

2025.11.15 - 12.05

高光快報

HIGHLIGHTS THE CUT



開幕節目 世界首演 OPENING PROGRAMME WORLD PREMIERE



光纖之父的世界造就音樂劇的起點 創新藝術科技×星級創作及演出團隊傾力合作

高錕教授，以一顆高純度的心，連繫了地球上每一個人，改變了人類的未來。他是光纖之父，也是諾貝爾物理學獎得主，高錕說過他是屬於香港的。這傳記音樂劇刻畫了高錕追求學問的態度和實踐信念的毅力，他如何成為一位卓越又無私的科學家暨教育家。同時，高錕是孝義的兒子、忠誠的丈夫和開明的父親；他與妻子黃美芸的愛情成為佳話，在高錕罹患腦退化症的歲月中，高太一直遵守承諾，生老病死相伴，呈獻最真摯的愛。高錕的高純度一生，燃亮了人性中愛與奉獻的光輝。

東九文化中心委約創作 Commissioned by EKCC

The World of Charles Kao in 20 Original Songs featuring Next-Gen Arts-Tech×All-Star Cast and Creative Team

The purity of Professor Charles Kao's heart connected every person on earth and transformed the future of humanity. Renowned as the father of fibre optics and a Nobel laureate in Physics, Kao once claimed Hong Kong was where he belonged. This biographical musical chronicles Kao's relentless pursuit of knowledge and the steadfastness of his beliefs, following his journey as an extraordinary and selfless scientist and educator. He was also a devoted son, a loyal husband and an open-minded father. His love story with his wife, Gwen, is legendary. Even during Kao's struggle with Alzheimer's disease, Gwen stood by him unwaveringly through ups and downs, offering the truest form of love. Kao's life attests to the profound power of love and his dedication to humanity.

李敏 Erica

聯合監製/導演/編劇/作詞
Co-producer/ Director/ Playwright/ Lyricist



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高錕先生是香港之光，他所研發的光纖，影響世上的每一代人。他也是我的校長，我中大的畢業證書都是由他簽發的。高錕是一個很純真的科學家，他一生都在追求知識，貢獻世界。他發明光纖，與世人分享發明，並沒有就光纖發明申請專利。高錕為大學推行改革著重科研，也為香港教育界貢獻良多，所以我想以一齣音樂劇正正式式的歌頌高錕先生。其實，這也是高錕先生的妻子黃美芸多年來的心願，希望世人知道高錕先生的故事。

《一束光——高錕的記憶》是一個跨界的音樂劇，將電影特效帶上舞台，透過藝術科技把效果人性化，與演員互動，活現觀眾眼前。雖然高錕先生的故事或多或少已經是編定的，但是在編寫劇本時，仍是要各方的協調。如其中一幕「你過去、我未來」，演員走進高錕先生的腦袋。團隊是要先處理視覺效果？還是先設計編舞動作？或是先譜寫音樂場景？這都像跳舞一樣，你行一步，我行一步。透過不斷的試驗，整個團隊的努力、信任和互相配合，才能將這個複雜音樂劇製作出來。

Professor Kao is the pride of Hong Kong. His research on optics fibre communication has influenced generations worldwide. He was also my university vice-chancellor who had signed my certificate of graduation from the CUHK. Professor Kao was a truly dedicated scientist who devoted his life to the pursuit of knowledge and the contribution to humanity. His invention on optics fibre communication was shared with the world without a patent. Professor Kao emphasized scientific research in teaching and reformed university education in Hong Kong, significantly contributed to the education sector. This musical is a tribute to Professor Kao. In fact, it is also a long-held wish of Gwen, Professor Kao's wife, to tell the story of Professor Kao to the world, once again.

“HighLights – The Memories of Charles Kao” is a cross-disciplinary musical that brings film special effects to the theatre stage. Through arts technology, actors can interact with all kinds of virtual set as well as special effects which brings alive the musical before the audience. Although Professor Kao's biography had been written, abundant coordination with various parties were still required for script development. For example, in the scene “You're the Past, I'm the Future” actor will literally walk into Professor Kao's mind. Should the visual effects come at the first place? Or should it be the choreography? Or should the music lead the way? The whole creative process is like dancing—each partner takes one step at one time. Without countless testing, team's dedication, trust and perseverance, it would be impossible to bring this musical to life.

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他凝視光 我們看見彼此

HE SAW LIGHT. WE SEE EACH OTHER

高錕教授看見「用光傳訊」的可能，改變了我們連結世界的方式。高錕教授歷經多年努力，最終成功令玻璃纖維成為一束光的傳輸媒介，更令他於2009年獲得諾貝爾物理學獎。

Professor Charles Kao saw the potential of "optical communication" and transformed the way we connect the world. After years of hard work, Professor Kao finally succeeded in the transmission of light in fibres for optical communication and awarded The Nobel Prize in Physics 2009.

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創作一個全新的粵語音樂劇，是我的夢想。所以十分榮幸可以成為《一束光——高錕的記憶》的音樂總監，為音樂劇作曲、編曲、錄音和製作音效。在東九利用這裡的沉浸式音響系統創作，對任何一個藝術創作者都是一個很大的福份。場地有超過一百七十支喇叭，加上強勁的音響處理系統，讓我將心裏所想的每一個音符、音效都呈現出來。

音樂本質也是一門科學。聲波的傳播，與空氣中的物理振動及其空間內被所有物件的反射，都有絕對的關係。簡單來說，基本上所有觸得到的面，看得見的範圍，都對聲音有影響，因此幾百年前劇場已經有特定的設計。東九的沉浸式音響系統能夠讓藝術家隨意更改劇場內的聲音環境，真正營造出仿如其境的聲效，令劇場的敘事都變得真實。而今次音樂劇是高錕先生的傳記，音樂上涵蓋多個年代，故音樂設計上，利用系統廣闊的音域來寫實各個場景；以最新的科技、最人性化的方法來描述一個無私、盡責、堅毅的科學家及他的成就，是最適合不過的。

It has been my dream to create a brand-new Cantonese musical. And I am honoured to be the Music Director of "HighLights – The Memories of Charles Kao" to compose, arrange, record and produce all the sound effects. It is a privilege for any artists to compose with the immersive sound system at the EKCC. There are over 170 speakers and a powerful audio processor to create the sweetest immersive soundscape at The Hall, allowing me to produce every note I have ever envisioned.

While the musical appraises the great scientist, music itself is essentially a science subject. The propagation of sound waves relies on the physical vibrations of air and is affected by the reflection of all objects within the same space. In other words, anything seen and can be touched will affect the sound design. It is also the key reason why theatres have specific design according to their functions, hundreds of years ago. The immersive sound system at the EKCC enables artists to alter the acoustics of the theatre, creating an imaginary soundscape as if it is real, strengthening the storytelling. This biographical chronicle of Professor Kao spans over several decades of musical style. The powerful immersive sound system comes in handy, with an ultra-wide sonic range to depict the different genre of music. It is also considered the most appropriate to portray a selfless, responsible and persevering scientist and his achievements with the latest technology.

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嚴勵行 Johnny

聯合監製 / 音樂總監 / 作曲 / 編曲
Co-producer / Music Director / Composer / Arranger



科技先行者

沒有光纖，就沒有今天習以為常的視像通話、網購、串流。高錕教授看見「用光傳訊」的可能，改變了我們連結世界的方式。

A Science Pioneer

Without fibre optics, none of our modern-day routines – video calling, online shopping or streaming – would have been possible. Professor Charles Kao saw the potential of "optical communication" and transformed the way we connect the world.

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高錕先生是一位讓香港人、甚至是世界上的每一個人都感到驕傲的科學家。在今次的創作中，除了演出，更重要的是將高錕先生對科技研究上那「持之以恆」的精神，對世界無私的貢獻及對家人那股純潔的愛，原原本本的呈現給大家看。令音樂劇不只是藝術和科技的融合，更是一齣與愛結合的傳記。

劇中的故事有多個感人的場境，如高錕得知光纖製造被別人捷足先登，家人對他的支持及肯定；及當高錕的腦退化漸趨嚴重，妻子美芸對他的不離不棄等。《一束光——高錕的記憶》不僅是一齣藝術科技音樂劇，更是一個屬於香港的故事。

Professor Kao was a scientist who made Hong Kong, or even the whole world, proud. In this musical production, the most important among all, which I believe, is Professor Kao's unwavering spirit in scientific research, his selfless contributions to the world, and his purity of love for his family. Hence, on top of fusing arts and technology, this musical should also intertwine with the everlasting love in Kao's story.

There are more than a few touching moments in the musical, such as the family showed unfailing supports to Kao when he learnt that someone else had manufactured optics fibre before him; and Gwen's love for him when his Alzheimer had deteriorated. "HighLights – The Memories of Charles Kao" is more than just an arts tech musical, it is a great story of Hong Kong to tell.

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周國豐 Brian

策略顧問
Project Strategist





從一個念頭開始

在英國研究所裡，他盯著一束光問自己：為何不用光來傳訊？若能讓光在玻璃裡走得更遠、更清楚，資訊就能以近乎光速流動，世界或許會不一樣。

It All Began with an Idea

Gazing at a beam of light in a research lab in the UK, Kao asked himself: "why not use light for communication?" If light could travel through glass fibres over longer distances and with greater clarity, information might then be able to traverse at close to light speed. And the world might never be the same again.



曾以德 Joyi
製作總監 Production Director

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這齣音樂劇的創作其實始於三年前，從前期研究前後投影、動態捕捉、數碼影像、沉浸式音響等技術，到最終發展成動用8部投影機、3塊大型LED幕牆、10座升降台、2台電動軌道車、1個旋轉舞台，以及一系列電腦燈與雷射設備的製作規模，東九在今次技術層面上可謂「傾囊而出」。以配合演員的立體投影場景為例，除了配備多部投影機，我們視覺特效團隊更運用多層次影像技術兼顧不同觀賞角度。舞台機械設計亦充滿變化——10座升降台各司其職：有的承載演員登場，有的運送道具，更有些配備活門，可瞬變為通道或房間等場景。面對如此複雜的製作，我們的團隊與東九文化中心團隊合作無間。除了完備的硬體設備，東九團隊開明的配合是場地最珍貴的瑰寶。

The creative process for this musical actually began three years ago. Starting with research into front and rear projection, motion capture, digital imagery, immersive audio, and other technologies, it eventually evolved into a production that utilizes 8 projectors, 3 large LED walls, 10 lifting platforms, 2 electric track trolleys, 1 revolving stage, and a series of moving head lights and laser machines. Technically speaking, the EKCC team can be said to have "put all their cards on the table."

Taking the 3D projection scenes that needed to be synchronized with live actors as an example, in addition to deploying multiple projectors, we also employed multi-layered imaging techniques to accommodate different viewing angles. The stage machinery design was equally dynamic—each of the 10 lifting platforms had its own role: some elevated actors for their entrances, some transported props, and others were equipped with trapdoors, allowing them to transform instantly into passageways or rooms for different scenes. To tackle such a complex production, our team and the EKCC team collaborated seamlessly. Beyond the comprehensive hardware and equipment, the open-minded and proactive cooperation of the EKCC team was the most valuable asset of the venue.

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從質疑到突破

起初，很多人不相信。高錕教授與喬治·霍克漢姆於1966年共同撰寫了一篇關於包覆玻璃纖維作為傳輸媒介應用的開創性論文，為光纖通訊的發展奠定了理論基礎。及後他不斷實驗、與團隊及業界合作，終於證明玻璃光纖可行。

From Doubt to Breakthrough

Many people were skeptical at first. In 1966, Professor Charles Kao and George Hockham co-authored a seminal paper proposing the use of clad glass fibres as a transmission medium, laying the theoretical foundation for optical communication. After relentless experimentation and collaboration with his team and the industry, they eventually managed to prove the viability of glass fibres.



朱啟陞 Franco
編舞 Choreographer

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藝術科技代表時代的進步，但在我看來，藝術始終以人為本。科技的角色是配合人的創作，將演出提升到更深一層，呈現給觀眾更豐富的視覺、感官效果。這齣音樂劇元素豐富——藝術科技、動聽的音樂、動人的故事劇本與精彩的舞蹈，共同構築一個更完整的劇場體驗。最希望觀眾感受到我們的「持之以恆」，很多事只要用心與努力去做，是會成功的。

Arts technology marks the next step in our age. Regardless how advance it is, the art must always centre at humanity. Technology is a tool to serve and amplify human creativity, uplifting a performance with richer visual and sensory dimensions for the audience. This musical weaves together arts technology, stirring music, emotional script and dynamic dance to form a full theatrical experience. I wish audiences will be inspired by our perseverance — in which, we believe, with sustained care and efforts everything can be possible.

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找出真正的難題

他看見問題不在「光」，而在「玻璃」。光在纖維中之所以變弱，多由雜質吸收與散射所致；只要把雜質降到極低，光就能長途穩定前行。方向一旦校正，路徑便被點亮——方向對了，世界就跟著被點亮。訊息隨光而行，越過城市，穿過海底，把世界連成一體。

Identifying the Real Challenge

Kao realised that the real problem did not lie in light, but in glass. Light attenuation in optical fibres was mainly caused by absorption and scattering due to impurities. By minimising impurities, light could then travel steadily over long distances. Once the direction was calibrated, the path was lit up – and so was the world. Information began to flow with light, crossing cities and passing underneath oceans, connecting the world as one.



黎文俊Eric
藝術科技總監
Arts Technology Director



曾怡安Yvonne
藝術科技總監
Arts Technology Director



在音樂劇中，創作團隊運用了多項先進的藝術科技，包括動態捕捉技術、沉浸式空間投影技術以及物件追蹤技術，提升整體視覺效果與觀眾的沉浸體驗。

這齣音樂劇將動態捕捉技術納入前期製作流程，作為整合演員動作與視覺特效（VFX）的一項核心工具。透過感應裝置精準記錄表演者的動作，並與虛擬角色及場景進行匹配，不僅提升動畫與影像的真實感，更使整體節奏與音樂同步達至極高水準。每一個舞步、手勢皆與節拍緊密結合，視覺效果與表演節奏完美融合，為觀眾帶來強烈的動感體驗。

演出採用了沉浸式空間投影技術，將舞台打造成可即時變化的多維環境。系統能根據劇情需要瞬間切換場景，例如從記憶中的花園轉換至星雲之中，或由現實空間過渡至惡夢之中，甚至模擬穿越時空的感覺，讓觀眾在不同年代、情境與情感之間流動。此技術亦充分運用舞台的每一吋空間，無論是地面、牆面，甚至空中層次，皆成為影像投射與敘事的一部分，使觀眾在視覺上被全面包圍，彷彿置身於多維度的劇場之中。物件追蹤技術，讓道具不僅成為場景互動的媒介，更成為演員情感表達

的延伸。以沙灘場景為例，當演員接觸水面或拾起特定道具時，系統會根據動作觸發水波或光影變化，呈現出真實與虛構交錯的視覺效果。這些道具往往承載角色的記憶與情緒，透過追蹤技術，觀眾能清晰感受到角色在特定時刻的心理狀態與情感轉折，進一步深化敘事層次與觀演連結。

演出中的視覺技術亦與激光、燈光與音響系統緊密配合，形成高度協調的多感官體驗。激光光束與空間投影交錯運行，營造出動態的光場結構；燈光設計則根據場景情緒進行色彩與強度的變化，與演員動作節奏同步；音響系統不僅支援環繞聲場，更與動態捕捉數據連接，在特定動作或情境下觸發聲效或音樂段落。這種跨界面的技術整合，使整場演出在視覺、聽覺與空間感上達到一致性與流動性，進一步強化觀眾的沉浸感。整體觀演體驗的提升不僅作為視覺輔助，更深度融入演出結構與敘事邏輯。

透過動態捕捉、沉浸式空間投影、物件追蹤技術與多媒體系統的整合，演出呈現出一種跨越現實、虛擬與時間維度的藝術語言，為觀眾帶來斬新及沉浸的觀演體驗。

The creative team employs several advanced arts technology in the musical, including motion-capture, immersive spatial projection and object-tracking, to elevate the visual language and deepen audience experience.

Motion-capture is integrated at early stage in the production pipeline as a core tool for aligning performers’ movements with VFX. Sensors record actors’ motions precisely and map them to virtual characters and environments, enhancing realism and synchronising animation tightly with the music; every step and gesture is locked to the beat so visuals and performance breathe as one, producing a powerful sense of motion for the audience.

Immersive spatial projection is used to transform the stage into a real-time, multi-dimensional environment. Scenes can switch instantly to suit the narrative — from a memory garden to a nebula, from reality into a nightmare, or even a sense of time travel — allowing the audience to flow between eras, moods and settings. The system utilises every inch of the stage — floor, walls and even aerial levels — as projection surfaces, making imagery an integral part of the storytelling and surrounding viewers in a multi-dimensional theatrical space.

Object-tracking is used to extend emotional expression through props. In a way, props become interactive mediums and extensions of the emotions. In one scene, for example, when an actor touches the water or lifts a specific object on a beach, the system triggers ripples or shifts in light and shadow, blending the real with the virtual. These props often carry characters’ memories and emotions; tracking their movement lets the audience clearly perceive psychological states and emotional turns, deepening narrative layers and the performer-audience connection.

Visual systems are tightly integrated with lasers, lighting and sound to create a highly coordinated multisensory experience. Laser beams interweave with spatial projections to form dynamic light fields; lighting design shifts color and intensity to match scene emotion and actor movement; the audio system supports immersive soundscape and links to motion data to trigger effects or musical cues during specific actions or moments. This cross-technology integration yields coherence and flow across sight, sound and space, amplifying immersion.

Taken together, these technologies are woven into musical’s structure and narrative logic. By combining all these systems, the musical speaks a new artistic language that traverses the real, the virtual and temporal dimensions, offering audiences a fresh, deeply immersive theatrical experience.



回到香港，培育下一代

1970年，高錕教授在香港中文大學創立電子學系，及後於1987年出任校長，以沉實的學者態度，著眼於大學的長遠學術發展。他相信自由與好奇心能帶出真正的創新，陪著年輕人追問與嘗試。



Returning to Hong Kong to Nurture the Next Generation

In 1970, Professor Charles Kao founded the Department of Electronics at The Chinese University of Hong Kong and went on to become the University's Vice-Chancellor in 1987, where he focused on its long-term academic development with the humility of a true scholar. Believing that freedom and curiosity can inspire real innovation, he encouraged young people to keep questioning and trying.

彭志孟 Billy
視覺技術總監
VFX Technical Director



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藝術科技可以令本來有限的舞台空間無限伸延，亦可將永不休止的時間停留在一瞬間。演員可透過互動裝置增強與舞台環境的代入感。這齣音樂劇利用了動態捕捉系統、實時物件追蹤技術、沉浸式音響系統以及電影視覺電腦特效 (VFX - Visual Effects)。希望藝術科技的應用能夠自然地融合到故事當中，讓觀眾感受到高錕先生堅毅的信念「持之以恆一定得」以及高生高太不離不棄的真摯情感。

Arts Technology unleashes our vibrant imagination, which transcends and surpasses physical limitations and time constraints. We can indefinitely extend the stage space or preserve a moment in time. This unlocks new possibilities we couldn't have even imagined before. In this musical, we have integrated multiple art-tech elements like motion capture, interactive real-time object tracking, immersive audio system, and cinematic VFX, which bring the audience overall experience to the next level. Through this musical, we will weave the heartfelt story of Prof. Kao's undeniable persevering character and the unwavering commitment of love.

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無私奉獻，改變未來

光纖讓我們即時通訊、學習、工作與分享；而今日有這項技術，源於高錕教授未完的夢想——希望網絡能普及到一個程度，讓未來的用戶可以免費上網。他選擇不為光纖申請專利，不以金錢為先，只為讓更多人受惠。天涯，從此若比鄰。

A Selfless Dedication that Transformed the Future

Fibre optics enabled us to communicate, learn, work, and share instantly. This technology originated from Professor Charles Kao's unfinished dream of the internet being so popular that everyone can enjoy free access to it. He decided not to patent the technology, nor did he seek to make a profit, simply wishing that more people could benefit from it. From then on, distance no longer divided us.



《一束光——高錕的記憶》展覽
Exhibition of *HighLights – The Memories of Charles Kao*
2025.11.15 – 12.6 10am – 10pm
中庭 The Atrium
免費入場 Free Admission



成就歷史，名垂後世

2009年，「光纖之父」高錕教授以「光在纖維中的傳輸以用於光學通信的突破性貢獻」獲頒諾貝爾物理學獎。一個等待了43年的諾貝爾物理學獎，從他在1966年首次提出這項劃時代的構想，到2009年終於獲得國際最高榮譽，這束光照亮了人類通訊的未來。晚年他患上腦退化症，但在病中仍不放下創作畫作，並在太太黃美芸的陪伴下走過漫長歲月，雖逐漸忘記許多事，但世界沒有忘記他曾點亮的「一束光」。

Making History, Leaving a Legacy

In 2009, Professor Charles Kao, known as the "Father of Fibre Optics", was awarded the Nobel Prize in Physics for his "groundbreaking achievements concerning the transmission of light in fibres for optical communication". From his pioneering proposal in 1966 to the long-awaited recognition 43 years later when he received the highest international honour, that beam of light had already illuminated the future of human communication. Diagnosed with Alzheimer's disease in his later years, Kao did not give up drawing despite his illness, spending his final days under the devoted support of his wife, Gwen. Although his memories faded gradually, the world has never forgotten the beam of light he once kindled.

