

# Curriculum Vitae

**Dr. Congo Tak Shing CHING (程德勝)**

**Office Address:** Room 633, Applied Science & Technology Building,  
145 Xingda Rd., South Dist., Taichung City 402, Taiwan

**Telephone:** (Work) +886-(0)422840733 EXT 633

**E-mail:** tsching@nchu.edu.tw

**Personal Homepage:** <http://web.nchu.edu.tw/~tsching>



## Education

08/2005 – 05/2006	<b>Certificate in Entrepreneurial Studies</b> <i>University of Colorado at Denver and Health Sciences Center, United States</i>
10/2001 – 07/2005	<b>PhD in Bioengineering</b> (Biomedical Electronics and Instrumentation) <i>University of Strathclyde, United Kingdom</i>
09/1999 – 11/2002	<b>MPhil in Biomedical Engineering</b> (Spinal Biomechanics and Intervertebral Disc Biology) <i>The Hong Kong Polytechnic University, Hong Kong</i>
09/1996 – 12/1999	<b>BSc in Prosthetics and Orthotics (First Class Honours &amp; Graduation with the 1<sup>st</sup> Position)</b> <i>The Hong Kong Polytechnic University, Hong Kong</i>

## Work Experience and Posts Held

8/2019 – Present	<b>Chair</b> Graduate Institute of Biomedical Engineering <i>National Chung Hsing University, Taiwan</i>
08/2016 – Present	<b>Professor</b> Graduate Institute of Biomedical Engineering <i>National Chung Hsing University, Taiwan</i>
11/2016 – Present	<b>Consultant</b> <i>University Entrance Committee for Overseas Chinese Students, Taiwan, R.O.C.</i>
11/2016 – 10/2019	<b>Honorary Professor</b> Department of Health and Physical Education <i>The Education University of Hong Kong, Hong Kong</i>
01/2016 – 12/2016	<b>Consultant</b> Innovation Incubation Center <i>Nan Kai University of Technology, Taiwan</i>
03/2015 – 02/2018	<b>Consultant</b> <i>AllBio Science Incorporated</i>
02/2015 – 07/2016	<b>Professor</b> Department of Electrical Engineering <i>National Chi Nan University, Taiwan</i>
09/2011 – 07/2016	<b>Section Chief of Nature &amp; Science Section</b> Center for General Education <i>National Chi Nan University, Taiwan</i>
05/2013 – 07/2016	<b>Section Chief of Publicity Section</b>

*University Entrance Committee for Overseas Chinese Students, Taiwan, R.O.C.*

08/2013 – 07/2015	<b>Director</b> Graduate Program of Optoelectronic Technology <i>National Chi Nan University, Taiwan</i>
02/2012 – 07/2015	<b>Jointly Appointed Associate Professor</b> Department of Applied Materials and Optoelectronic Engineering <i>National Chi Nan University, Taiwan</i>
08/2011 – 01/2015	<b>Associate Professor</b> Department of Electrical Engineering <i>National Chi Nan University, Taiwan</i>
08/2008 – 07/2011	<b>Assistant Professor</b> Graduate Institute of Biomedicine and Biomedical Technology <i>National Chi Nan University, Taiwan</i>
02/2007 – 07/2008	<b>Assistant Professor</b> Department of Photonics and Communication Engineering <i>Asia University, Taiwan</i>
02/2006 – 02/2007	<b>Post-Doctoral Research Fellow</b> Department of Bioengineering <i>University of Strathclyde, United Kingdom</i>
08/2005 – 12/2005	<b>Post-Doctoral Research Fellow</b> <i>Department of Trade and Industry, United Kingdom</i> <i>University of Colorado at Denver and Health Sciences Center, United States</i>
10/1999 – 04/2001	<b>Associate Prosthetist-Orthotist</b> <i>Cosmo Rehabilitation Centre and Associates, Hong Kong</i>

## Research Interests

Biomedical instrumentation design; biomedical electronics; biosensors; tissue bioimpedance; non-invasive and transdermal metabolites/biomarkers extraction and drugs delivery; assistive device

## Service to Professional & Scientific Bodies, Membership of Professional & Learned Societies

[Please visit my personal homepage for detail information.](#)

- Keynote speaker of International Conference on Biological Information and Biomedical Engineering (BIBE 2018), 6-8 July 2018, Shanghai, China
- Board member of the council of the Prosthetics and Orthotics Society of Taiwan, since 2019
- Board member of the council of the Taiwan Rehabilitation Engineering and Assistive Technology Society, since 2018
- Keynote speaker of The 2nd International Conference on Biomedical and Biological Engineering (BBE2017), 26-28 May 2017, Guilin, China
- Proposal Reviewer of Project for Industry-Academia Collaboration on Innovative R&D at Southern Taiwan Science Park, Mar 2017
- Keynote speaker of The International Conference on Biological Engineering and Pharmacy (BEP2016), 9-11 Dec 2016, Shanghai, China
- Reviewer of investment case (final review) at Central Taiwan Science Park Bureau, Nov 2016
- Keynote speaker of The International Conference on Biomedical and Biological Engineering (BBE2016), 15-17 Jul 2016, Shanghai, China
- Invited speaker of The 11th Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems, 17-20 April 2016, Matsushima Bay and Sendai MEMS City, Japan
- Supervising council of the Taiwan Rehabilitation Engineering and Assistive Technology Society, 2014~2017
- Professional examiner of the Technical Review Committee of the Ministry of Economic Affairs (Taiwan), Feb 2012
- Section chair of many national and international conferences. E.g. The 11th Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems, 17-20 April, 2016, Matsushima Bay and Sendai MEMS City, Japan

- Committee of many national and international conferences. E.g. Program committee of The 16th IEEE International Conference on Bioinformatics and Bioengineering, 31 Oct – 2 Nov 2016, Taichung, Taiwan

## Patents

**There are 20 patents (18 invention patents and 2 utility patents), including 3 USA patents and 17 Taiwan patents.**

- [1] 鄭智修、林呈鳳、程德勝。回饋式頸部運動訓練之方法。中華民國專利，發明第 I653076。
- [2] 鄭智修、程德勝、陳柏旭。頭頸姿勢監測之方法。中華民國專利，發明第 I643096。
- [3] 孫台平、程德勝、鄭登允、陳宜黛、董佑翔、謝秀利。利用多波段分光測定葡萄糖濃度之方法。中華民國專利，發明第 I597484。
- [4] 孫台平、陳宜黛、謝秀利、程德勝。以厚膜陶瓷基板技術製作耐高溫耐酸鹼陣列感測元件。中華民國專利，發明第 I586961。
- [5] 孫台平、程德勝、謝中維、謝秀利。檢測茶葉農藥殘留之光譜分析法。中華民國專利，發明第 I586953。
- [6] 程德勝、孫台平、許登翔。復健機械手系統。中華民國專利，發明第 I577365。
- [7] 程德勝、孫台平、曾獻民、安謙睿、李帛翰、陳志昊。智慧床。中華民國專利，發明第 I561230。
- [8] 程德勝、孫台平、陳鵬文、黃鵬宇。大腸直腸癌的檢測方法。中華民國專利，發明第 I498550。
- [9] 黃素華、程德勝、張清濠。非侵入式代謝產物偵測裝置。中華民國專利，發明第 I571238。
- [10] 程德勝、孫台平、周宗儒。電阻抗式生物感測器及其製造方法。中華民國專利，發明第 I486584。
- [11] 程德勝、孫台平、王俊智。電流式生物感測器及其製作方法。中華民國專利，發明第 I486586。
- [12] 程德勝、孫台平、劉韋豪。檢測系統及資料處理裝置。中華民國專利，發明第 I445951。
- [13] 孫台平、程德勝、葉韋成。量測裝置。中華民國專利，發明第 I445956。
- [14] 程德勝、孫台平、劉家銘。阻抗分析儀、阻抗讀出裝置。中華民國專利，發明第 I422837。
- [15] 孫台平、陳鐘沅、謝秀利、程德勝。離子感測電路。中華民國專利，發明第 I400888。
- [16] Tai-Ping Sun, Chung-Yuan Chen, Hsiu-Li Shieh, Tak-Shing Ching. Ion sensing circuit. US patent filed: US8425744B2, issued date: 23 April 2013.
- [17] Tak-Shing Ching, Tai-Ping Sun, Chia-Ming Liu. Impedance analyzer. US patent filed: US9050017B2, issued date: June 2015.
- [18] Tai-Ping Sun, Tak-Shing Ching, Wei-Chung Yeh. Measurement device. US patent filed: US9151726B2, issued date: October 2015.
- [19] 魏大森、章良渭、陳適卿、程德勝、陳友倫。脊椎側彎矯正器。中華民國專利，新型第 M548527。
- [20] 程德勝、孫台平、梁錦倫、鄭登允。電腦化扁平足診斷系統。中華民國專利，新型第 M528494。

## Representative Publications (Please visit my personal homepage for detail information)

**Published 34 international journal articles**

- [1] Congo Tak-Shing Ching\*, Nguyen van Hieu, Teng-Yun Cheng, Lin-Shien Fu, Tai-Ping Sun, Ming-Yen Liu, Su-Hua Huang\* and Yan-Dong Yao. Liver Cancer Detection by a Simple, Inexpensive and Effective Immunosensor with Zinc Oxide Nanoparticles. Sensors 2015; 15: 29408 – 29418 (SCI)
- [2] Congo Tak-Shing Ching\* and Jhih-Hao Chen. An Non-invasive, Bioimpedance-based 2-Dimensional Imaging System for Detection and Localization of Pathological Epithelial Tissues. Sensors and Actuators B: Chemical 2015; 206: 319 – 326 (SCI)
- [3] Congo Tak-Shing Ching\* and Wei-Yi Chih. Design and evaluation of an affordable and programmable mobile device, capable of delivering constant current and high voltage electric pulses of different waveforms for biomedical and clinical applications. Sensors and Actuators B: Chemical 2014; 194: 361 – 370 (SCI)
- [4] Congo Tak-Shing Ching\*, Kang-Ming Chang, Yu-Lung Hung\*, Chin-Kang Chen, Kok-Khun Yong, Yue-Xiu Jiang, Tai-Ping Sun\* and Hsiu-Li Shieh. An array configuration to increase the performance of a biosensor. Sensors and Actuators B: Chemical 2013; 178: 465 – 472 (SCI)
- [5] Congo Tak-Shing Ching\*, Lin-Shien Fu, Tai-Ping Sun, Tzu-Hsiang Hsu and Kang-Ming Chang\*. Use of electroporation and reverse iontophoresis for extraction of transdermal multibiomarkers. International Journal of Nanomedicine 2012; 7: 885 – 894 (SCI)
- [6] Tai-Ping Sun#, Congo Tak-Shing Ching\*.#, Chi-Sheng Cheng#, Su-Hua Huang, Yi-Juai Chen, Chin-Sung Hsiao, Ching-Haur Chang, Shiow-Yuan Huang, Hsiu-Li Shieh, Wei-Hao Liu, Chia-Ming Liu and Chung-Yuan Chen. The use of bioimpedance in the detection/screening of tongue cancer. Cancer Epidemiology 2010; 34: 207-211 (SCI)