nation-wide and internationally. Among other experience but not least is as follows:-

- Conducting public and in-house training course covering topics on precision alignment and balancing, maintenance & inspection of steam turbines, compressors and pumps, predictive / preventive maintenance and turbomachinery protection system.
- Involved in field management and supervision for overhauling of steam turbines, gas turbines, reciprocating & centrifugal compressors and pumps of various made / brand.
- Executing project control function in the job planning and work scheduling to maintain the planned work and production schedule. Analyse schedule impacts resulting from design alternatives, field change and site condition encountered and revising the project schedule when necessary to incorporate any changes.
- Planning, recruiting and managing human resources for various plant shutdown & maintenance representing company management and other construction & fabrication projects.
- Miscellaneous experience on construction & fabrication for various projects under the company involving civil activities & mechanical such as checking fabrication drawings, erection drawings, interprets engineering drawings for tender proposal, recheck piping spool isometric drawings for dimensional accuracy and conformity with plans, elevations and specification.
- Involved actively and executively as a CEO of Serba Dinamik Group.
- Professional engineer contribution
  - Mentor for the IEM Training Scheme (Mechanical discipline)
  - Personal campaign for recruitment of more graduate engineer into being active member of IEM

## Prof. Dr. Ir. Mohd Salman Leong

Professor with University Technology Malaysia specialising in Vibration & Acoustic. Having more than 35 years of lecturing, consulting and hands on research, development and analytical works in various aspects of plant engineering.

- Prominent speaker in Vibrations with wide coverage for all types of vibrations and factors related from troubleshooting, mitigation and monitoring
- Have undertaken major position in Research and Development Projects on Vibrations at other tertiary institution i.e. Heriot Watt.
- Actively involved in industries for giant Government Agencies as well as Private sectors including Petronas Research & Scientific Services, Tenaga Nasional Berhad and Proton Berhad
- Vast background experience in Teaching and Training for the industry locally and worldwide on Vibrations for building structures and machineries movement
- Major involvement in relevant Vibrations Projects with successful track record; among others are :
  1. Klang Valley MRT Noise & Vibration Analysis and Mitigation Measures 3,530.000.00
  2. New LCC Terminal: Main Terminal & Satellite Buildings, Contact Piers 895.000.00 and Sky Bridge: Acoustics and Vibration Design (including vibration acceleration analysis for human induced vibration and tuned mass dampers design for Skybridge).
  3. BP-Petronas Polyethylene Malaysia, Structural Vibrations from Reactor 428,400.00 Investigations and Finite Element Analysis
  4. Petronas Carigali Tukau Compressors, Piping & Structure Vibrations 365,758.00 Investigations and Finite Element Analysis
  5. Kuala Lumpur Convention Centre – Acoustics & Vibration Design. 540,000.00
- Secured vital grants and funds from Government and Private Universities leading to awards in carrying-out research, publications and supervision to the societies and public at large
- Secured extensive amount of various Contracts on Consultation and Advisory services on Vibrations Projects by Plant Operators among others were Brunei LNG and MMC Gamuda MRT Project. The same achievement also for Original Equipment Manufacturer (OEM) for equipment i.e. Gas Turbine (Rolls Royce), Steam Turbine, Compressors and Gearbox

## Dr. Rahizar Bin Ramli

Senior lecturer with University Malaya. Having more than 23 years in areas of vibration and acoustics technology involvement, both consultancy and lecturing

- Massive teaching and training experience in principles and fundamentals of Vibrations of Rotating Equipment (RE) with analysis for remedy and mitigation
- Wide coverage of research and development for Vibrations on simulation as well as on real actual physical machineries in the industry
- Responsible on implementing Vibration Condition Monitoring for many processing plants, power plants, and oil and gas industries throughout South East Asia
- Numerous experience in machinery diagnostics using vibration analysis whilst regularly conducting training on vibration analysis for engineers and technicians
- Involved in various consultation works related to vibration and structural dynamics, focussing on offshore and onshore applications
- Conducted exploratory research works related to piping vibrations, active noise control, and evaluating experimental modal analysis with finite element analysis for large structures
- Produced significant number of internal reports on vibration analysis and diagnostics to clients and has published several technical papers and conference for the same

## En. Afandi Abd Hamid

Vice President Operation and Maintenance Business Unit of Serba Dinamik Group berhad. Having more than 19 years of consultancy and hands on experience in analysing and troubleshooting various problems related to rotating equipment. Among others but not least as below :-

- In-depth experience in principles and fundamentals of Vibrations of Rotating Equipment (RE) with analysis for suitable remedy and mitigation applications
- Significant involvement in projects by major oil and gas operators in Malaysia i.e. Petronas, Shell and ExxonMobil, as well as Middle-East especially the Gulf Corporation Council (GCC) Countries for Rotating Equipment in Vibrations
- Have resolved substantial Vibrations problems with adequate study and research of RE defects on parts as well as assembly
- Highly skillful in plant equipment and machineries especially Rotating Equipment activities for planned and unplanned Turnaround Outage & Shutdown
- Contributed effectively in advising Clients for solutions toward Vibration symptom detection and corrective action
- Support substantially in Condition Base Monitoring (CBM) team with emphasis to Vibrations and related factors

## En. Mokhtar Mohd. Tahir

The Reliability Manager with Serba Dinamik Sdn. Bhd. who has 23 years of experience in the oil and gas industry including constructions, commissioning, troubleshooting and maintenance. Comprehensive knowledge of static and rotating equipment with particular expertise in condition monitoring, vibration analysis, troubleshooting and overhaul for rotating equipment

- Actively perform maintenance and repair of rotating equipment during planned and unplanned shutdown, and assist instrumentation calibrate and setting vibration probe during turnaround
- Lead troubleshooting activities on turbomachineries nationwide in Malaysia inclusive of rectification machine problem such as in situ balancing
- Collection of condition maintenance data and analysis work on it thereafter

## ***Cancellation & Transfer***

*If you are unable to attend, a substitute participant is welcome to attend in your place at no additional charge. A full refund, less 10% administrative charge, will be given if cancellation is received in writing at least 14 working days prior to the course. A 50% refund and documentation will be given if cancellation is received less than 7 days prior to the course.*

## The Instructors

- Dr. Ir. Mohd Abdul Karim Abdullah
  - Prof Dr. Ir. Salman Leong
  - Dr. Rahizar Ramli
  - En. Afandi Abd Hamid
  - En. Mokhtar Mohd. Tahir

# How To Register

## MATERIALS TECHNOLOGY EDUCATION

NO. 10-1, JALAN BANDAR 3,  
PUSAT BANDAR PUCHONG,  
47160 SELANGOR, MALAYSIA

 : +603 5882 3574  : +603 5882 3524

## Registration Form

Yes! Please register the following participants for course

I am unable to attend but please put me on your mailing list

# SERBA DINAMIK SDN. BHD. (266724-K)

7-5, PUSAT DAGANGAN UMNO SHAH ALAM,

LOT 8, PERSIARAN DAMAI, SEKSYEN 11,

40100 SHAH ALAM,  
SELANGOR, MALAYSIA

 : +603 5511 3213  : +603 5511 3212

 : serbadk@e-serbadk.com

Kindly send your cheque or bank draft,

**MATERIALS TECHNOLOGY  
EDUCATION**  
No. 10-1, Jalan Bandar 3,  
Pusat Bandar Puchong,  
47160 Selangor, Malaysia

*Registration is on receipt of payment.  
Kindly ensure early booking for the  
limited seats to avoid any inconvenience.*

**Approving Manager/Contact Person:**

**Designation:**

Company Stamp: