

宸軒科技有限公司

散熱\_光源模組

報告人：廖仕傑

- ✓ *The leading Supplier for IC and LED industry including*
  - LED / IC Precision Spare Parts
  - Carriers for Process Handling (film frame and cassette)
  - LED Illuminators for Machine Vision
- ✓ *Qualified as Technology/Quality leading Supplier by most Customers, such as*



**Lextar**

**Chroma**

SEMILEDs

EPISTAR



**EVERLIGHT**

**YTEC** 久元電子  
YoungTek Electronics Corp.

**HUGA** 廣錄光電  
HUGA OPTOTECH INC.

**GENESIS**  
photonics

ASM 

**EPILEDs**  
Epileds Technologies, Inc.

**EVERVISION**  
億力光電股份有限公司



 **ASE KAOHSIUNG**

 **Powertech**  
PTI Technology Inc. 

### 建立3D幾何模型

- 匯入3D CAD檔(左：上視圖，中：前視圖，右：等角視圖)

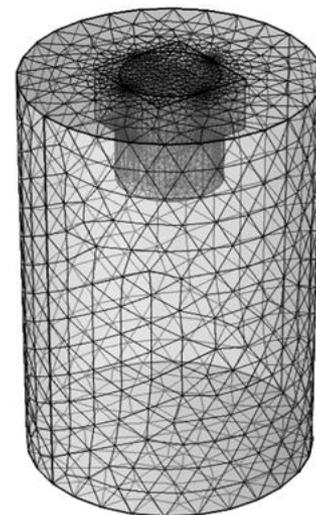


### 建立模型

- COMSOL
- Rotating Machinery
- Nonisothermal Flow 介面
- Standard  $k-\epsilon$  turbulence flow model

### 網格

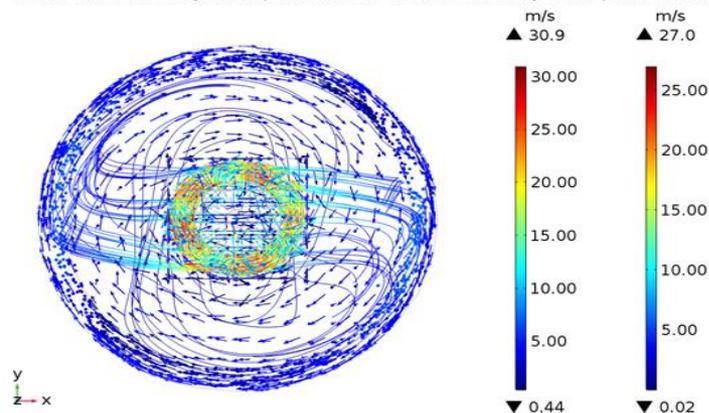
- 網格選用細緻的自由四面體網格剖分(free tetrahedral with a fine mesh)。選用之元素大小參數為：最大0.0135 m，最小0.00169 m，最大成長率：1.45，曲線因素：0.5，狹窄區域解析度：0.6。



### 模擬結果：流場

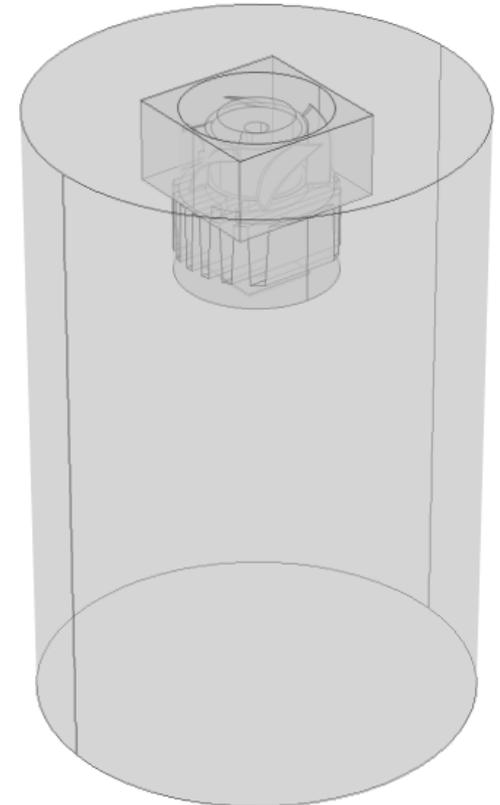
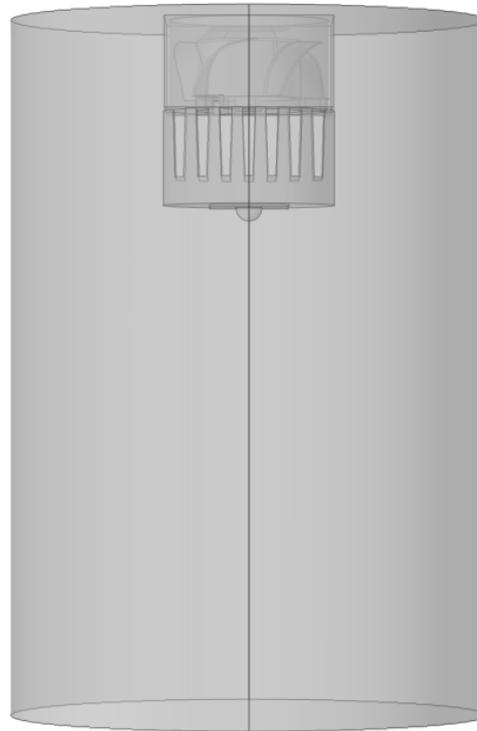
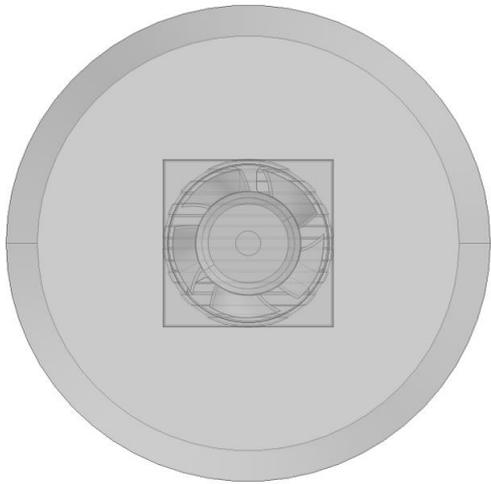
- 上視圖

Arrow Surface: Velocity field (spatial frame) Streamline: Velocity field (spatial frame)



## 建立3D幾何模型

- 匯入3D CAD檔(左：上視圖，中：前視圖，右：等角視圖)

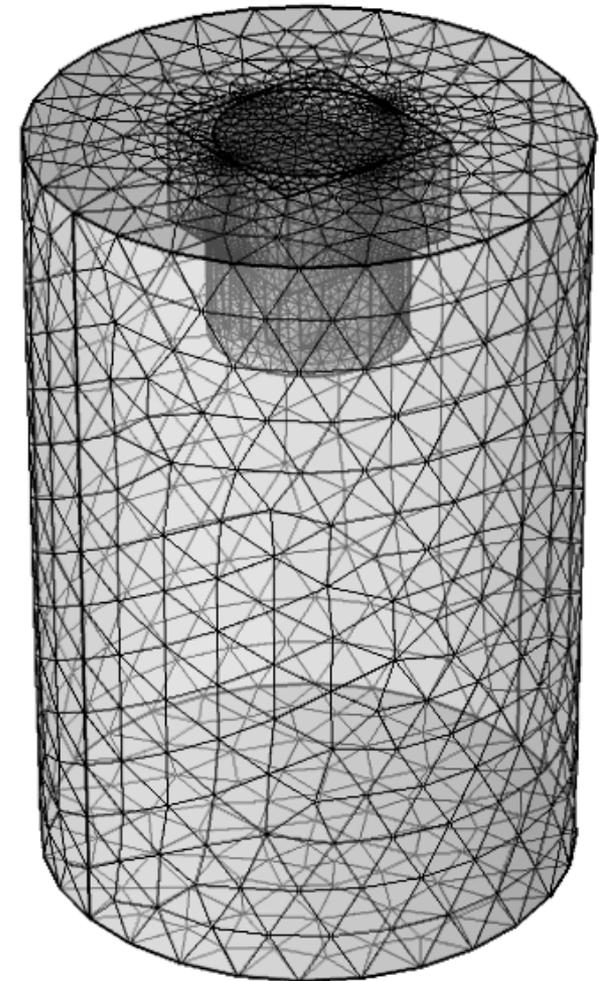


### 建立模型

- **COMSOL**
- **Rotating Machinery**
- **Nonisothermal Flow** 介面
- **Standard  $k$ - $\varepsilon$  turbulence flow model**

## 網格

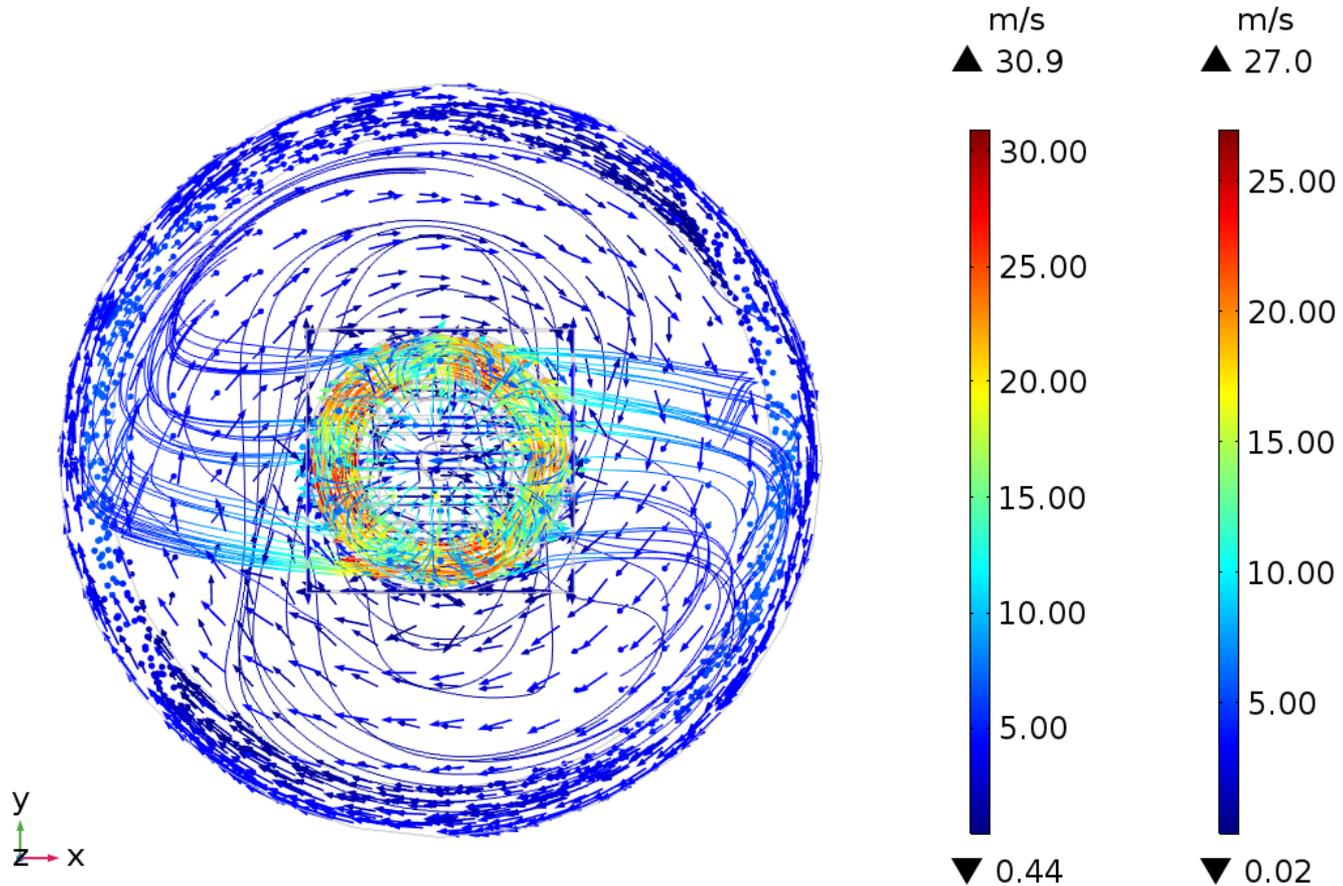
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### 模擬結果：流場

- 上視圖

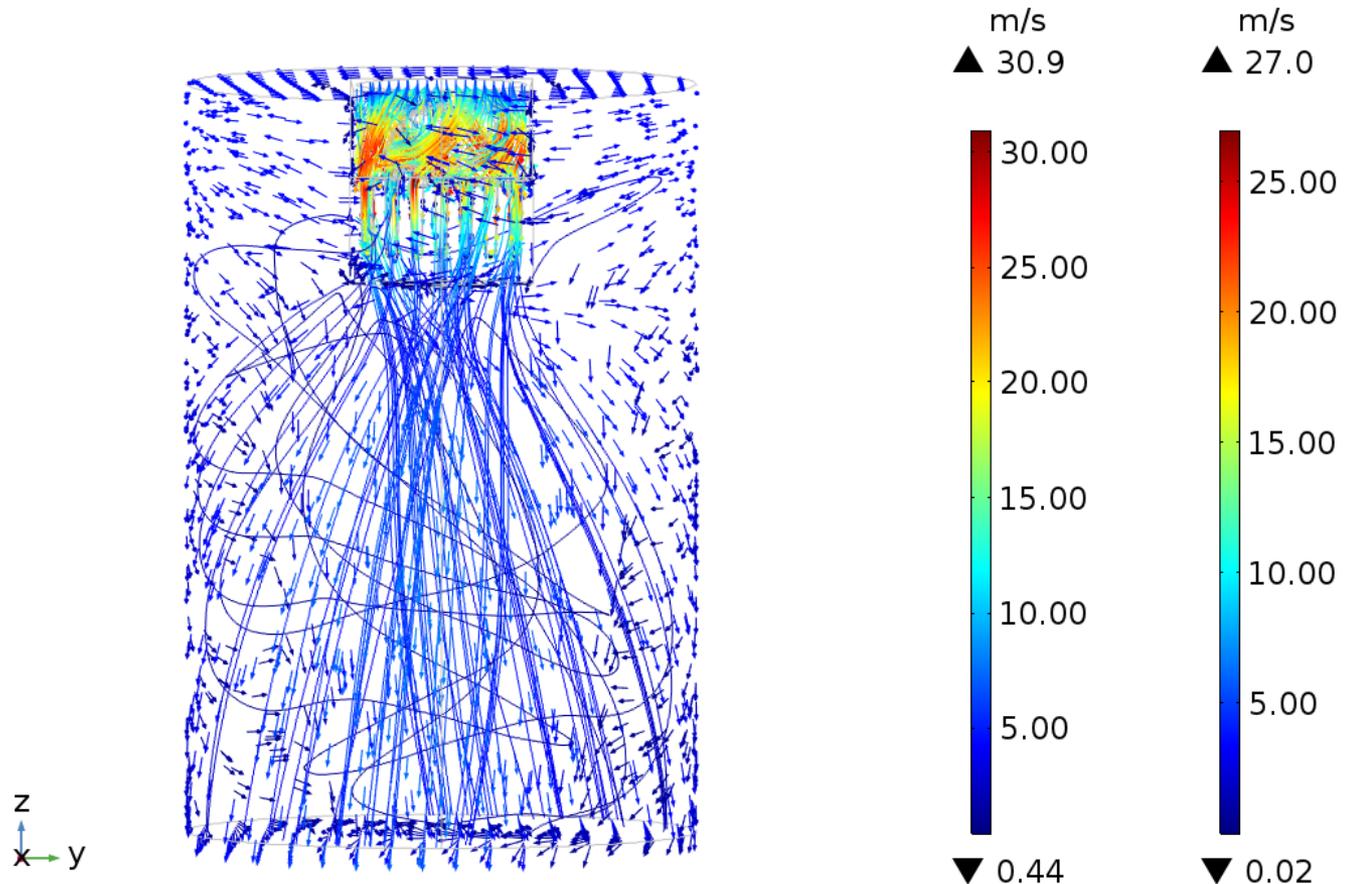
Arrow Surface: Velocity field (spatial frame) Streamline: Velocity field (spatial frame)



### 模擬結果：流場

- 前視圖

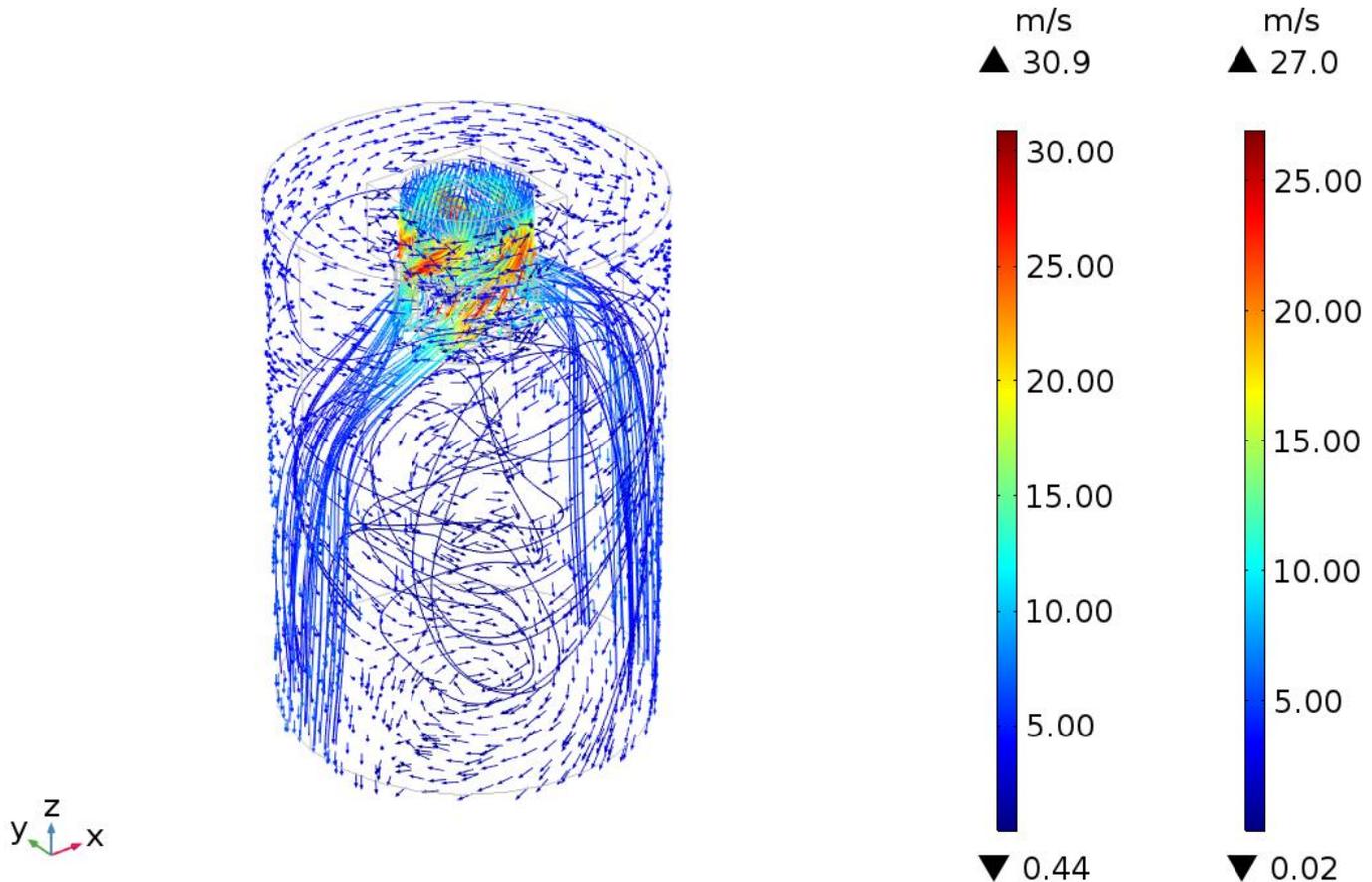
Arrow Surface: Velocity field (spatial frame)    Streamline: Velocity field (spatial frame)



### 模擬結果：流場

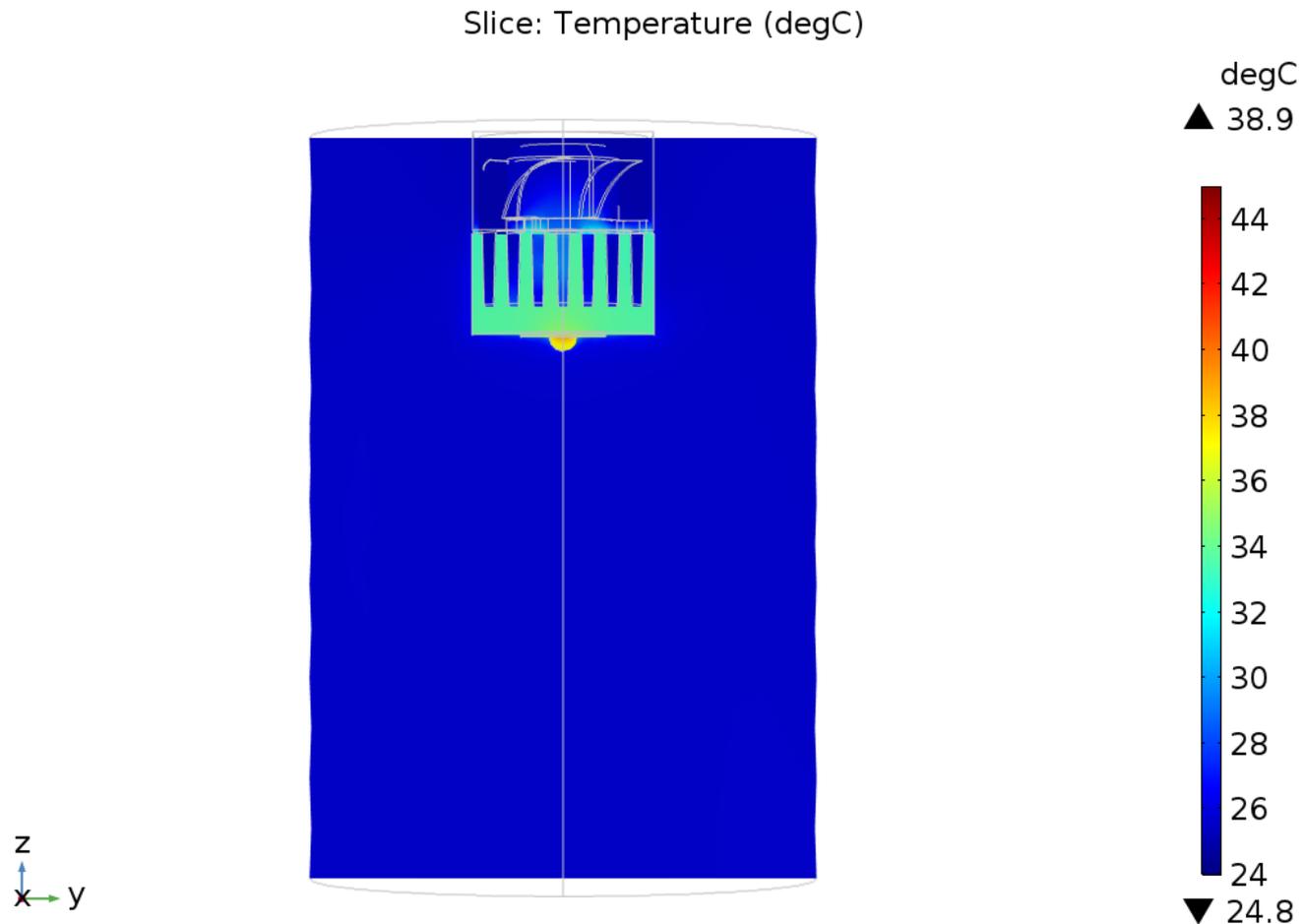
- 等角視圖

Arrow Surface: Velocity field (spatial frame)    Streamline: Velocity field (spatial frame)



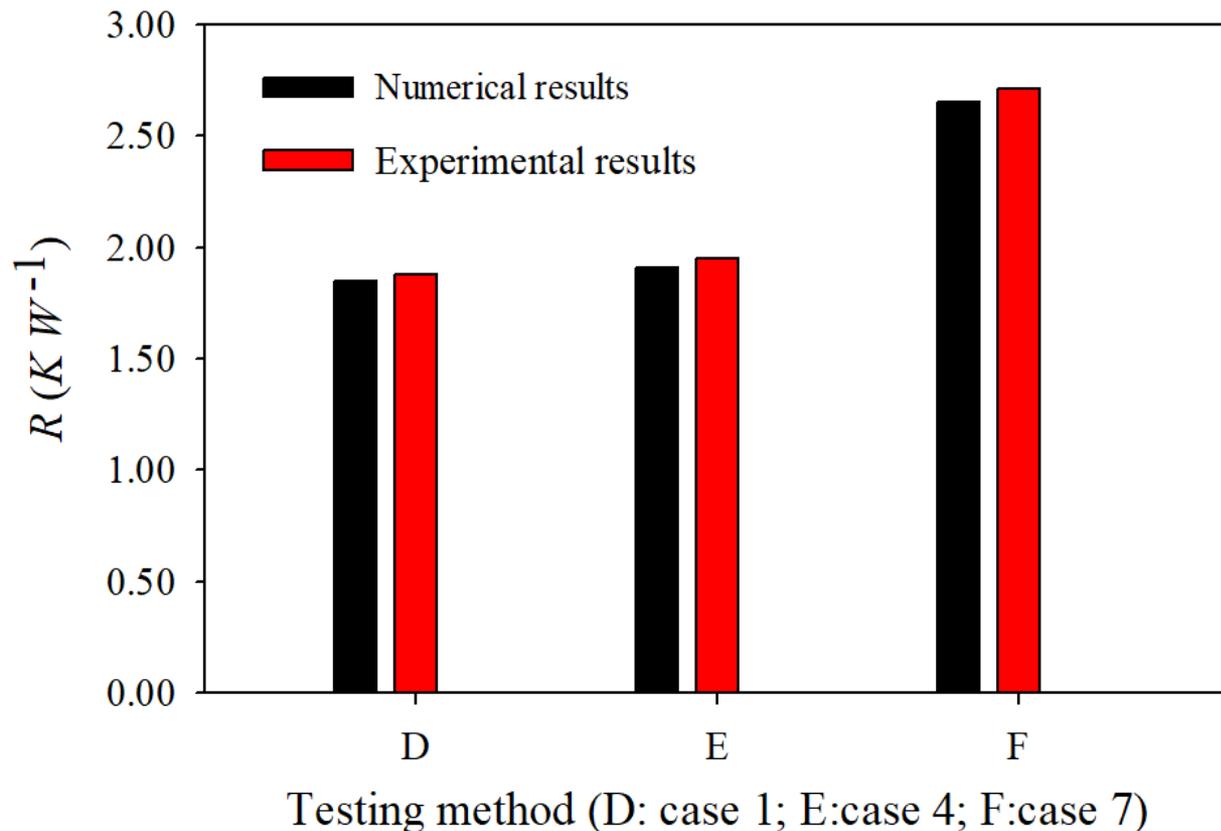
### 模擬結果：溫度場：以鋁鰭片為例

- 前視圖



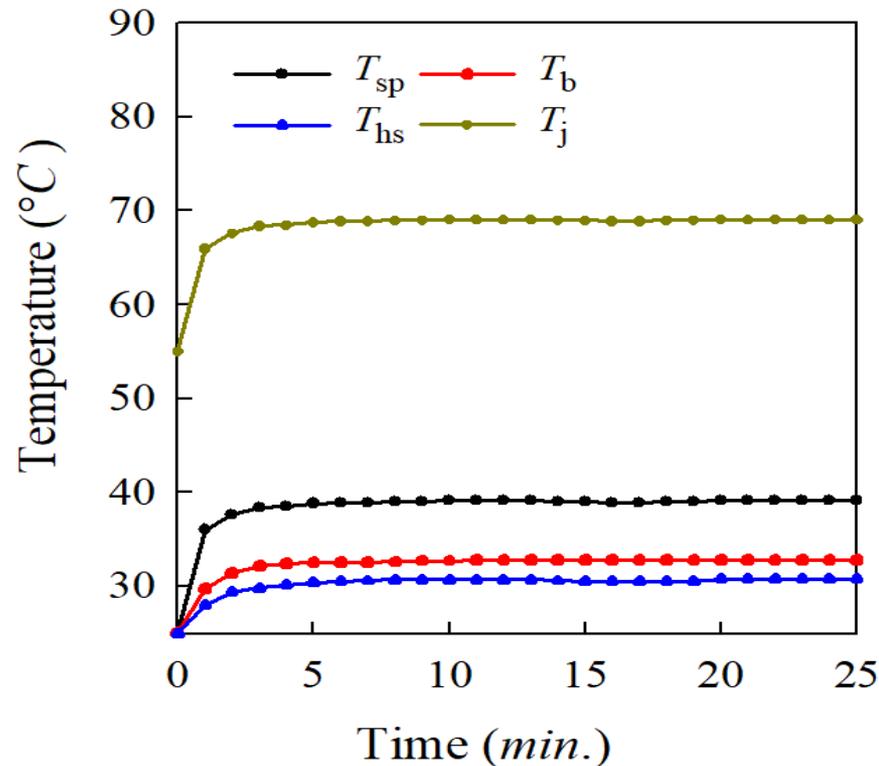
## 模擬與實驗結果：熱阻分析

- 數值模擬與實驗比較之範例：D：無外殼於雷諾數 16916，E：無外殼於雷諾數 6594，F：有外殼於雷諾數



## 實驗結果：各點熱偶溫度量測

- 以J-type熱偶線加資料蒐集器記錄各指定點溫度曲線(量測120分鐘，因快速於10分鐘內達穩定溫度，因此曲線圖取至25分鐘以達到穩態狀態)。



# Thank you !

We look forward to support your needs.