



國立臺灣師範大學
National Taiwan Normal University

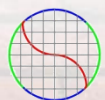
提昇國際學術影響力 學術組織服務經驗分享

高文忠 研究講座教授

科技與工程學院院長

國立臺灣師範大學

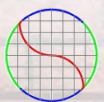
IEEE Fellow



SoC Lab
NTNU

簡 歷

- 國立臺灣大學電機工程碩士/博士 (1992/1996)
- 研究單位 (1996.10-2000.10)
 - 工業技術研究院 電子所與晶片中心 工程師/課長/部門經理
- 產業界(2000.11- 2004.1)
 - 正崙集團 (Foxlink group) ASIC/FW 經理/處長/協理
 - 美商 SiPix Technology Inc. Cofounder
- 學術界 (2004.2 ~)
 - 工業教育學系/電子所 助理教授/副教授 (2004.2 - 2010.7)
 - 電機工程學系 教授兼系主任 (2010.8 - 2013.7)
 - 進修推廣學院院長 (2013.8 – 2019.7)
 - 科技與工程學院院長 (2019.8 ~)
 - 研究講座教授 (2020 ~)
 - IEEE 消費電子科技學會副總裁、IEEE 產品安全工程學會副總裁
 - IEEE 消費電子科技學會總裁 (2023/2024)
 - IEEE 會士



Outlines

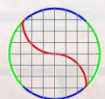
- 工業界服務
- 學術研究
- 會士選任
- 國際學術組織服務



國立臺灣師範大學
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Working in ITRI

Industrial Technology
Research Institute

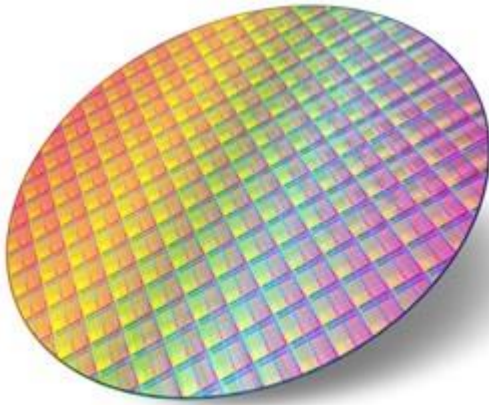


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Successful Stories in ITRI



ITRI



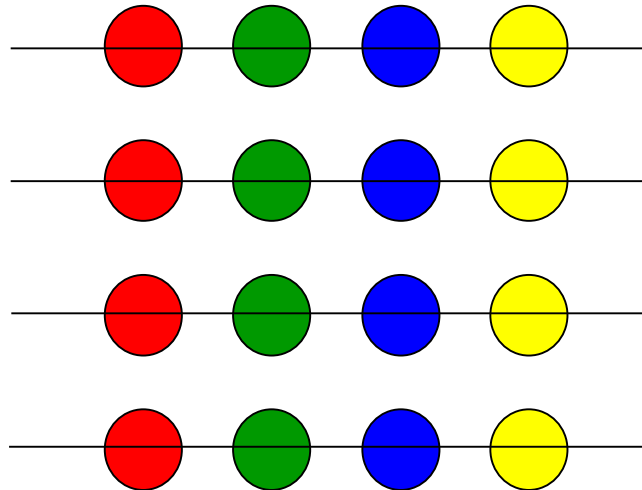
Engineer → **Project Leader**



Section Manager → **Department Manager**

Organization Management

- Functional Team Leader
- Project Team Leader



What I have Learned

- Learning different fields of expertise
- Working as a worker
- Working as a team leader
- Working together with other teams

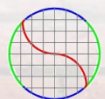




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Working in Industry

Foxlink Group
& SiPix Group

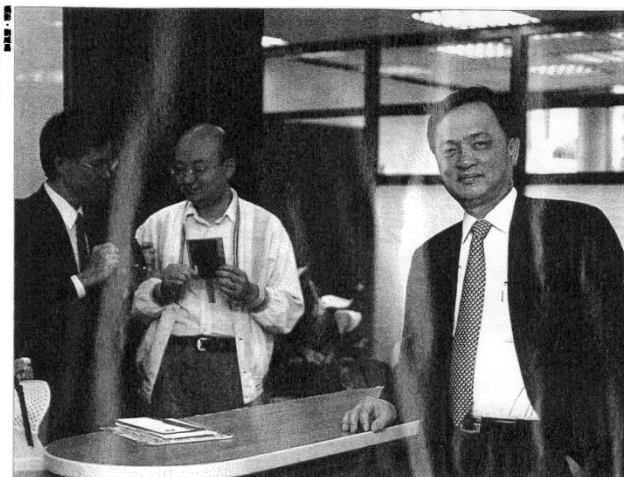


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Working in Industry

- Foxlink Group
 - Director/ AVP (2000.11- 2004.1)
- SiPix Technology Inc.
 - Cofounder (2002)

Startup



侯清雄（右一）現在把一半時間都花在新平面顯示技術上。

侯清雄的「千億革命」
三年投資二十億元 創造取代LCD及紙張的技術

文 林宏文

「這一個事業如果成功，將會帶來革命性的影響，可以創造出一個年產值好幾千億元的產業！」雄資科技集團董事長侯清雄，手上拿著一片新開發出來的材料，很興奮地這麼說。

行事作風一向低調的侯清雄，最近又有令人期待的好消息。經歷過去兩年網路及光電產業的泡沫陸續破滅後，侯清雄已經悄悄投資二十億元的巨資，全力研發一個可以取代液晶顯示器（LCD）的全新材料技術。

侯清雄早期是神通集團的創辦人，一九七四年神通引進美特爾的微處理器（CPU），那是台灣資訊工業蓬勃發展的起點。侯清雄也跟著台灣資訊工業一同成長，並協助神通集團一躍而為國內前三大資訊企業集團。

新技術讓侯清雄每天都忙得很興奮。

在神通集團任職期間，侯清雄在資訊產業扎下雄厚的經驗及

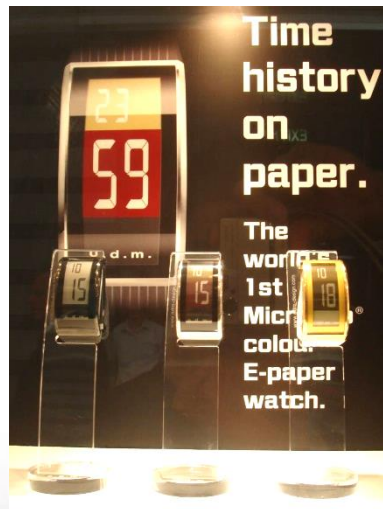
人脈基礎，也擔任過兩屆台北市電腦公會理事長。九七年他從神通集團副董事長的職位上退休，便決定切入創投事業，創立雄資科技集團並擔任董事長。

「這項全新的技術，讓我每天都很興奮！」侯清雄不諱言自己已在網路及光電泡沫中，旗下也有不少公司倒閉，但是環境不佳沒有讓他失望及撤退，反而對投入這個新興的產業相當有信心，這項能夠創造出革命性影響的技術，讓他持續產生對創投事業的熱情。

侯清雄所指的技術，就是所謂的電泳平面顯示器（EPD, Elean Photonic Display）。這個技術是要研發出類似一般紙張的平面顯示器，重量很輕，很薄，又可以指畫，沒有視覺死角的新薄膜顯示技術，而且由於生產線的投資金額很小，但產量很大，如果研發成功的話，將可取代當今被普遍使用的LCD產業。

在應用層面上，目前LCD依然太厚，而且只要在四十五度

Startup



What I have Learned

- Emerging technology requires long-term investment, but success is not necessarily in me
- Do not give up any emerging technologies or services that may improve human life

TAIPEI 台北 TIMES · Business

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Researchers unveil new e-paper

Staff Writer, with CNA



A local research team yesterday unveiled a new technology that represents not only a breakthrough in the application for flexible electronic paper (e-paper), but also allows animation displays on e-paper.

The active matrix electrophoretic display (EPD) controller chip, researched and developed by National Taiwan Normal University's System-On-Chip (SoC) Lab, led by professor Kao Wen-chung (高文忠), helps produce improved e-paper that can be bent and folded and is easily portable, Kao said at a press conference.

The EPD controller chip also enables animation to be displayed in electronic books, said Kao.

Kao Wen-chung, chair of National Taiwan Normal University's Department of Applied Electronics Technology, yesterday demonstrates in Taipei the flexible e-paper that his research team developed in collaboration with industry partners.

PHOTO: LIAO CHEN-HUEI, TAIPEI TIMES

Most Popular

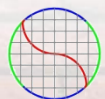
Most read

- 1 US to cut V
- 2 Ten more n security
- 3 Yemeni pro in Algeria
- 4 Defense se chief
- 5 Four Contin Taipei



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Academia



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Thoughts on Innovation Issues

- Electronic Paper
 - Material Sciences
 - EE & CS
- Digital Camera
 - Optics, chip design
 - ME, CS, ID
- Eye tracker
 - Psychology, linguistics
 - EE, CS

What I have Learned

- Everyone wants to be the dominator
 - **Red ocean**
- Being a supporting role
 - Becoming a top expert in a certain field
 - Cross-domain learning
 - **Blue ocean**



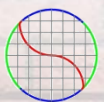
The Truths

- 論文發表量不算多

- IEEE Conferences (99)
- IEEE Journals (27)
- Scopus (168)
- Scopus H-index (19)

- 名列在史丹佛大學「全球前 2% 頂尖科學家」- 「終身科學影響力排行榜（1960 - 2020）」

- 總引用次數
- Hirsch h-index
- 共同作者修正的 Schreiber Hm-index、
- 單獨作者
- 單獨或者第一作者
- 單獨或第一或者最後作者的文章引用次數



Paper Publications

- More Open Access Journals & Fast publication journals
- New journals with high impact factors
- Providing publishing platforms for practitioners
 - Practitioners may not need or want traditional peer-reviewed research papers
 - A TechRxiv-like server for posting practitioner content would be well received



Inventory is not space. Inventory is audience

Recruiting AEs/EiCs of SCI Journals

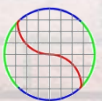
- Desirable qualities of the candidates include: established, excellent records of **publications**, solid technical accomplishments, unquestionable leadership, integrity and **ethical** standards.
- Demonstrable organizational and management skills, and finally, an **energetic willingness** to continue and vision for moving the journal forward toward visibly higher levels of accomplishment
- Identification of **areas** that require strengthening.
- EiCs are responsible for working with the Editorial Board to create strategic and long-term **plans** for the publication they oversee.

IEEE 給主編的提醒

Shall I struggle to find ways to improve the Journal Impact Factor of my Transactions or Magazine?

Answer: NO

The JIF (and all other bibliometric indicators) is (are) the result of the work one does and not the goal to be optimized



Ethics

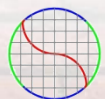


- Plagiarism!
- Bibliometrics is designed to be an independent metric for Journal (or Individual Scientist) Impact
- Unfortunately it has been misused and is now directly affecting the careers and salaries of individual scientists
- IEEE is working on data analysis tools for early detection of these cases
- **Paper Mills**
- COPE Guidelines <https://publicationethics.org/guidance/Guidelines>



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My Case (IEEE Fellow)

- Main contribution
 - System integration of electrophoretic displays
 - Papers and Patents
 - The number of citations, h-index
- Lasting impact on society
 - The **technology** (display controller chip as well as image processing engine) has been applied to the products.
 - The **products** (e-tag, e-book, smart card) I developed have become major ones for the company.
 - The **company** (SiPix Technology Inc.) I cofound in Taiwan has been merged into E Ink, which is the No. 1 in the world.



Fellow Grade Qualifications

- **IEEE Bylaw I-104.(2)**

- The grade of Fellow recognizes **unusual distinction** in the profession and shall be conferred by the Board of Directors upon a person with **an outstanding record of accomplishments** in any of the **IEEE fields of interest**.
 - **Engineering**; **Computer sciences and information technology**; Biological and medical sciences; Mathematics; Physical sciences; Technical communications, **Education**, Management, Law, and Policy.
- The accomplishments that are being honored shall have contributed importantly to the **advancement or application of engineering, science and technology**, bringing **significant value to society**.

Nomination and Rating Categories

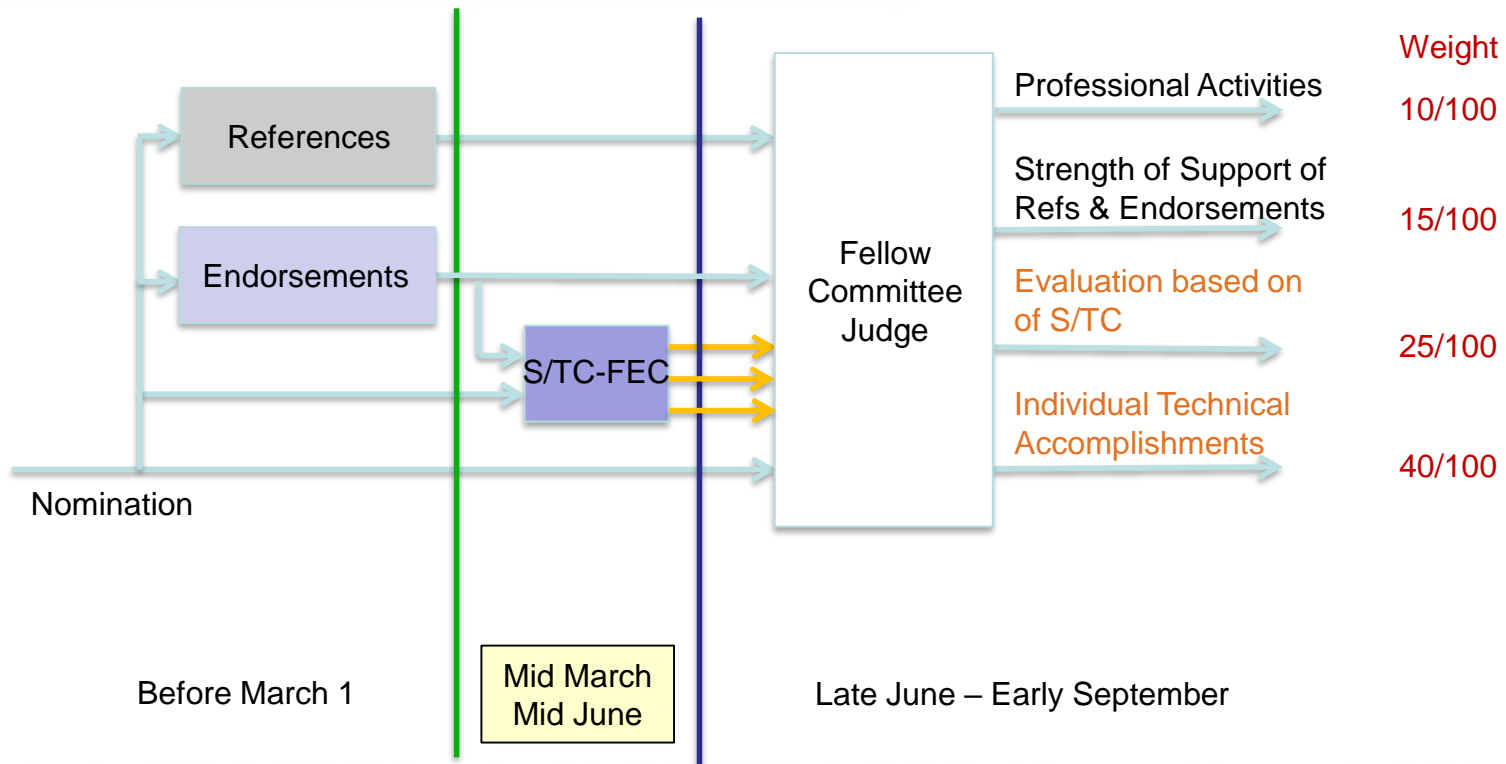
- **IEEE Fellow Committee Operations Manual further specifies:**
 - **4 Nomination Categories, for Nominees:**
 - Research Engineer/Scientist (RE/S),
 - Application Engineer/Practitioner (AE/P),
 - Technical Leader (TL),
 - Educator (E)
 - Chosen by the nominator, but the S/TC-FEC can recommend a change
 - **4 Rating Categories, for IEEE Judges:**
 - Individual Contributions/Evidence of Technical Accomplishment (40/100),
 - Evaluation Based on S/TC Report Support (25/100),
 - References/Endorsements (15/100),
 - Professional Activities (10/100)
 - IEEE Judges assign a value (0-100) to each rating category, the final ranking is based on the weighted sum



Four Nomination Categories

- Research Engineer/Scientist
 - **Academic or professional in corporate/government R&D, working on the advancement of the state-of-the art of a technology or the understanding of a theoretical problem.** Evaluation focus is on inventions, discoveries, or advances in the state of the art made by the Nominee, all of which must confirm innovation, creativity, impact, and a distinct personal role of the Nominee.
- Application Engineer/Practitioner
 - **A professional working on design and/or evolution into manufacturing of products or systems; the use, operation, or application of such products or systems; and the advancement of industry practices and standards.** The focus of the evaluation is on innovativeness, originality, creativity, meeting market needs, regional as well as global impact on the profession or society at large, and advances in quality, reliability, cost effectiveness, and manufacturability.
- Technical Leader
 - **A professional in corporate/government technical management, or leading large transformational multi-party projects in industry, academia, or government.** Contributions take the form of application oriented or scientific accomplishments from **leading technically a team or a company-wide effort.** The focus of the evaluation is on technical innovation and creativity involving 'difficulties' and 'risks' which were resolved through the technical leadership role of the Nominee.
- Educator
 - A teacher or an administrator **who has made an impact on education.** Focus is on the uniqueness, innovation, degree of acceptance of the Nominee's contributions.

The Overall Fellow Process



IEEE Nomination Form

- Identify the 1st/2nd **individual contribution** which qualifies the Nominee for Fellow grade (maximum 200 words).
- **Verifiable evidence** of 1st/2nd **contribution** (maximum 400 words).
- **Impact** of 1st/2nd contribution (maximum 200 words).
- **Verifiable evidence** of **impact** of 1st/2nd contribution (maximum 200 words)
- IEEE and Non-IEEE Awards
- IEEE and Non-IEEE Activities

吹牛一定要打好草稿
也一定要證據確鑿



Fellow Evaluation

- An independent assessment (from Nominator and References) and verification of
- The accomplishments that are being honored shall have contributed importantly to the advancement or application of engineering, science and technology, bringing the realization of significant value to society
- Nominees must have **verifiable evidence** of specific and outstanding individual technical contributions and their impact
- Endorsements provide **additional confirmation of evidence of technical impact** for contributions that may be proprietary and not available for citation in the open literature

必須是現在可以驗證的貢獻

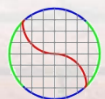
必須強調影響力，而非發表多少論文或提出多少技術

Endorsers 慎選 非常重要



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IEEE Volunteers



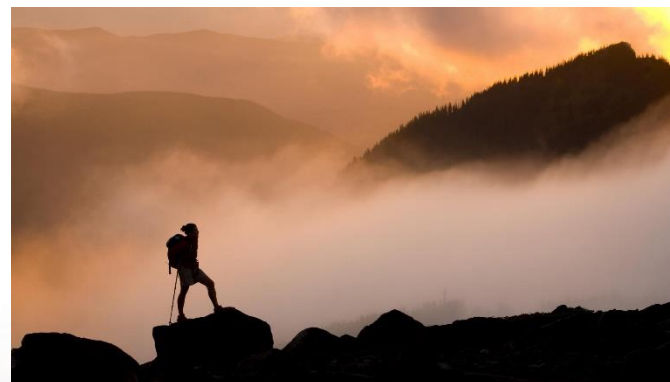
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My Academic Services

- Chairing conferences
 - 7 IEEE conferences (Scopus index)
- Editorial Boards
 - 2 IEEE Journals (SCI-Index)
- Board of Governors (BoG)
 - 2 IEEE Societies
- Vice President of Publications
- Chair of IEEE Fellow Evaluation Committee for PSES



白手起家 闖蕩江湖
沒有師父領入門



My Volunteer Positions

- IEEE TCE Editorial Board 2006~
- IEEE ICCE TPC 2008
- IEEE CEM Editorial Board 2010~
- General Chairs
 - IEEE ISCE 2013
 - IEEE ICCE-TW 2014/2015/2021
 - IEEE ISPCE-TW 2016/2017
 - IEEE ICCE 2020 (Las Vegas)
 - IEEE ISPCE-ASIA 2021

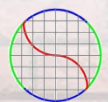


International Academic Service

- Paper Authors & Reviewers
- Technical Committees
 - Conference
 - Society
- Conference Chairs
 - Session Chairs
 - Special Session Chairs
 - TPC Chairs
 - General Chairs
- Journal Editorial Board
 - Guest Editors
 - Associate Editors
 - Senior Editors
 - Editor-in-Chief
- IEEE Volunteers
 - Member-at-Large (BoG)
 - Executive Committee Members
 - Vice Presidents
 - Fellow Evaluation Committee Chair
 - **Society President**
 - Division/Region Director
 - IEEE VPs & President

按部就班 別著急

除非是百年一遇的天才
Reputation 無法立即建構



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How Can We Do

- IEEE 組織服務的關鍵
 - Ethics
 - Attitude
 - Friend
- IEEE 組織內常見不OK的行為
 - 發表太多垃圾論文，論文一再被拒絕，也一再投回去，更一直寫信抱怨
 - 見到人就開始吹牛自己上了多少論文，IF 有多少，H-Index 有多少
 - 不願意幫忙打雜，只爭取看起來對自己有用的位置 (Editors)
 - 不幫忙研討會，或是辦理研討會時帳目不清楚
 - 打壓其他國家的成員
 - 沒獲選某些職位就開始到處抱怨
 - 選上某些職位就擺爛，或是藉機斂財

How Can We Do

- 獵人本身的念力

- Quality of Paper Publications
- Field of Society
- Industry-University Partnership

- 誠心的建議

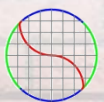
- 誠信與友善
- 定位自己的特色 別當盲從者
- 參與Society 的頂尖研討會
- 付出不求回報
- 辦事讓國際友人安心
- 有機會晉身編輯群 應秉持公正的立場處理論文審稿
- 站上重要IEEE 組織職位後 一定要更愛惜羽毛

Conclusions

- 建構國際學術影響力已經是當今大學經營者與大學教授個人的重要指標
- 常見的大學評比系統中，國際學術影響力的比重甚至超過論文發表的比重，而這兩者的關係其實也密不可分
- 大家共同努力管控好學術研究品質
- 行有餘力，一起合作闖蕩 IEEE 組織
- 建構台灣學術團隊在 IEEE 的聲望



Thank You Very Much



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