

# TPCA 2026 電路板暨構裝菁英學生優秀論文獎

## 產學同心異質整合 精彩未來由此開展

- 一、**辦理緣由**：台灣電路板協會為培養產業專業人才，並致力於電路板與半導體構裝技術之研發與創新，特籌畫本活動，以鼓勵優秀青年學子投入電路板研究工作、撰寫相關論文，獎勵電路板與半導體構裝之學術研究。
- 二、**主辦單位**：台灣電路板協會
- 三、**申請資格**：經教育部認可之中華民國大學校院在校大學生、碩博士生(含非本國籍生)。
- 四、**辦理時程**：**【F】** 各項公版格式，可上《[IMPACT 投稿頁面](#)》進行下載使用。

時間	項目	說明
6/22 前	摘要截稿	請上傳至 <a href="http://www.impact.org.tw">www.impact.org.tw</a> 投稿，英文 400-500 字 <b>【F】</b>
7/20 前	入選通知	發信通知摘要入選者
8/21 前	議程公告	將於 IMPACT 網站公告論文所屬場次，參賽者均須報名繳費
8/28 前	全文截稿	請上傳至 <a href="http://www.impact.org.tw">www.impact.org.tw</a> ，英文全文 4 頁 <b>【F】</b>
	IEEE 版權	提供 IEEE Form，論文可收錄至 IEEE Xplore <b>【F】</b>
10/20- 10/22	論文發表	書面：於 2027 TPCA Show 《菁英學生優秀論文主題區》海報呈現 <b>【F】</b>
	(TPCA Show & IMPACT)	口頭：於 IMPACT Conference 英文口語發表 <b>【F】</b>
		入圍者，於 IMPACT Conference 進行論文發表
12/31 前	全文複審	在此階段評選出得獎者
2027. 03	得獎通知	發信通知得獎者
2027. 10	頒獎典禮	請得獎者出席 TPCA Show 晚宴，進行領獎

### 五、投稿領域：

#### **【 PCB 】**

代碼	領域
B1	<b>Sustainable Materials and Manufacturing Technology</b>
	Green materials (lead-free, halogen-free, PFAS free, energy saving, recycling, reusing, reducing etc.), Low carbon emission process and manufacturing.
B2	<b>Smart Manufacturing, Inspection and Testing</b>
	Modeling and simulation techniques, Intelligent control and manufacturing, Automatic control system and Process integration. Feature testing and verification, Inspection (AOI, non-destructive testing etc.), Signal and power integrity measurement and evaluation, Failure mechanism analysis.
B3	<b>HDI PCB, IC Substrate and FPC Technology</b>
	SAP and m-SAP process, Build-up board, Micro-vias and copper deposition and plating process, Multilayer core and coreless, Advanced flex, Chip on flex and Rigid-flex.
B4	<b>Advanced and Emerging Technology</b>
	High speed transmission technology and materials for AI and sever applications, High frequency circuitry technology and materials for mini-wave applications, High power and thermal dissipation, Embedded devices, Photo and non-photo dielectric for high density circuits and advanced package substrate materials and process.

**【 Packaging 】**

P1	<p><b>Advanced Packaging Technologies</b></p> <p><u>Packaging configuration :</u> AI/HPC-driven advanced packaging architectures, Wafer-level packaging, Panel-level packaging, Flip chip packaging, Chip scale packaging, Fan-in/fan-out technologies, Multi-chip modules, High performance computing package, Fine pitch/high pin packaging solution, Co-Packaged Optics.</p> <p><u>Heterogeneous integration:</u> High performance computing heterogeneous integration (side-by-side integration, vertical stacking integration, chiplet, high bandwidth memory), Mobile heterogeneous integration (SiP, PoP, PiP etc.)</p> <p><u>nD architectures :</u> Si/Glass /Organic interposer, Si bridge, Glass substrate, Advanced substrate, 3DIC, Hybrid bonding, TSV, TGV, Wafer bonding, and Other new technologies for advanced microelectronics.</p> <p><u>MEMS:</u> Microsystem packaging, New MST-enabled possibilities, New sensing and actuation mechanisms Multi-physics simulation of microsystems, New materials and processes for MST, Testing and calibration of microsystems, and Sensing, actuation and control circuits on microsystems.</p>
P2	<p><b>Power Electronics Packaging</b></p> <p>Si/GaN/SiC/ Ga2O3 based power device and module (IGBT, MOSFET, HEMT, diode, IPM etc.), Power electronic module systems (inverter, converter, rectifier etc.); Fabrication and assembly, Low-temperature bonding, Sintered Ag/Au bonding, Solid-Liquid Interdiffusion (SLID) bonding, Interconnection (wire-bonding, Cu clip bonding, chip embedded PCB etc.), Encapsulant material, Advanced cooling system, Ceramic substrate technologies (DBC, IMS, DPC, AMB etc.), High-performance passive components (super capacitor, inductor etc.), and Other related technologies.</p>
P3	<p><b>Interconnections &amp; Nanotechnology</b></p> <p>Interconnect technologies on all packaging levels (wire bonding, flip chip and TSV connections, first-level package etc.), Special emphasis on design and process of solder alternatives (ICP, ACP, ACF, NCP etc.), Under bump metallurgy, Electromigration, Micro-bump, Substrate technology, Novel enabling techniques, Electrical performance, and Environmental concerns.</p>
P4	<p><b>Design, Modeling, AI/Machine Learning Applications, and Testing</b></p> <p><u>Design for reliability :</u> Electrical, optical, thermal and mechanical modeling &amp; design; Component-, board- and system-level reliability, Interfacial adhesion strength, Advanced testing and measurement techniques, Advances in reliability test methods and failure analysis.</p> <p><u>Digital Twins :</u> Design of experiment, Design optimization, AI/machine learning applications, Design-on-Simulation technologies and tools, Design rule development, Virtual prototyping in product and/ or process design. AI/ML-driven design automation, Data-driven defect analytics.</p> <p><u>Chiplet System design :</u> From micro to macro simulation, Multi-physics simulation, and Thermal management (materials, heat sink, heat pipe, fan, thermal interface material, package-, board- and system level thermal design, measurement technology, two-phase heat transfer, air cooling/liquid cooling, immersion cooling, emerging cooling technology, thermoelectric cooling &amp; generation etc.).</p>
P5	<p><b>Advanced Materials, Automatic Process &amp; Assembly</b></p> <p>Materials and automatic processes for 2D/3D microelectronics, Sustainable and low-carbon materials, Smart manufacturing with in-situ monitoring, and MEMS, sensor and microsystem packaging, including adhesives, encapsulates, lead free solders and alloys, thermal interface materials, high/low-k dielectrics and substrates, thin films, TSV drilling/etching, plating, low temperature bonding, assembly processes, and equipment for automation.</p>
P6	<p><b>Emerging Systems Packaging Technologies</b></p> <p>Embedded passives &amp; actives on substrates, Packaging solutions for RF-microwave, bioelectronics, automotive electronics, photonics, micro-LED, and medical electronics, Wearable/flexible technologies and Other novel system packaging technologies.</p>
P7	<p><b>Sustainable Technologies &amp; Systems</b></p> <p>Green and sustainable electronics, Net zero strategy/technology, Green packaging, Renewable energy, Energy storage, Sustainable substrate and PCB manufacturing, Energy-efficient system-level design for AI and data centers.</p>

## 六、獎勵方式：

獎項	名額		獲獎內容
	PCB	Packaging	
金獎	1名	1名	各10萬元(含6萬獎金、4萬海外參訪補助)、獎座、獎狀
銀獎	1名	1名	各8萬元(含4萬獎金、4萬海外參訪補助)、獎座、獎狀
銅獎	1名	1名	(視情況頒發)2萬元、獎座、獎狀

## 七、評分方式：

1. 評審委員：由產業界、研究單位等 TPCA 委員或顧問、產業先進數人所組成。
2. 評分指標：(1) Originality of the Work (2) Significance of the Work (3) Industrial Merit of the Work (4) Completeness of the Report Work (5) Reference of the Work of Others (6) Presentatiobn clarity & delivery
3. 評選機制：先依據各投稿論文之摘要內容及現場報告進行初步評選，再依當年度投稿篇數，按一定比例遴選部分論文進入第二階段全文評選。最終得獎名單將由評審委員綜合評分結果進行決議，並以評分成績作為主要評選依據。

## 八、權利義務說明：

1. 菁英學生優秀論文獎<參與者>必須選擇口頭發表論文。
2. 菁英學生優秀論文獎<入圍者>必須配合參與下述活動，缺一者將取消參賽資格。
  - a. 於 IMPACT Conference 中，以英文進行 Oral 發表(不可變更為 Poster 發表)。
  - b. 於 2027 TPCA Show 展場中「菁英學生優秀論文獎主題區」呈現得獎論文海報(TPCA 製作)。
3. 菁英學生優秀論文獎<得獎者>必須配合參與下述活動，缺一者將取消獲獎資格。
  - a. 參與 2027 TPCA Show Welcome Reception 之活動頒獎典禮。
  - b. 得獎者需撰寫得獎主題之專文，投稿於 TPCA 季刊(不另給付稿費)。
4. 金、銀獎得主之海外參訪補助，為參與海外展覽論壇之差旅補助費用；如得主本人無法參與將視同放棄。2027 年之參訪地點與其他詳情，後續請參閱另訂立之「菁英學生優秀論文獎海外參訪補助辦法。」
5. 銅獎是否頒發將視投稿實際篇數與情況，做彈性調整。
6. 菁英學生優秀論文獎，視為同步參與 IMPACT 國際研討會論文競賽，享有雙重獲獎機會；IMPACT-B 類學生優秀論文獎相關辦法參考 [IMPACT 官網](#)並以公告為準。
7. 投稿論文限於當年度所完成之研究。本人若無法參加論文發表，應委託代理人出席並進行 Oral 發表，無代理人出席者將視同放棄獎項，由後位者遞補。
8. 各項獎金給付，協會將代扣相關獎金之稅額。

## 九、投稿流程說明：

1. 請進入<[本頁面](#)>進行註冊，完成後會收到確認書，並回到 IMPACT 登入。
  2. 於登入之狀態下，進入《Paper Submission》。
  3. 點選《ADD》新增投稿：請注意身分別要選擇《Student》報告形式選擇《Oral》，填寫完畢後會收到投稿確認信。
- ※ 請牢記您的帳號(Email)、密碼，並等候入選通知與得獎通知！

## 十、聯絡窗口(03-3815659)：

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★主辦單位保留變更活動內容之權利，若有任何變動事項，將會盡早於 TPCA 官網、IMPACT 官網公告，另也將主動告知已投稿者，避免權利受損，敬請見諒！