



CERTIFICATE — OF PRESENTATION —



World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

28th - 29th October 2022 | Singapore

Certificate No: IFERP20222910_WCMRI_0054

This is to Certify that
Branckly Egbert Picanussa.....of

.....
INSTITUT AGAMA KRISTEN NEGERI (IAKN) AMBON.....Presented his/her worthy

Virtual Presentation titled.....*The New Construction of Maluku Horizontal Bamboo Flute: 9 Finger Holes*.....

.....
in the “World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)” organized by Institute For Engineering Research and
Publication (IFERP) in Association with Karpaga Vinayaga College of Engineering and Technology held on 28th - 29th October 2022 at Singapore.

Mr. Scott Newton

Managing Partner, Thinking Dimensions
Global Consulting, Milan, Lombardy, Italy

Dr. Ipseeta Nanda

Dean, Faculty of Information Technology
Gopal Narayan Singh University,
Jamuhar, Rohtas, Bihar, India

Dr. Manju Gupta

Director Strategic Management,
Mangalmay Group of Institutions and
Managing Director Porteight pvt ltd
Greater Noida, Uttar Pradesh, India

Prof. (Dr.) Dilip Nandkeolyar

Co- Chancellor, Advisory Board Member at
QNext Global Certification
Commonwealth University, Pune,
Maharashtra, India



Mr. Rudra Bhanu Satpathy

CEO & Founder
Institute For Engineering Research and
Publication (IFERP)



Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

28th & 29th October 2022

Conference Agenda

Organized by

Institute For Engineering Research and Publication (IFERP).

In Association with

Karpaga Vinayaga College of Engineering and Technology, India

** Time Zone: Singapore time Zone

Keynote Speakers



Mr. Scott Newton

**Managing Partner, Thinking Dimensions
Global Consulting, Milan, Lombardy, Italy**



Dr. Ipseeta Nanda

**Dean, Faculty of Information Technology
Gopal Narayan Singh University,
Jamuhar, Rohtas , Bihar, India**



Prof. (Dr) Raj Kumar Singh
**Chairperson, Centre For
Entrepreneurship, Innovation & Skill
Development of SMS Varanasi
Dr APJ Abdul Kalam Technical
University, Lucknow, India**



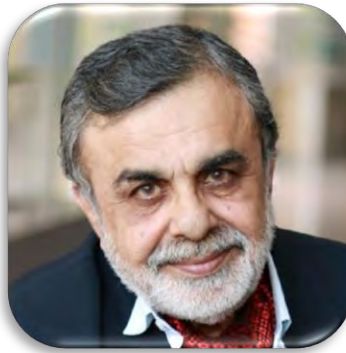
Dr. Manju Gupta
**Director strategic management,
Mangalmay group of institutions
Mangalmay Group of Institutions and
Managing Director Porteight pvt ltd,
Greater Noida, Uttar Pradesh , India**



Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)



Prof. (Dr.) Dilip Nandkeolyar
Co- Chancellor, Advisory Board Member
at QNext Global Certification
Commonwealth University, Pune,
Maharashtra, India

** Time Zone: Singapore Time Zone (GMT+8)

Session Speakers



Dr. Shardha Purohit
Associate Professor,
Noida International University
Greater Noida, Uttar Pradesh, India



Dr. Jyothi A P
Faculty of Engineering and Technology, Dept
of Computer science and Engineering,
Ramaiah University of Applied Sciences,
Bengaluru, India

Session Chairs



Dr. Christo Ananth
Professor,
Samarkand State University,
Uzbekistan



Dr. R. Surendran M. Tech., Ph.D
Professor,
Department of Computer Science and
Engineering,
Saveetha Institute of Medical and Technical
Sciences, Chennai, India



Dr. Rohit Bansal
Assistant Professor,
Department of Management Studies,
Vaish College of Engineering, Rohtak
(Haryana)



Tadele Melaku Chala
Assistant Professor
Department of Economics
Ambo University, Ethiopia

Conference
AgendaWorld Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

Dr. D. Kumutha
Associate Professor,
Karpaga Vinayaga College of
Engineering and Technology



Mr. Michael g. Albino
Faculty/Lecturer,
PRESIDENT RAMON MAGSAYSAY
STATE UNIVERSITY



Dr. M. Shilpa
Associate Professor
Visveswaraya Technological
University, Belgaum



Dr. Sanya Kenaphoom
Associate Professor (Public Administration),
Faculty of Political Science and Public
Administration,
Rajabhat Mahasarakham University,

Special Guest



Dr. Santosh B. Rane
Faculty and Former Dean
Academics,
Sardar Patel College of
Engineering,
Mumbai



Velliangiri. P
Osmania University
Hyderabad



WCMRI



IFERP®

connecting engineers...developing research

Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

Program Schedule

Day - 1

** Time Zone: Singapore Time Zone (GMT+8)

Program Schedule

| | |
|----------------------|--|
| 09:00 AM – 09:30 AM | Registration desk |
| 09:30 AM – 9:35 AM | Singapore National Anthem |
| 09:35 AM – 9:40 AM | India National Anthem |
| 09:40 AM – 09:55 AM | Introduction speech by Moderator |
| 09:55 AM – 10:05 AM | Welcome Speech by Mr. Siddth Kumar Chhajer - Founder, Managing Director of Technoarete Groups |
| 10:05 AM – 10:15 AM | Speech by Guest of Honor P.Velliongiri |
| 10:15 AM – 10:45 AM | Speech by Keynote Speaker Dr. Manju Gupta |
| 10:45 AM – 11:15 AM | Speech by Keynote Speaker Dr. Ipseeta Nanda |
| 11:15 AM – 11:30 AM | Tea Break |
| 11:30 PM – 12:05 PM | Exclusive Event Dr. Santosh B. Rane |
| 12:05 PM – 12:45 PM | Lunch Break |
| 12:45 PM – 01:15 PM | Speech by Keynote Speaker Mr. Scott Newton |
| 01:15 PM – 03:15 PM | Technical Session I Latest Research on Bioengineering |
| 03:15 PM – 03:30 PM | Tea Break |
| 03:30 PM – 03:50 PM | Speech by Session Speaker Dr. Shardha purohit |
| 03: 50 PM – 05:00 PM | Technical Session II Civic and Political Studies |
| 05:00 PM – 05:20 PM | Valedictory function |
| 05:20 PM – 05:40 PM | Vote of thanks |



WCMRI



IFERP[®]

connecting engineers...developing research

Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

DAY 1
28th October 2022

** Time Zone: Singapore Time Zone (GMT+8)

Technical Session I

- 01:15 PM – 01:25 PM** **Communication Barriers in Instructional Delivery as Experienced by AIMS Students in an Online Pedagogical Environment: An Exploratory Sequential Approach**
Presentation by Victor Cajala
- 01:25 PM – 01:35 PM** **The Effects of Spirituality on the Quality of Life Among Cancer Patients enrolled in the Out Patient Chemotherapy Clinic**
Presentation by Michael Ge-Ray H. Punzalan, RN, MD
- 01:35 PM – 01:45 PM** **Effectiveness of Self-Learning Modules on Students' Learning in English Amidst Pandemic**
Presentation by Husna Lumapenet
- 01:45 PM – 01:55 PM** **Culturally conditioned comprehension error in anthropological expert opinions in legal proceedings in the judicial district of Puno, Peru**
Presentation by Duverly Joao Incacutipa-Limachi
- 01:55 PM – 02:05 PM** **Tracing the Employability Success**
Presentation by Michelle Lei S Victorino
- 02:05 PM – 02:15 PM** **An Exploratory Study in Pakistan: Covid -19 Impact contrasting Socio-Economic statuses of people with OCD Patients and their coping strategies**
Presentation by Saadia Zakia Talib
- 02:15 PM – 02:25 PM** **The Impact of Green Intangible Asset, State Equity Participation on Indonesia Performance**
Presentation by Lenggogenil
- 02:25 PM – 02:35 PM** **Make sustainable green world by using Renewable energy**
Presentation by Arifa Parvin
- 02:35 PM – 02:45 PM** **Prediction and Analysis of Epitopes from the Human Marburg Virus: An Immunoinformatics Approach**
Presentation by Heherson S. Cabrera
- 02:45 PM – 02:55 PM** **Prediction of A Novel Epitope-Based Peptide Vaccine Against Plasmodium falciparum: An Immunoinformatics Approach**
Presentation by Heherson S. Cabrera



Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

- 02:55 PM – 03:05 PM** **Photo acoustic Imaging to predict tumour hypoxia and cell survival**
Presentation by M. Atif
- 03:05 PM – 03:15 PM** **Change Management and Enterprise Resource Planning (ERP) for Cloud Computing (CC) services based on Business Process Management (BPM): case of an oil exploration company**
Presentation by Rubén Alexander More Valencia

** Time Zone: Singapore Time Zone (GMT+8)

Technical Session II

- 03:50 PM – 04:00 PM** **Cultural management practices and conservation strategies on upland rice production**
Presentation by Onofre S Corpuz
- 04:00 PM – 04:10 PM** **Doctor bone 1.0: Didactic material for learning methods for estimating biological sex in anthropology**
Presentation by Jose yvan vargas bourguet
- 04:10 PM – 04:20 PM** **Leadership and Supervisory Skills and Change Management Practices Among School Heads :Basis for Strategic Plan Model**
Presentation by Dr. Jonathan H Marquez
- 04:20 PM – 04:30 PM** **Significance of the digital context in the new post-COVID university teaching role**
Presentation by Edgar Luis MartinezHuaman
- 04:30 PM – 04:40 PM** **Internship in times of pandemic: a qualitative phenomenological study**
Presentation by Tarhata S Guiamalon
- 04:40 PM – 04:50 PM** **Level of awareness on hidden curriculum among first year students in a philippine state university**
Presentation by Cristina Marie M. Juanzo Balderama
- 04:50 PM – 05:00 PM** **Meta Galaxy**
Presentation by Velliangiri



Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

DAY 2
29th October 2022

** Time Zone: Singapore Time Zone (GMT+8)

Program Schedule

| | |
|---------------------|---|
| 09:30AM – 9:50AM | Welcome speech by Moderator |
| 09:50 AM – 10:00 AM | Welcome Speech by Speical Guest |
| 10:00 AM – 10:30 AM | Speech by Keynote Speaker Prof. (Dr.) Dilip Nandkeolyar |
| 10:30 AM – 11:00 AM | Speech by Keynote Speaker Prof.(Dr) Raj Kumar Singh |
| 11:00 AM – 02:20 PM | Technical Session III Global Studies, Mathematical Sciences & Data Analytics, Networks of Economy and Trade |
| 02:20 PM – 02:50 PM | Lunch Break |
| 02:50 PM – 03:10 PM | Technical Session IV-A Session Speaker- Dr. Jyothi A P |
| 03:10 PM – 05:50 PM | Technical Session IV-A Information and Communication Technology,Wireless Communication System & Communication Engineering Technical Session IV-B Latest Research on Bioengineering |
| 05:50PM – 06:10PM | Valedictory function |
| 06:10PM – 06:20 PM | Vote of thanks |

Technical Session III

- 11:00 AM – 11:10 AM** **Assessment of housing conditions using socio-economic status (SES) indicators in coastal settlements: A case of Karumkulam Grama Panchayat, Thiruvananthapuram**
Presentation by Anukrishnan A S
- 11:10 AM – 11:20 AM** **The New Construction of Maluku Horizontal Bamboo Flute: 9 Finger Holes**
Presentation by Branckly egbert picanussa
- 11:20 AM – 11:30 AM** **Detoriation of iran’s policies towards afghan asylum seekers**
Presentation by Negin bavili
- 11:30AM – 11:40 AM** **Prediction of Delays in Invoice Payments using Machine Learning**
Presentation by Aruna Kashinath
- 11:40 AM – 11:50 AM** **Web-Based Student Assessment and Evaluation System for Measuring Education Quality**
Presentation by Aderonke Justina Ikuomola
- 11:50 AM – 12:00 PM** **Transforming Education: A Significant Leap from Traditional to Modern Education Space.**
Presentation by Dr Garima Srivastava
- 12:00 PM – 12:10 PM** **A Study of Economic Values of Thai Entrepreneurs across Various Generations: A Correspondence Analysis**
Presentation by Chutinon Putthiwanit
- 12:10 PM – 12:20 PM** **School of Architecture and Fine Arts, University of Phayao, Thailand**
Presentation by Dutrudee Makprasert
- 12:20 PM– 12:30 PM** **Sustainability in Construction Management Research: A Bibliometric Review**
Presentation by Husam Mansour
- 12:30 PM – 12:40 PM** **A Microsimulation of the Impact of Free Tuition Law on Income Inequality and Poverty Among Philippine Households**
Presentation by Richmond Keith N Simeon
- 12:40 PM – 12:50 PM** **Two-level authentication for the e-voting system using iot technology**

Conference
AgendaWorld Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

- 12:50 PM – 01:00 PM** *Presentation by KarthikaT*
Vehicle accident prevention using eye blink sensor
- 01:00 PM – 01:10 PM** *Presentation by S. Parasuraman*
Assessing the Level of Research Involvement and Productivity Among ISU Faculty
- 01:10 PM – 01:20 PM** *Presentation by Isagani M Valerozo*
Assessing the Level of Implementation and Efficiency of Administrative and Finance Services of LGU's on the 3rd District of Isabela
- 01:20 PM– 01:30 PM** *Presentation by Reynaldo M Brutas*
Factors Affecting Synchronous E-Learning amid Covid-19
- 01:30 PM – 01:40 PM** *Presentation by Rosalie C Leal*
Assessing Students' Preference and Perceptions for Online vs Face-to-Face Interaction
- 01:40 PM – 01:50 PM** *Presentation by Orpha S. Saguibo*
Civic Education Among College Students: A Case Study
- 01:50 PM – 02:00 PM** *Presentation by Julie Espinosa*
Graphical information system (gis) and analytical heirarchy process (ahp) technique for mungbean cultivation to geographical information system and analytical hierarchy process technique for mungbean cultivation.
- 02:00 PM – 02:10 PM** *Presentation by Mar Heisen A Yanos*
The impact of the livelihood extension program to the members of the rural achievers group isabela
- 02:10 PM – 02:20 PM** *Presentation by Renaldo G. Manipon*
Evaluation of the Developed AC/DC Motor Control Trainer with Uninterruptible Power Supply
- Presentation by Raymund G Velasco*

Technical Session IV- A

- 03:10 PM – 03:20 PM** Use of Machine Learning for Digital Manufacturing – Demonstration on an Industrial Use Case
Presentation by Rishabh Agarwal
- 03:20 PM – 03:30 PM** Survey on role of artificial intelligence in predicting mental alertness for physically active persons using eeg
Presentation by Keerthika N
- 03:30 PM – 03:40 PM** A survey on Artificial Intelligence algorithms associated to Sensory signal classification
Presentation by Anna Latha M
- 03:40 PM – 03:50 PM** Validity Deflection In Multilayer Test With SAP 2000
Presentation by Sabaruddin Hatta
- 03:50 PM – 04:00 PM** Development of web based Examination Question Bank Record Keeping System
Presentation by Dzulkipli Bin Marasan
- 04:00 PM – 04:10 PM** The implementation of the cebu technological university-wide interconnectivity project
Presentation by Johannes M Camasura
- 04:10 PM – 04:20 PM** Optimal Parameter Selection-based Deep Semi- Supervised Generative Learning and CNN for Ovarian Cancer Classification
Presentation by Pillai honey nagarajan
- 04:20 PM – 04:30 PM** Examining the Role of Perceived Value in Continue Adoption of Mobile Payment Platforms
Presentation by Jrjung Lyu
- 04:30 PM – 04:40 PM** Automation of library resources utilization
Presentation by Kelvin Kris C Gonzales
- 04:40 PM – 04:50 PM** EEG sensor-based frequency domain analysis for epileptic seizure detection
Presentation by Abhishek Parikh
- 04:50 PM – 05:00 PM** Artificial intelligence based smart pillow for patient monitoring
Presentation by Delshi Howsalya Devi. R

Conference
AgendaWorld Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

- 05:00 PM – 05:10 PM** Artificial intelligence based non invasive device for glucose monitoring
Presentation by Delshi Howsalya Devi. R
- 05:10 PM – 05:20 PM** Dairy farming using artificial intelligence
Presentation by Delshi Howsalya Devi. R
- 05:20 PM – 05:30 PM** Decision support system for the identification of skin melanoma using image processing
Presentation by Delshi Howsalya Devi. R
- 05:30 PM – 05:40 PM** Morse code translator using computer vision
Presentation by Delshi Howsalya Devi. R
- 05:40 PM – 05:50 PM** Text-to-image generator using artificial intelligence
Presentation by Delshi Howsalya Devi. R

Technical Session IV- B

- 03:10 PM – 03:20 PM** Analysis of an Embryonic Stem Cell Technology - Survey
Presentation by D kumutha
- 03:20 PM – 03:30 PM** An Epitome of Nanomedicine in Healthcare
Presentation by D Kumutha
- 03:30 PM – 03:40 PM** Diagnosis and Treatment of Gastric cancer using the Deep Learning
Presentation by Dr D Kumutha
- 03:40 PM – 03:50 PM** Design and implementation of a hybrid multilevel inverter with a reduced number of switches and harmonics
Presentation by Dr D Kumutha



Hybrid
Conference

Conference
Agenda

World Conference on Multidisciplinary
Research & Innovation (WCMRI-2022)

****END****


** Time Zone: Singapore Time Zone (GMT+8)

The New Construction of Maluku Horizontal Bamboo Flute: 9 Fingering Holes


Brankly Egbert Picanussa

Lecturer of Christian Arts Faculty and Post Graduate of State Institute of Christian Religion - Institut Agama Kristen Negeri (IAKN) Ambon

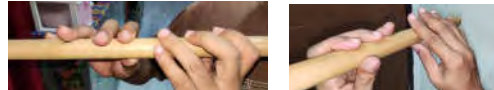
PLAY OTHER KEYS WITH F HORIZONTAL BAMBOO FLUTE, FOR INSTANCE G SCALE OR B FLAT SCALE OR C SCALE, WE HAVE TO CLOSE OR OPEN ABOUT HALF ON SPECIAL HOLE(S).



G SCALE




FIX DO SYSTEM: f# g a b c' d' e' f# g'
MOVABLE DO SYSTEM: 7 1 2 3 4 5 6 7 1'



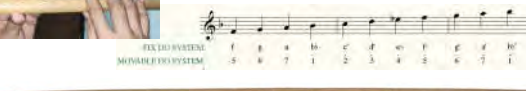
Abstract:-

HORIZONTAL BAMBOO FLUTE, CONSISTS OF 1 BLOWING HOLE AND 6 FINGERING HOLES, IS ONE OF TRADITIONAL MUSICAL INSTRUMENTS IN MALUKU WHICH IS USED TO PLAY CLEARLY TONES IN ONE KEY, FOR INSTANCE F SCALE.


THIS RESEARCH, WITH ACTION RESEARCH METHOD, SHOWS THE NEW HORIZONTAL BAMBOO FLUTE WITH 1 BLOWING HOLE AND 9 FINGERING HOLES IN THE KEY OF F CAN BE USED TO PLAY 4 KEYS, NAMELY F SCALE, G SCALE, B FLAT SCALE, AND C SCALE. THIS IS ONE OF THE DISTINCTIVENESS OF THE MALUKU CULTURE IN ART OF MUSIC.




B Flat's SCALE



FIX DO SYSTEM: f b a ba c' d' e' f g' a'
MOVABLE DO SYSTEM: 5 6 7 1 2 3 4 5 6 7 1'



C SCALE



FIX DO SYSTEM: c d e f g a b c'
MOVABLE DO SYSTEM: 1 2 3 4 5 6 7 1'

AS A RESULT, SOUND WHICH IS PRODUCED FOR SPECIAL TONE WILL NOT CLEAR.

CAN WE CONSTRUCT THE NEW HORIZONTAL BAMBOO FLUTE OF MALUKU TO PLAY 4 KEYS ON CLEAR TONE?

Introduction



FLUTE WITH 1 BLOWING HOLE AND 6 FINGERING HOLES IN THE KEY OF F USUALLY IS USED TO PLAY 1 KEY (F SCALE).



FIX DO SYSTEM: f g a b c' d' e' f'
MOVABLE DO SYSTEM: 1 2 3 4 5 6 7 1'

| Flute or Finger | Fingering |
|-----------------|-------------------------|
| 1 | [C] [x] [x] [x] [x] [x] |
| 2 | [C] [x] [x] [x] [x] [x] |
| 3 | [C] [x] [x] [x] [x] [x] |
| 4 | [C] [x] [x] [x] [x] [x] |
| 5 | [C] [x] [x] [x] [x] [x] |
| 6 | [C] [x] [x] [x] [x] [x] |
| 7 | [C] [x] [x] [x] [x] [x] |
| 8 | [C] [x] [x] [x] [x] [x] |
| 9 | [C] [x] [x] [x] [x] [x] |
| 10 | [C] [x] [x] [x] [x] [x] |
| 11 | [C] [x] [x] [x] [x] [x] |
| 12 | [C] [x] [x] [x] [x] [x] |
| 13 | [C] [x] [x] [x] [x] [x] |
| 14 | [C] [x] [x] [x] [x] [x] |
| 15 | [C] [x] [x] [x] [x] [x] |
| 16 | [C] [x] [x] [x] [x] [x] |
| 17 | [C] [x] [x] [x] [x] [x] |
| 18 | [C] [x] [x] [x] [x] [x] |
| 19 | [C] [x] [x] [x] [x] [x] |
| 20 | [C] [x] [x] [x] [x] [x] |
| 21 | [C] [x] [x] [x] [x] [x] |
| 22 | [C] [x] [x] [x] [x] [x] |
| 23 | [C] [x] [x] [x] [x] [x] |
| 24 | [C] [x] [x] [x] [x] [x] |
| 25 | [C] [x] [x] [x] [x] [x] |
| 26 | [C] [x] [x] [x] [x] [x] |
| 27 | [C] [x] [x] [x] [x] [x] |
| 28 | [C] [x] [x] [x] [x] [x] |
| 29 | [C] [x] [x] [x] [x] [x] |
| 30 | [C] [x] [x] [x] [x] [x] |
| 31 | [C] [x] [x] [x] [x] [x] |
| 32 | [C] [x] [x] [x] [x] [x] |
| 33 | [C] [x] [x] [x] [x] [x] |
| 34 | [C] [x] [x] [x] [x] [x] |
| 35 | [C] [x] [x] [x] [x] [x] |
| 36 | [C] [x] [x] [x] [x] [x] |
| 37 | [C] [x] [x] [x] [x] [x] |
| 38 | [C] [x] [x] [x] [x] [x] |
| 39 | [C] [x] [x] [x] [x] [x] |
| 40 | [C] [x] [x] [x] [x] [x] |
| 41 | [C] [x] [x] [x] [x] [x] |
| 42 | [C] [x] [x] [x] [x] [x] |
| 43 | [C] [x] [x] [x] [x] [x] |
| 44 | [C] [x] [x] [x] [x] [x] |
| 45 | [C] [x] [x] [x] [x] [x] |
| 46 | [C] [x] [x] [x] [x] [x] |
| 47 | [C] [x] [x] [x] [x] [x] |
| 48 | [C] [x] [x] [x] [x] [x] |
| 49 | [C] [x] [x] [x] [x] [x] |
| 50 | [C] [x] [x] [x] [x] [x] |
| 51 | [C] [x] [x] [x] [x] [x] |
| 52 | [C] [x] [x] [x] [x] [x] |
| 53 | [C] [x] [x] [x] [x] [x] |
| 54 | [C] [x] [x] [x] [x] [x] |
| 55 | [C] [x] [x] [x] [x] [x] |
| 56 | [C] [x] [x] [x] [x] [x] |
| 57 | [C] [x] [x] [x] [x] [x] |
| 58 | [C] [x] [x] [x] [x] [x] |
| 59 | [C] [x] [x] [x] [x] [x] |
| 60 | [C] [x] [x] [x] [x] [x] |
| 61 | [C] [x] [x] [x] [x] [x] |
| 62 | [C] [x] [x] [x] [x] [x] |
| 63 | [C] [x] [x] [x] [x] [x] |
| 64 | [C] [x] [x] [x] [x] [x] |
| 65 | [C] [x] [x] [x] [x] [x] |
| 66 | [C] [x] [x] [x] [x] [x] |
| 67 | [C] [x] [x] [x] [x] [x] |
| 68 | [C] [x] [x] [x] [x] [x] |
| 69 | [C] [x] [x] [x] [x] [x] |
| 70 | [C] [x] [x] [x] [x] [x] |
| 71 | [C] [x] [x] [x] [x] [x] |
| 72 | [C] [x] [x] [x] [x] [x] |
| 73 | [C] [x] [x] [x] [x] [x] |
| 74 | [C] [x] [x] [x] [x] [x] |
| 75 | [C] [x] [x] [x] [x] [x] |
| 76 | [C] [x] [x] [x] [x] [x] |
| 77 | [C] [x] [x] [x] [x] [x] |
| 78 | [C] [x] [x] [x] [x] [x] |
| 79 | [C] [x] [x] [x] [x] [x] |
| 80 | [C] [x] [x] [x] [x] [x] |
| 81 | [C] [x] [x] [x] [x] [x] |
| 82 | [C] [x] [x] [x] [x] [x] |
| 83 | [C] [x] [x] [x] [x] [x] |
| 84 | [C] [x] [x] [x] [x] [x] |
| 85 | [C] [x] [x] [x] [x] [x] |
| 86 | [C] [x] [x] [x] [x] [x] |
| 87 | [C] [x] [x] [x] [x] [x] |
| 88 | [C] [x] [x] [x] [x] [x] |
| 89 | [C] [x] [x] [x] [x] [x] |
| 90 | [C] [x] [x] [x] [x] [x] |
| 91 | [C] [x] [x] [x] [x] [x] |
| 92 | [C] [x] [x] [x] [x] [x] |
| 93 | [C] [x] [x] [x] [x] [x] |
| 94 | [C] [x] [x] [x] [x] [x] |
| 95 | [C] [x] [x] [x] [x] [x] |
| 96 | [C] [x] [x] [x] [x] [x] |
| 97 | [C] [x] [x] [x] [x] [x] |
| 98 | [C] [x] [x] [x] [x] [x] |
| 99 | [C] [x] [x] [x] [x] [x] |
| 100 | [C] [x] [x] [x] [x] [x] |

Method

THIS RESEARCH USES STRINGER MODEL OF ACTION RESEARCH METHOD. THIS MODEL HAS THREE BASIC FRAMEWORKS, WHICH ARE SEEING, THINKING, AND ACTING. THE ACT OF SEEING IS PART TO COLLECT DATA AND INFORMATION RELATING TO HORIZONTAL BAMBOO FLUTE AND THE THEORY OF THE DISTANCE BETWEEN HOLES; THE ACT OF THINKING IS AN ACTIVITY TO EXPLORE AND INTERPRET, ADD AND MODIFICATION THE DISTANCE OF THE HORIZONTAL BAMBOO FLUTE. MEANWHILE, ACTING IS AN ACTIVITY OF IMPLEMENTING THE DISTANCE OF HOLES FOR HORIZONTAL BAMBOO FLUTE 9 FINGER HOLES, MAKING HOLES, AND COUNTING THE FREQUENCY OF TONES.

IFERP
emerging engineers... developing research

WCMRI

RESULT

Based on the Mark Shepard distance formula and modification to special holes and places, the researcher added three holes (48%, 63%, 88%) to construct new Maluku horizontal bamboo flute.

48% 63% 88%

The New Construction of Maluku Horizontal Bamboo Flute: 9 Fingering Holes

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

IFERP
emerging engineers... developing research

WCMRI

Fingering chart of F scale

| Tone in Moveable do System | Fingering |
|----------------------------|---------------------|
| 1 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

IFERP
emerging engineers... developing research

WCMRI

The measurement of the frequency of the notes from a 9-hole fingering bamboo flute using a digital tuner can be seen in the following table.

| Tone in Fix do System | Tone in Moveable do System | Frequency (Hz) | Equal Temperament |
|-----------------------|----------------------------|----------------|-------------------|
| F4 | 1 | 349 | -10 s.d. +10 |
| F4 [#] | 1 [#] | 369 | -10 s.d. +10 |
| G4 | 2 | 392 | -10 s.d. +10 |
| A4 | 3 | 440 | -10 s.d. +10 |
| B4 | 4 | 466 | -10 s.d. +10 |
| B5 | 4 [#] | 493 | -10 s.d. +10 |
| C5 | 5 | 523 | -10 s.d. +10 |
| D5 | 6 | 587 | -10 s.d. +10 |
| D5 [#] | 7 [#] | 622 | -10 s.d. +10 |
| E5 | 7 | 659 | -10 s.d. +10 |
| F5 | 1 [#] | 698 | -10 s.d. +10 |
| F5 [#] | 1 ^{##} | 739 | -10 s.d. +10 |
| G5 | 2 [#] | 783 | -10 s.d. +10 |
| A5 | 3 [#] | 880 | -10 s.d. +10 |
| Bb5 | 4 [#] | 932 | -10 s.d. +10 |
| B5 [#] | 4 ^{##} | 987 | -10 s.d. +10 |
| C6 | 5 [#] | 1046 | -10 s.d. +10 |
| D6 | 6 [#] | 1174 | -10 s.d. +10 |
| E [#] 6 | 7 ^{##} | 1244 | -10 s.d. +10 |
| F6 | 7 [#] | 1318 | -10 s.d. +10 |
| F6 [#] | 1 ^{##} | 1396 | -10 s.d. +10 |

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

IFERP
emerging engineers... developing research

WCMRI

Fingering chart of G scale

| Tone in Moveable do System | Fingering |
|----------------------------|---------------------|
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

IFERP
emerging engineers... developing research

WCMRI

The measurement of the frequency of the notes from a 9-hole fingering bamboo flute using a digital tuner can be seen in the following table.

| Tone in Fix do System | Tone in Moveable do System | Frequency (Hz) | Equal Temperament |
|-----------------------|----------------------------|----------------|-------------------|
| F4 | 1 | 349 | -10 s.d. +10 |
| F4 [#] | 1 [#] | 369 | -10 s.d. +10 |
| G4 | 2 | 392 | -10 s.d. +10 |
| A4 | 3 | 440 | -10 s.d. +10 |
| B4 | 4 | 466 | -10 s.d. +10 |
| B4 | 4 [#] | 493 | -10 s.d. +10 |
| C5 | 5 | 523 | -10 s.d. +10 |
| D5 | 6 | 587 | -10 s.d. +10 |
| E5 | 7 | 659 | -10 s.d. +10 |
| F5 | 1 [#] | 698 | -10 s.d. +10 |
| F5 [#] | 1 ^{##} | 739 | -10 s.d. +10 |
| G5 | 2 [#] | 783 | -10 s.d. +10 |
| A5 | 3 [#] | 880 | -10 s.d. +10 |
| Bb5 | 4 [#] | 932 | -10 s.d. +10 |
| B5 [#] | 4 ^{##} | 987 | -10 s.d. +10 |
| C6 | 5 [#] | 1046 | -10 s.d. +10 |
| D6 | 6 [#] | 1174 | -10 s.d. +10 |
| E [#] 6 | 7 ^{##} | 1244 | -10 s.d. +10 |
| F6 | 7 [#] | 1318 | -10 s.d. +10 |
| F6 [#] | 1 ^{##} | 1396 | -10 s.d. +10 |

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

IFERP
emerging engineers... developing research

WCMRI

Fingering chart of B flat scale

| Tone in Moveable do System | Fingering |
|----------------------------|---------------------|
| 5 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 6 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 7 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 1 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 2 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 3 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 [#] | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 4 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |
| 5 ^{##} | ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ |

World Conference on Multidisciplinary Research & Innovation (WCMRI-2022)

Fingering chart of C scale



| Tone in Mouth & System | Fingering |
|------------------------|-----------|
| 4 | •••••• |
| 4 [#] | •••••• |
| 5 | •••••• |
| 6 | •••••• |
| 7 ^b | •••••• |
| 7 | •••••• |
| 1 | •••••• |
| 2 | •••••• |
| 2 [#] | •••••• |
| 3 | •••••• |
| 4 [#] | •••••• |
| 4 | •••••• |
| 5 [#] | •••••• |
| 6 [#] | •••••• |
| 7 [#] | •••••• |
| 7 ^b | •••••• |
| 1 [#] | •••••• |
| 1 ^b | •••••• |
| 2 [#] | •••••• |
| 2 ^b | •••••• |
| 3 [#] | •••••• |
| 3 ^b | •••••• |
| 4 [#] | •••••• |
| 4 ^b | •••••• |

Conclusion:

- ONE OF TRADITIONAL MUSICAL INSTRMENT IN MALUKU IS HORIZONTAL BAMBOO FLUTE IN THE KEY OF F WITH 1 BLOWING HOLE AND 6 FINGERING HOLES.
- ADDING THREE HOLES ON THE FLUTE MAKE MALUKU HORIZONTAL BAMBOO FLUTE HAS NEW CONSTRUCTION (9 FINGERING HOLES) AND CAN BE USED TO PLAY FOUR KEYS (F, G, B FLAT, C) IN ONE FLUTE.

To Know Research Updates, Download App Now



INTRODUCING OUR
IFERP
Mobile App



Thanking you...!!