Since 1985

Long Win

Science & Technology Corporation

Forum

TEL:+886-3-464-3221
E-mail: longwin@longwin.com
Web Site: www.longwin.com

V 1.4 ENG

Long Win Forum

– Sharing, Legacy,& CSR–

Groups are welcomed.	Keynote speech Theme discussion General Tour	Reservation available

Company, Schools, and Clubs are welcomed.
For the public, topics will be announced.

Keynote Speech

No.	Topics
A	ICT • Thermal Management • Technology Case study: >100 projects done since 2016
B	Philosophy in the business world In a view of an entrepreneur
C	Philosophy in life
D	Philosophy in education
E	Sharing from VIP Speakers

A. ICT • Thermal Management • Technology
From Why to How
Speakers: Joseph Lee, John Lee

	Topics
I	Advanced Thermal Solution for Data Center
II	Liquid Cooling
III	Single phase Immersion Cooling
IV	2 phase Immersion Cooling
V	Reliability of Liquid Cooling system
VI	Fan performance from a microscopic view
VII	Fan performance rating and verification
VIII	Fan performance standards and apparatus
IX	Transient UTVC thermal performance
X	Case study of X-Ray 3D scanning

Long Win has Study Advanced Thermal Solutions for Data Center since 2016

1.Liquid Cooling Tester:
>20 finished projects

2.Liquid – Air CDU and Rack:
>16 finished projects / various types

3.Liquid – Liquid CDU and Rack:
>8 finished projects / various types

4.Single-Phase Immersion POC:
>10 finished projects / various types

5.Single-Phase Immersion Rack Level Tank:
>10 finished projects / various types

6.Two-Phase Immersion POC:
>10 finished projects / various types

7.Two-Phase Immersion Rack Level Tank:
>2 finished projects / various types

What can we apply next?

1. Closed-Loop Liquid Cooling !
2. Opened-Loop Liquid Cooling !
3. Two Phase Liquid Cooling !!!
4. Single phase Immersion Cooling ?
5. Two Phase Immersion Cooling ??

Long Win involves in all the projects above.

I.Advanced Thermal Solution for Data Center

1. Single-Phase Liquid Cooling
2. Single-Phase Immersion Cooling
3. Two-Phase Immersion Cooling
4. Must or Selection

II. Liquid Cooling

1.Rear Door Liquid-Air Liquid Cooling

2. Standalone Liquid-Air Liquid Cooling

3. Liquid-Liquid Liquid Cooling

4. Design Path

5. Thermal Reliability of Liquid Cooling

6. Performance Test
   a. Thermal Test
   b. P-Q Test
   c. Component Test

III . Single-phase Immersion Cooling

1.Heat Sink / Liquid Circuit / Pump

2. Working Fluid

3. Thermal Performance

4. Material, Welding and Surface Treatment

5. Performance, Compatibility & Reliability Test

IV . 2-phase Immersion Cooling

1.Boiler / Condenser / Tank / Sealing

2. Working Fluid

3. Thermal Performance

4. Material, Welding and Surface Treatment

5. Performance, Compatibility & Reliability Test

V. Reliability of Liquid Cooling & Immersion Cooling system

Reliability study in a liquid-cooled system about performance and compatibility validation among working fluid and materials

Corrosion-Material properties & electrochemical analysis

1. Material, Welding and Surface Treatment
2. Chemical Test
3. Hose, Seal and Pressure
4. Pumping

Apparatus used:

PY-GC-MS、ICP-OES、DSC、TGA、SEM、FTIR、X-Ray CT XRF、Helium Leak Detector、 Metallographic microscope & Network Analyzer.....

VI. Fan performance from a microscopic view

Where the flow, noise, and vibration are generated

1.	Flow patterns at a free flow or with back pressure at 100 kHz
2.	Pressure distribution at a free flow or with back pressure at 100 kHz
3.	Flow pattern vs. noise
4.	Vibration vs. system
5.	Overall efficiency evaluation

Apparatuses used – LDA, 3D PTV, Spectrum Analyzer,
100 kHz Pressure sensor, Acceleration sensor, Mini-Torque senser ..

VII. Fan performance rating and verification

1. Verification of test apparatus
2. Nozzle profile and its coefficient of discharge
3. Validation of flow rate accuracy
4. Apparatus vs. suitable fan under test
5. Long-term traceability & acceptance criteria
6. Nozzle Quality Verification:

Scan here →

VIII . Fan Performance Standards

1.International standards

ISO 5801, BS 848, CNS 7778, DIN 24163, GB/T1236, JIS B8330, AMCA 210

2. Accreditation Institutes and Scopes

3. TAF and ILAC Accreditation

4. International quality assurance

IX . Transient UTVC thermal performance

Published by Chinese Society for Measurement

1. Transient Thermal Conductivity
2. Non-contact laser heating; Jet cooling
3. Real-time laser power control and measurement
4. Heat insulation vs. UTVC performance

X . X-Ray 3D Scanning – Case Study

240 kV, 320 W, Resolution 1μm
Sample dimension: 300 X 300 X 400 mm
To see interfaces, gaps, porous %, density difference, pressure gradient, flow tendency, etc.

1.	**Wick structures in a heat pipe**
2.	**Wick and supporting structures, welding conditions of a vapor chamber**
3.	**Structure and welding conditions after fabrication or pressure test**
4.	**Wick structures of a boiler**
5.	**Non-destructive structure test**

B. Philosophy in the business world (1)
Speakers: Joseph Lee

No.	Topics
1.	How to Join ICT and emerging industries with merits
2.	**Research Strategies** 1. Passive vs. Proactive 2. Risk or opportunity?
3.	**Marketing Strategies** Trust and rely; Acclaims and real sales The best: By word of mouth; Dignity The worst: Dishonest and immorality
4.	**Staff development:** Perception, placement, trust and potential
5.	**To earn values** Management and innovation, KPI, 6σ, OKR, ESG, CRM, antidotes or poisons…

B. Philosophy in the business world (2)

6.	**Business Management Strategies** 1. The position in a supply chain 2. The value of products 3. Organization: Administrator, marketing, finance, R&D, Production, Legal, Procurement, Labor Safety, Information Safety: Pros and Cons? 4. Rise from a garage? Fall of a giant enterprise? 5. Pursue the large scale? Earn with merits and values?
7.	**Relationship between a buyer and a supplier** 1. Strategies for mutual benefits 2. Different scenarios with different positioning in a supply chain
8.	**Pricing – based on cost or value?**
9.	Automation – Antidotes or poisons?
10.	**Case study from daily news**

C. Philosophy in life

Speakers: Joseph Lee

No.	Topics
1.	**Health Care**
2.	Interpersonal Relationship
3.	**How to deal with things**
4.	A broader perspective

D. Philosophy in Education

Speakers: Joseph Lee

No.	Topics
1.	Knowledge, innovation and action
2.	Popular Fluid Science
3.	Videos and photos of flow visualization
4.	Family education
5.	Professional education

E. VIP Speakers

During weekends

Plan: 12 sessions per year

Wisdom sharing is welcomed.

Language: Chinese or English

F. Keynote Speeches in Universities

1.The Innovation Forum

2. The essence and implementation of innovation

3. The source of creativity: Do what you love

4. Enterprise sustainable development

5. Mechanical Practices, Principles and Knowledge

6. Engineering Practices: Creativity, Learning Methodology, and Motivation

7. Research and Development in an enterprise

8. Strategies for creativity and start-ups

9. Implement 5% the educational content, let enthusiasm shine in life

10. How to earn a living with dignity and confidence,and create eternal value

11. Turn Knowledge into Real Achievement

12. My Philosophy in Life