Curriculum Vitae

Name: **Yongping ZHENG** yongping.zheng@polyu.edu.hk
Date & Place of Birth: September 1966, Ningbo, Zhejiang, P.R. China
Nationality: Hong Kong SAR, China
Family: Married with three daughters
Present Position: Head and Henry G. Leong Professor in Biomedical Engineering
Department of Biomedical Engineering, The Hong Kong Polytechnic University

I. Education

1993 ~ 1997	*PhD in Biomedical Engineering* Rehabilitation Engineering Center The Hong Kong Polytechnic University, Kowloon, Hong Kong
1990 ~ 1993	*MEng in Electronic and Information Engineering* The University of Science and Technology of China, Hefei, China
1985 ~ 1990	*BSc in Electronic and Information Engineering* The University of Science and Technology of China, Hefei, China

II. Employment

2017 Oct ~	*Head*, Henry G. Leong Professor in Biomedical Engineering Department of Biomedical Engineering The Hong Kong Polytechnic University, Kowloon, Hong Kong
2014 May ~ Sep 2017	*Head,* Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong
2012 May ~ 2014 Apr	*Interim Head,* Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong
2012 Apr ~	*Professor,* Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong
2009 ~	*Adjunct Professor,* Department of Electronic Engineering, Fudan University, Shanghai, China
2008 ~	*Adjunct Professor,* Department of Electronic Engineering, The Chinese University of Hong Kong, New Territory, Hong Kong
2008 ~ 2010	A*ssociate Director,* Research Institute of Innovative Products and Technologies The Hong Kong Polytechnic University, Kowloon, Hong Kong
2008 ~ 2012	*Professor,* Department of Health Technology and Informatics The Hong Kong Polytechnic University, Kowloon, Hong Kong
2005 ~ 2008	*Associate Professor,* Department of Health Technology and Informatics
2001 ~ 2005	*Assistant Professor,* Rehabilitation Engineering Center
1998 ~ 2001	*Postdoctoral Fellow* *(Biomedical ultrasound and instrumentation for soft tissue assessment)* Rehabilitation Engineering Center The Hong Kong Polytechnic University, Kowloon, Hong Kong
1997 ~ 1998	*Postdoctoral Fellow* *(Acoustic microscope and nonlinear acoustics for material characterization)* Center for Imaging Research and Advanced Materials Characterization University of Windsor, Windsor, Canada

III. Research Interests

Ultrasound instrumentation, ultrasonic measurement and imaging of tissue elasticity, Sonomyography (ultrasonic measurement of muscle dynamics); 3D ultrasound imaging; Optical coherence tomography, Ultrasound image and signal processing; Wearable vital sign sensors; Smart aging technologies.

("**Ultrasound Indentation**", "**Sonomyography**", "**Elastomicroscopy**", "**Scolioscan**^{TM}" were terms coined by YP Zheng and his coworkers in 1995, 2002, and 2003, 2010, respectively. Patents of related technologies have been filed and some of them have been commercialized.)

IV. Teaching Subjects

Subject taught: Bioelectrical Technology I: Circuits and Systems; Biosignal and Image Processing; Bioelectrical Technology II: Electronics; Principles of Bioinstrumentation; Applied Biosignal Processing (Postgraduate); Ultrasound in Medicine and Biology (Postgraduate); Functional and Molecular Imaging: From Body System to Molecules (Postgraduate). Wearable Sensors for Healthcare and Fitness for Everyone

Contributed to: Bioengineering Laboratories; Bioengineering Design; Introduction to Health Technology; Biomedical Engineering Research and Design; Bionic Human

V. Administration Duties

2010 Dec ~	Member, PolyU Knowledge Transfer Committee
2010 Sep ~ 2012 Jun	Coordinator, BME Alumni
2007 Jul ~ 2008 Jul	Deputy Program Leader, Biomedical Engineering
2006 Jul ~ 2007 Jun	Program Leader, Biomedical Engineering
2005 Sep~	Coordinator, Thematic Area on Innovative Medical Imaging and Technology
2005 Sep ~ 2008 Jul	Member, Faculty Research Committee
2005 Sep ~ 2006 Jun	Deputy Chair, Departmental Research Committee (DRC)
2003 Jun ~ 2005 Sep	Chair, Departmental Research Committee (DRC)
2003 Jun ~ 2005 Sep	Chair, Departmental Award Committee (DAC)
2003 Jun ~ 2005 Sep	Departmental Seminar Coordinator
2002 Sep ~ 2004 Jun	Member, Faculty Human Subjects Ethical Sub-Committer

VI. Professional Memberships, Editorial Positions and Paper Reviewers

1995 ~	IEEE (Engineering in Medicine and Biology Society)
2002 ~	IEEE (Ultrasonics, Ferroelectrics and Frequency Control)
2002 ~	HKIE (Electronics Discipline and Biomedical Engineering Discipline)
2006~	IEEE Senior Member
2013~	HKIE Fellow
2012~	Honorary Advisor, Hong Kong Medical and Healthcare Device Industries Association
2012~2013	Deputy Chair, HKIE Biomedical Engineering Division
2013~2014	Chair (elected), HKIE Biomedical Engineering Division
2013~2014	Council Member (elected), World Association for Chinese Biomedical Engineers
2014~	Council Member (elected), Hong Kong Institution of Engineers (HKIE)
2015~2017	Secretary (elected), World Association of Chinese Biomedical Engineers (WACBE)
2017~	Secretary, World Association of Chinese Biomedical Engineers (WACBE)
2015~2017	Committee Member, Education and Accreditation Committee, International Federation of Medical and Biological Engineering (IFMBE)
2006~	Editorial Board, Journal of Ultrasound in Clinical Medicine (Chinese)
2007~	Editorial Board, The Open Biomedical Engineering Journal
2007	Associate Editor, Biomedical Imaging track, IEEE EMBS 29th Annual Conference, Lyon, France, Aug 23-26 2007
2008~	Associate Editor, The Hong Kong Institution of Engineers (HKIE) Transactions
2012~	Member of International Advisory Board, Physiological Measurement
2012~	Member of Editorial Board, Ultrasound in Medicine and Biology
2015~	Associate Editor, Journal of Medical and Biological Engineering
2017~	Associate Editor, Biomedical Signal Processing and Control

VII. Prizes and Awards

- **Most Promising Idea Award (Judges' Choice),** Zheng YP**.** Scolioscan**. Global Healthcare Innovation Academy**, Calgary, Alberta, Canada, Aug 2016.
- **Equipment and Machinery Design Award,** Zheng YP. Scolioscan. **Hong Kong Awards for Industries.** Hong Kong, Dec 2015
- **Champion, Innovation Award of Excellence**, ZHENG YP (Team Leader). Scolioscan: Radiation-free assessment scoliosis using 3D ultrasound imaging. **The Hong Kong Innovation Academy.** Nov 2015
- **3rd Prize, GE Foundation TECH Award.** JIANG Weiwei (PhD student). 3D annotation for ultrasound imaging. **Institute of International Education.** Nov 2013.
- **Winner of PolyU 2012 Technology Transfer Award for the Technology,** Zheng YP -- 3D Ultrasound Imaging System for Assessing Scoliosis, Apr 2013**.**
- **2nd Prize of Hong Kong Medical and Healthcare Device Industries Association Student Research Award**. ZHOU Guangquan (PhD student) . Sonomyography for human motion analysis. Chief Supervisor: Zheng YP. Hong Kong, Nov 2012.
- **Best Poster Award (Silver award)** (2012). Ying M and Zheng YP. Repeatability of 3D Ultrasound with and without compound imaging in carotid plaque volume measurement. Joint Congress of Medical Ultrasound, Seoul, 11-13 May 2012.
- **Gold Medal Award and Mau Award for the Best Educational Innovation** (2012). Zheng YP and Cheung JCW. Scolioscan: Radiation-free assessment of scoliosis using 3D ultrasound. The International Exhibition of Inventions of Geneva, Apr 22 2012.
- **Meyer Poon Memorial Award** *2011 from the Hong Kong Institute of Acoustics (HKIOA).* Wang Congzhi, Ultrasound Measurement of Skeletal Muscle Elasticity. Chief Supervisor: Zheng YP. PolyU, Aug 2011.
- **First Prize of Hong Kong Medical and Healthcare Device Industries Association Student Research Award**. HUANG Yanping (PhD student) . Development of an Arthroscopy-based Water-jet Ultrasound Indentation Probe for Assessing the Integrity of Articular Cartilage in Degeneration or after Repair. Chief Supervisor: Zheng YP. Hong Kong, Nov 2010.
- **2nd Runner-up of Hong Kong Medical and Healthcare Device Industries Association Student Research Award**. Mr MAK Tak Man (MPhil student). Liver Fibrosis Assessment Using Transient Elastography Guided with Real-time B-Mode Ultrasound Imaging. Chief Supervisor: Zheng YP. Hong Kong, Nov 2010.
- **Memorial Award of Best Young Engineers' Paper Competition.** Mr MAK Tak Man (MPhil student), Liver Fibrosis Assessment Using Transient Elastography Guided with Real-time B-Mode Ultrasound Imaging. ***BME2010 conference***. Chief Supervisor: Zheng YP. Hong Kong, Nov 2010.
- **Silver Medal.** Development of 3-D Ultrasound System for Assessment of Adolescent Idiopathic Scoliosis**.** iENA (International Trade Fair for "Ideas-Inventions-New Products) 2010. Zheng YP, Cheung CW James. Nuremberg, Germany, Nov 2010.
- **First Prize of IEEE EMBS Hong Kong Chapter Student Paper Competition.** CHEUNG CW James, Development of 3-D Ultrasound System for Assessment of Adolescent Idiopathic Scoliosis Chief Supervisor: Zheng YP. PolyU, Aug 2010.
- **Faculty Distinguished PhD Thesis Award**. Guo Jingyi, One-dimensional Sonomyography (SMG) for Skeletal Muscle Assessment and Prosthetic Control. Chief Supervisor: Zheng YP. PolyU, Aug 2010.
- **Meyer Poon Memorial Award** *2010 from the Hong Kong Institute of Acoustics (HKIOA).* Guo Jingyi, One-dimensional Sonomyography (SMG) for Skeletal Muscle Assessment and Prosthetic Control. Chief Supervisor: Zheng YP. PolyU, Aug 2010.
- **First Prize of HTI Postgraduate Symposium 2010。** CHEUNG CW James, Development of 3-D Ultrasound System for Assessment of Adolescent Idiopathic Scoliosis Chief Supervisor: Zheng YP. PolyU, Jun 2010.

- **2nd Runner-up of HKMHDIA2009 Student Research Award.** CHEUNG CW James, Development of 3-D Ultrasound System for Assessment of Adolescent Idiopathic Scoliosis Chief Supervisor: Zheng YP. PolyU, Nov 2009.
- **Meyer Poon Memorial Award** *2009 (Postgraduate Category) from the Hong Kong Institute of Acoustics (HKIOA).* CHAN King-chung Kenny, MSc Dissertation, Feasibility of In-Vivo Mapping of Pulmonary Pathology using Acoustic Transmission and In-Vivo Measurement of Sound Speed in Healthy and Diseased Lungs. Chief Supervisor: Zheng YP. PolyU, Aug 2009.
- **Faculty Distinguished Thesis Award**. Wang Q, Ultrasound monitoring of transient and inhomogeneous swelling of articular cartilage. Chief Supervisor: Zheng YP. PolyU, Sep 2007.
- **Faculty Distinguished Thesis Award**. Lu MH, Development of a noncontact ultrasound indentation system for measuring tissue material properties using water jet. Chief Supervisor: Zheng YP. PolyU, May 2007.
- **Faculty Distinguished Thesis Award**. Huang QH, Development of a portable 3D ultrasound system for imaging and measurement of musculoskeletal body parts. Chief Supervisor: Zheng YP. PolyU, Apr 2007.
- **Bronze Award.** Guo X and Zheng YP, Ultrasonic Decalcification: Technique and Agents. INEA 2006 (Ideas-Inventions-New Products), Nuremberg, Germany, 2-5 November, 2006.
- **Asia-Pacific Biomedical Engineering Traveling Fellowship Award**. Zheng YP. Supported by International Federation of Medical and Biological Engineering, Biomedical Division of Hong Kong Institute of Engineers. Aug 2006
- **Young Investigator Best Scientific Paper Award Bronze Prize.** Zheng YP, Shi J, Huang QH, Chen X. Sonomyography: Dynamic quantitative assessment of muscles using ultrasound. ***The 11th Congress of World Federation of Ultrasound in Medicine and Biology***. Seoul, Korea, May 2006.
- **Faculty Award for Outstanding Research Performance/Achievement**. The Hong Kong Polytechnic University, Nov 2005.
- **Sliver Award**. Zheng YP, Mak AFT, Wang CZ, Zhou YJ. Wearable vital sign sensor. ***54th World Exhibition of Innovation, Research and New Technology***, Brussels Eureka 2005, Belgium, Nov 2005.
- **Bronze Award**. Mak AFT and Zheng YP. Tissue ultrasound palpation system (TUPS): an objective human tissue stiffness measurement medical device. ***53th World Exhibition of Innovation, Research and New Technology***, Brussels Eureka 2004, Belgium, Nov 2004.
- **Best Student Papers Competition, 1st Runner-up**. Wang Q and Zheng YP. Study on transient osmotic-induced hydration of articular cartilage by high-frequency ultrasound. ***Biomedical Engineering Conference BME2004***. Sept 2004, Hong Kong.
- **AFSUMB 2004 JSUM Award.** Huang QH and Zheng YP. Development of a portable 3D ultrasound imaging system for musculoskeletal tissues. ***7th Congress of the Asian Federation of Societies for Ultrasound in Medicine and Biology (AFSUMB)***, May 2004, Utsunomiya, Japan
- **Second Runner-up Award Winner.** Wong TK, Choi A, Au R, Zheng YP (Supervisor). PolyU-IDT Innovative Entrepreneur Contest 2001-2002. Jun 2003.
- **Award of Outstanding Presentation**. Zheng YP, Biomechanical assessment of soft tissues using ultrasound palpation. ***1999 Annual conference of Chinese Acoustic Society***, Nov 1999, Wuhan.

VIII. Supervisions for Research Personnel

- **Chief supervisor for postgraduate students**

- Graduated

1. JIANG Weiwei, **PhD**, 3D ultrasound imaging for breast assessment. (Started in Jul 2010, thesis submitted in Oct 2014, viva passed in Mar 2015)
2. ZHOU Guangquan, **PhD**, Compounding motion analysis using ultrasound and optical methods. (Started in May 2010, thesis submitted in Dec 2014, viva passed in Mar 2015).
3. CHEUNG CW James, **PhD**, Development of 3-D ultrasound imaging system for scoliosis. (Started in Mar 2008, thesis submitted in Mar 2013, viva passed in Aug 2013)
4. HUANG Yanping, **PhD**, Arthroscopy-based Water Jet Ultrasound Indentation Probe for Mechano-Acoustic Assessment of Articular Cartilage Degeneration. (Started in Sep 2007, thesis submitted in Oct 2012, Viva passed in Feb 2013)
5. WANG Congzhi, **PhD**, Development of a novel acousto-mecho-optical sensor for continuous measurement of blood pressure. (Started in Nov 2006; Thesis submitted in Dec 2010; Viva passed in Mar 2011)
6. GUO Jingyi, **PhD**, One-dimensional Sonomyography (SMG) for Skeletal Muscle Assessment and Prosthetic Control. (Started in Mar 2006; Thesis submitted in May 2006; Viva passed in Aug 2010. Faculty Distinguished PhD Thesis Award)
7. WANG Qing, **PhD**, Ultrasound monitoring of transient and inhomogeneous swelling of articular cartilage. (Started in Aug 2003; Thesis submitted in Dec 2006; Viva passed in Jun 2007. Faculty Distinguished PhD Thesis Award)
8. LU Minghua, Tracy, **PhD**, Development of noncontact ultrasound palpation system for soft tissues. (Started in Jun 2002; Thesis submitted in Nov 2006; Viva passed in May 2007. Faculty Distinguished PhD Thesis Award)
9. HUANG Qinghua, **PhD**, 3D Ultrasound imaging and measurement. (Started in May 2002; Thesis submitted in Aug 2006; Viva passed in Dec 2006. Faculty Distinguished PhD Thesis Award)
10. SHI Jun, **PhD**, Image and signal processing for sonomyography, 2003 to 2005. Registered in the University Of Science and Technology of China. (Thesis submitted in Apr 2005; PhD awarded in Jul 2005; Jun has been a lecturer in Shanghai University since Aug 2005, promoted to Associate Professor in 2008)
11. CHENG Lok-kan Connie, MPhil, Correlations between spinal deformity and back muscle stiffness distribution. (Started in Jan 2014, Viva passed in Jan 2017)
12. MAK Tak Man, **MPhil**, Simultaneous ultrasound imaging and elasticity measurement for liver fibrosis assessment. (Start in Oct 2009, thesis submitted in Sep 2012, Viva passed in Feb 2013)
13. WANG Shuzhe, **MPhil**, OCT and ultrasound assessment for articular cartilage. (Started in Nov 2006; Viva passed in Jul 2009)
14. LI Jiawei, **MPhil**, Ultrasound elastography for breast cancer diagnosis. (Started in Feb 2007; Viva passed in Jun 2009)
15. CHOI Alex, **MPhil** (part-time), Extraction of Young's modulus and Poisson's ratio from indentation test simultaneously. (Part-time. Started in Aug 2003; Viva passed in Mar 2009)
16. HUANG Yanping, **MPhil**, Ultrasound tissue characterization for the assessment of tissue fibrosis induced by radiotherapy. (Started in Nov 2002; Thesis submitted in Nov 2004; Viva passed in Apr 2005; Awarded in Aug 2005; Yanping continues his PhD study in CityU, Hong Kong since Sept 2005)
17. PATIL Sushil, **MPhil**, Investigation of ultrasound speed in articular cartilage. (Started in Sept 2002; Thesis submitted in Dec 2004; Viva passed in Apr 2005; Awarded in Aug 2005; Sushil continues his PhD study in Australia in Sept 2005)
18. TANG Jing, **MSc** dissertation, Monitoring of garment pressure and physical activity level for pressure garment therapy using wearable sensor. (Completed in Jan 2013).
19. YANG Ning, **MSc** dissertation, Ultrasound measurement of elasticity of back muscles of subjects with scoliosis. (Completed in Jul 2012)
20. CHEUNG Yuen Kui, **MSc** dissertation, Biomechanical assessment of plantar soft tissues in diabetic patients with and without an ulcer history. (Completed in May 2011)
21. CHAN King-Chung, Kenny, **MSc** dissertation, Assessment of lung diseases in-vivo using acoustic transmission. (Completed in May 2009)

22. LEE Tat Hing, Louis, **MSc** dissertation, Development of PDA-based ultrasound device for tissue thickness measurement. (Completed in Dec 2006)
23. CHEUNG James, **MSc** dissertation, Characterization of articular cartilage using ultrasound elastomicroscopy. (Completed in May 2005)
24. CHAN Jolinna, **MSc** dissertation, Ultrasonic measurement of the strains of normal and healed Achilles tendon during isometric contraction. (Completed in May 2004)
25. TO Ricky, **MSc** dissertation, Performing geriatric fall prevention assessment through teleconferencing: feasibility study. (Completed in May 2002)
26. KWOK Anthony, **MSc** dissertation, Effects of interferential therapy for pain reduction in patients with osteoarthritis of the knee. (Completed in May 2002)

VIIII. Grants Awarded

- **External Grants as PI (Total Amount: ~HK$12,950k)**
  1. Zheng YP, Tam E, Chueng JCW. Jockey Club Smart Aging Hub. **Hong Kong Jockey Club**. HKD47.95M, 2017-2022.
  2. Zheng YP, Tang D, Alam M, Wang XY, Zhou YJ. Ultrasound evaluation and stimulation for neuromusculoskeletal rehabilitation. **Guangdong Provincial Work Injury Rehabilitation Center** and PolyU. HKD3M, 2016-2020.
  3. Zheng YP. Ultrasound evaluation of spine health for patients with spinal cord injury (SCI). **Hong Kong Spinal Cord Injury Fund Ltd**. HKD500,000, 2015-2020.
  4. Zheng YP. Heart rate measurement using Huawei Watch. **Collaborative with Huawei Technologies Limited**. HK$1.1M. 2015-2016.
  5. Zheng YP. Trial: PDA- and PC-based Ultrasound Imaging and Measurement Devices. **Hong Kong Innovative Technology Fund (ITF) for Public Trial (ITT/028/14GP).** HK$1,259,000. 2015-2017.
  6. Zheng YP, Cheng CH. Development of an ultrasound system with flexible transducer arrays for assessing scoliosis. **Hong Kong Research Grants Council (RGC) General Research Fund** (PolyU 152220/14E). HK$500K. 2014-2017.
  7. Zheng YP, Zhang JY (Postdoctoral Fellow). A novel air jet indentation based optical coherence tomography (OCT) system for measuring the elasticity of crystalline lens in vivo. **Hong Kong Scholars Program**. HKD300K. 2013-2015.
  8. Zheng YP, Cheung JCW. Scolioscan: Radiation-free scoliosis assessment system using 3D ultrasound imaging. **Hong Kong Innovative Technology Fund (ITF) for University-Industry Collaboration (UIM/213)**. Budget: HKD5.84M. 2012-2014.
  9. Zheng YP. Use of innovation and technology in enhancement of quality of life of the elderly. **Hong Kong Innovative Technology Fund (ITF) Seed Fund to ASTRI**. Subcontracted Budget: HKD450K. 2011-2012.
  10. Zheng YP, Cheng Ching-hsiang. R&D platform for new generation beamformer development for medical ultrasound scanners. **Hong Kong Innovative Technology Fund (ITF) for HK-Guangdong Collaboration**. (GHP/047/09). Budget: HK$6.34M. 2010-2012.
  11. Zheng YP, Qin L (CUHK). Development of arthroscopy-based water jet ultrasound indentation probe for assessment of articular cartilage degeneration. Hong Kong Research Grants Council (RGC) General Research Fund (**GRF**, formally CERG) (PolyU5354/08E). HK$825K. 2009-2012.
  12. Zheng YP, Ng KW (CUHK), Cheng JCY, Wong MS, Huang QH, Lam TP. Development of 3-D ultrasound system for assessment adolescent idiopathic scoliosis. Research Grants Council (RGC) Competitive Earmarked Research Grant (**CERG**). (PolyU5332/07E). HK$449K. 2008-2010.
  13. Zheng YP, So R (HK Sports Institute), Chan H, Au-Yang A, Chi Z, Qin L. Sonomyography. **CERG**. (PolyU 5331/06E), HK$410k. 2007-2009.

14. Zheng YP, Ying M, Shen MF. PDA- and PC-based Ultrasound Imaging and Measurement Devices. **Hong Kong Innovative Technology Fund (ITF) for HK-Guangdong Collaboration**. (GHP/061/05). Budget: HK$3,000k (HK$500k sponsored by two companies). 2006-2008.
15. Zheng YP, Chen ZP (UC Irvine). OCT Elastomicroscopy. **CERG**. (PolyU 5318/05E), HK$449k. 2005-2008
16. Zheng YP, Bridal L (Univ of Paris), Saied A, Qin L, and Mak AFT. Ultrasound Elastomicroscopy. **CERG.** (PolyU 5245/03E), HK$581k. 2003-2005
17. Zheng YP. Development of a tissue ultrasound palpation sensor for tissue fibrosis assessment. **Chinese University of Hong Kong**. 2005-2006. HK$95k. (Consultancy)
18. Zheng YP, Mow VC (Columbia Univ), Qin L, and Lu MW. Ultrasonic Characterization of the Transient and Inhomogeneous Swelling Behavior and Progressive Degeneration of Articular Cartilage. **CERG.** (PolyU 5199/02E), HK$717k. 2002-2005
19. Zheng YP, Bridal SL (Univ of Paris), Saied A, Laugier P, and Mak AFT. Development of an Acoustic ElastoMicroscope (AEM) System. France/Hong Kong Joint Research Scheme for Traveling, **Procore**, 2002-2004 (F-HK12/01T, 3-ZF69), HK$124k.

- **External Grants as a Co-I (Total Amount: ~HK$14,231k)**

20. Qin L, …. Zheng YP (Co-I)… Functional Bone Regeneration in Challenging Bone Disorders and Defects. **Theme-based Research Scheme** (T12-402/17-N), HKD33.33M, 2017-2021.
21. Wen CY, Zheng YP, Lee MHT, Sun L, Lai PX. Photoacoustic molecular imaging of osteoarthritic pain – A proof-of-concept study. **HMRF Research Fellowship Scheme**. HK755.9K. 2016-2018.
22. Tam EWC, Zheng YP. An integrated system that provides health monitoring, environmental manipulation and safety alert for non-ambulatory individuals. **ITF** (ITS-029-13), HK$999,350. 10/2013-1/2015.
23. Cheing GLY, Zheng YP, Ng G, Huang L. Monitoring stages of wound healing with elasticity measured using optical-coherence-tomography (OCT) based air-jet indentation system. **GRF(**PolyU 5600/11M). HK$950K, 2011-2013.
24. Sun L, Wei G, Zheng YP, Shung KK. Development of a high-speed high-frequency ultrasound microscopic imaging system for longitudinal assessment of the functions of adult zebrafish heart regeneration, **GRF** (PolyU5301/09E). HK$548K. 2009-2012.
25. Ying TC (HTI), Zheng YP. 3-D elastography for cervical lymph node volume measurement: system development and clinical application. Research Grants Council (RGC) General Research Fund (**GRF**, formally CERG) (PolyU5339/08E). HK$407K. 2008-2010.
26. Cheing GLY (RS), Zheng YP. Does mechanical property of the plantar tissue influence postural control among people with diabetes? **GRF** (formally CERG) (PolyU5128/08E). HK$594K. 2009-2011.
27. Cheing GLY (RS), Zheng YP. Monitoring of diabetic ulcer healing using optical and ultrasound techniques. Hong Kong Research Grants Council (RGC) Competitive Earmarked Research Grant (**CERG**). (PolyU 5126/07E). HK$729. 2008-2010.
28. Wong MS (HTI), Ng KW, Ying TC, Zheng YP, Cheng JCY, Lam TP. Could clinical ultrasound improve the fitting of spinal orthosis for patients with AIS? **CERG**. (PolyU 5635/07M). HK$535K. 2008-2010.
29. Wong MWN (CUHK), Char CKM, LEE KM, Qin L, Zheng YP. Application of bio-engineered chondrocyte pellet in osteochondral defect. **CERG**. (CUHK 4765/07M). HK$1.023M. 2008-2011.
30. Zhang L, Zheng YP, Zhu HL. Robust Super-resolution of CFA Video Sequence. **Edward Sai Kim Hotung Fund**. 2007-2011(5-ZH52). HK$548k.
31. Guo X, Zheng YP (Deputy Coordinator). Development of ultrasound-assisted bone decalcification device. Hong Kong Innovative Technology (**ITF**) Fund. GHP/006/06. HK$1.5M, 2007-2009.
32. Tsang C, Zheng YP (Deputy Coordinator), Hung LK. Smart pressure monitored suits for managing hypertropic scar. Hong Kong Innovative Technology (**ITF**) Fund. K-ZP0W. HK$900k, 2006-2007.

33. Cheing G, Zheng YP. Optical assessment and electromagnetic therapy for diabetic peripheral polyneuropathy. Research Grants Council (RGC) Competitive Earmarked Research Grant (**CERG**). (PolyU 5131/06E), HK$357k. 2007-2009.
34. Tsang C, Tam E, Zheng YP. To study the biomechanical principles of pressure therapy on post traumatic hypertrophic scar among the Chinese population. **CERG**. (PolyU 5289/06E), HK$354k. 2007-2009.
35. Nedelec B (McGill Univ, Canada), Lasalle L, Zheng YP, et al. Quantitative measurement of hypertropic scar in Quebec and Hong Kong burn survivors. **Quebec Research Fund**. CAD24,785. 2006-2008.
36. Huang J (Chongqing Univ of Medical Science, China), Zheng YP, et al. Catheter-based color ultrasound imaging of heart tissue elasticity. **NSFC Earmarked Fund for Scientific Instrument Research and Development**. RMB1,218k. 2006-2009.
37. Li ZM, Zheng YP , Goitz RJ. An investigation of carpal tunnel mechanics using ultrasound. **The Pittsburgh Foundation**, US$5k. 2005-2006
38. So R, Zheng YP, Tse M, and Xu ZZ. Application of ultrasound measurement on evaluating the effect of manual therapy on relaxing muscle tightness. **Hong Kong Sports Institute**. HK$107k (Responsible for HK$35k transferred to PolyU). 2004-2006.
39. Mak AFT, Zheng YP, et al. Telecare Technology for the elderly and the disabled at home and in community. Responsible for the wearable sensor for heart-rate and blood pressure. **The Hong Kong Jockey Club Charities Trust**. HK$3,140k. (Responsible for an amount larger than HK$800k). 2003-2007.
40. Qin L, Leung KS, Zheng YP, Lee KM, Chan KM. New bone formation and Tendon Cartilaginous Metaplasia Prevent Postoperative Articular Cartilage Deterioration and Improve Joint Tracking - A Partial Patellectomy Model in Rabbits. **CERG.** HK$644k. 2003-2005.
41. Yu W, Chung J, Tokura H, Li Y, and Zheng YP . Effects of Foundation Garment Pressure on Women's Health. **CERG.** HK$651k. 2003-2005
42. Qin L, Leung KS, Guo X, Zheng YP. Biophysical Intervention for Enhancing Bone-Tendon Junction Repair during and after Immobilization - A Partial Patellectomy Model in Rabbits. **CERG.** (CUHK, 4153/02M), HK$816k. 2002-2004.

- **Internal Grants as PI (Total Amount: ~HK$12,683k)**

1. To CH, Yip SP, Lo CLS, Lam KCA, Zhang M, Zheng YP, Kee CS, Lam C, Tan YH, Pan F. Biomechanical and multiomics characterization of Ocular Tissues during Myopic Development. PolyU Fund for Strategic Important Area. HKD4.074M. 2017-2020.
2. Somekh MG, Zheng YP (Co-PI), Sun L, Lei DY. Next generation ultrasonic transduction for medicine and imaging. The Hong Kong Polytechnic University Strategic Important Area Research Scheme. HKD2.425M. 2015 to 2018.
3. Zheng YP, Wang YY. Wide field of view ultrasound imaging for assessing adolescent idiopathic scoliosis. The Hong Kong Polytechnic University Joint PhD Supervision Scheme. 2014-2015. HK$168K.
4. Zheng YP, Huang YF. Development and application of OCT-based ari-jet indentation technique for measurement of corneal biomechanical properties. The Hong Kong Polytechnic University Joint PhD Supervision Scheme. 2013-2014. HK$168K
5. Zheng YP, Chan H, Chi ZR, Lun D, Mak AFT, Shi SQ, Wong M, Ying M. Ultrasound elasticity imaging and measurement using vibration. The Hong Kong Polytechnic University Niche Area Fund. 2008-2012. HK$2.56M.
6. Zheng YP (Coordinator), et al. Enhancing PolyU Ultrasound Facilities for Elasticity Imaging – Towards a Global Leading Center for Biomedical Ultrasound Research. The Hong Kong Polytechnic University Niche Area Fund for Equipments. 2007-2008. HK$5.5M

7. Zheng YP, NG YFG, SO R, Xie HB. Assessment of muscle functions using integrated information of sonomyography, electromyography, and mechanomyography signals. The Hong Kong Polytechnic University Postdoctoral Fellowship. 2008-2010 (G-YX1F), HK$696k.

8. Zheng YP, Lau KT, and Ling C. Mechanical analysis of noncontact indentation for tissue characterization using water-jet and air-jet compression. The Hong Kong Polytechnic University Postdoctoral Fellowship. 2006-2008 (G-YX80), HK$721k.

9. Zheng YP and Chi ZR. Development of compound motion analysis system using 3D ultrasound and optical measurement. The Hong Kong Polytechnic University Inter-faculty Grant. 2005-2007 (G-YE22), HK$290k.

10. Zheng YP (PI), et al. Acquisition of optical coherence tomography (OCT) systems. The Hong Kong Polytechnic University Fund for Interdisciplinary Large Equipment 2005 (D01H), HK$589k

11. Zheng YP, Chan-Wong HLW, and Qin L. Sonomyography (SMG). The Hong Kong Polytechnic University Internal Allocation for CERG fundable but not funded projects. 2004-2006 (G-U064), HK$170k.

12. Zheng YP. Sonomyography (SMG) for Musculoskeletal Monitoring and Control: A Preliminary Study. The Hong Kong Polytechnic University Internal Allocation 2003-2004 (A-PE6), HK$144k.

13. Zheng YP, et al. Acquisition of High Frequency (20MHz) Ultrasound Scanner with Radio-Frequency Signal Outputs. The Hong Kong Polytechnic University Internal Competitive Scheme for Interdisciplinary Large Equipment 2002 (902U), HK$393k

14. Zheng YP, Tsang WPC, Yu WM, Chi ZR, Leung KL, Ying TC, Luo LM. Development and Application of a 3D Ultrasound Imaging System for Musculoskeletal Body Parts. The Hong Kong Polytechnic University Internal Competitive Scheme for Interdisciplinary Collaboration 2002-2004 (G-YD42), HK$360k.

15. Zheng YP, MAK Tak Man (MPhil student), Simultaneous ultrasound imaging and elasticity measurement for liver fibrosis assessment. The Hong Kong Polytechnic University Studentship. 2009-2011. HK$365K.

16. Zheng YP, Huang YP (PhD student), Arthroscopy-based Water Jet Ultrasound Indentation Probe for Mechano-Acoustic Assessment of Articular Cartilage Degeneration. The Hong Kong Polytechnic University Studentship. 2007-2010. HK$530K.

17. Zheng YP, Wang SZ (MPhil student). OCT and ultrasound assessment for articular cartilage. The Hong Kong Polytechnic University Studentship. 2006-2008. HK$365K.

18. Zheng YP, Lu MH (PhD student). Development of noncontact ultrasound palpation system for soft tissues. The Hong Kong Polytechnic University Studentship. 2002-2006. HK$848k.

19. Zheng YP, Huang YP (MPhil student). Ultrasonic assessment of post-radiotherapy fibrosis. Jockey Club Endowment. 2002-2004. HK$412K

- **Internal Grants as a Co-I (Total Amount: ~HK$3,621k)**

20. Guo X. Zheng YP. Effect of micro-gravity on articular cartilage assessed by using high-frequency ultrasound. The Hong Kong Polytechnic University Postdoctoral Fellowship. 2007-2009 (G-YX1C), HK$696k.

21. Zhang L, Zheng YP, Zhang DP. Computerized pulse pattern discrimination and diagnosis using ultrasound measurement. The Hong Kong Polytechnic University Inter-disciplinary Grant 2007-2009 (G-YF25). HK$316k.

22. Liang HH, Zheng YP. Application of Hollow Fibre Ultrafiltration for De-bulking of TCM extracts with ultrasound enhancement. The Hong Kong Polytechnic University Inter-disciplinary Grant 2007-2009 (G-YF16). HK$320k.

23. Lee WPC, Zheng YP, Tam E. Tissue response to shear loadings: Predictive indicators and etiological study of pressure ulcer. The Hong Kong Polytechnic University Internal Allocation for CERG fundable but not funded projects. 2005-2007 (A-PA6C). HK$150k.

24. Wu JY, Zheng YP, Zhao B. Development and Characterization of a Sonobioreactor for Plant Hairy Root Cultures to Produce Valuable Plant Medicinals and Secondary Metabolites. The Hong Kong Polytechnic University Internal Allocation for CERG fundable but not funded projects. 2005-2007 (G-U150). HK$150k.

25. Leung KL, Zheng YP, Zhang M, and Fan YB. Preliminary study on the effect of foot orthoses on lower limb motion and patellofemoral alignment. The Hong Kong Polytechnic University Internal Allocation for CERG fundable but not funded projects. 2004-2006 (G-U058), HK$170k.

26. Leung KL, FU SN, Zheng YP, and Zhang M. The effects of total contact foot orthosis on muscle activation patterns of selected leg muscles. The Hong Kong Polytechnic University Internal Allocation 2004-2006 (A-PF24), HK$178k.

27. Tsang WPC, Yu WMW, and Zheng YP. Engineered design of pressure garment for the management of hypertrophic scar. The Hong Kong Polytechnic University Inter-disciplinary grant 2004-2006 (G-YD42), HK$300k.
28. Lee WPC, Zheng YP, Kong HBJ, and Liu S. A Prospective clinical randomised trial to compare the effect of silicone gel and pressure therapy on post surgical hypertrophic scars. The Hong Kong Polytechnic University Internal Competitive Scheme 2001-2003 (A-PC94), HK193k.
29. Mak AFT, Zhang M, Zheng YP, Leung AKL. Assessment system for CAD/CAM lower- limb prosthetic socket. The Hong Kong Polytechnic University Industrial Guided Applied Research and Development (IGARD) 2000-2001 (G9343), HK1,734k.
30. Mak AFT, Zheng YP, and Leung SF. Assessment of neck tissue fibrosis using an ultrasound palpation system. The Hong Kong Polytechnic University Internal Allocation 1999-2000 (G-T112), HK$50k.

X. Invited Lectures (Total: 55)

1. 2013 Dec *Sonomyography: Quantitative and Dynamic Muscle Assessment using Ultrasound*. **3rd Symposium on Musculoskeletal Ultrasound**, Hong Kong.
2. 2013 Dec *Biomedical Engineering in Hong Kong: From Rehabilitation to Health Technology, Biomedical Engineering, Medical Engineering and Bioengineering*. **2013 International Conference on Biomedical Engineering**, Singapore.
3. 2013 Jun *3D Ultrasound Imaging*. **2013 Ultrasound Society Annual Conference**, Shanghai, China.
4. 2013 Jun *Innovative Wearable Sensors for Healthcare*. **The 3rd Annual International Congress of U-World**, Dalian China, China.
5. 2012 Sep *Liver Fibrosis Assessment using B-mode Guided Transient Ultrasound Elastography*. **2012 Medical Ultrasound and Ultrasonic Medicine Symposium**, Guangzhou, China.
6. 2011 Dec *Ultrasound Elasticity Imaging*. **Symposium on Ultrasound Elasticity Imaging**, Mindray, Shenzhen, Guangdong, China.
7. 2011 Dec *3D Ultrasound Imaging for Musculoskeletal Tissues.* **Musculoskeletal Ultrasound Symposium**, Prince of Wales Hospital, Hong Kong.
8. 2011 Jun *Ultrasound Imaging for Musculoskeletal Tissues: From Innovation to Application*. **The 5th International Congress on Advanced Orthopaedic and Clinical Translational Research**, Shanghai, China.
9. 2011 Mar *Ultrasound Assessment for Articular Cartilage*. **Being 301 Hospital**, Beijing, China.
10. 2010 Dec *Ultrasound Elasticity Imaging and Measurement: Principles, Applications and Interpretation of Parameters*. **2010 Guangdong Medical Ultrasound Engineering and New Technology Symposium**, Guangzhou, China.
11. 2010 Dec *Wearable Sensors for Healthcare and Biomedical Ultrasound*. **Chang Gung University**, Taiwan.
12. 2010 Nov *Wearable Sensors for Healthcare and Biomedical Imaging*. **Hong Kong Science Park**, Hong Kong.

13. 2010 Oct *E-mode Ultrasound: R&D and Applications of Tissue Elasticity Measurement and Imaging*. **2010 Medical Ultrasound and Ultrasonic Medicine Symposium**, Shanghai, China.
14. 2010 Sep *Ultrasound Imaging and Assessment for Musculoskeletal Tissues*. **Prince of Wales Hospital, Chinese University of Hong Kong**, Hong Kong.
15. 2010 Sep *Soft Tissue Elasticity Measurement: Techniques and Applications*. **University of Pittsburgh**, US.
16. 2010 Jul *Application-specific Ultrasound for Tissue Biomechanics (organizing Symposium on Biomechanical Ultrasound)*. **World Congress of Biomechanics**, Singapore.
17. 2010 Jul *Innovative Application-specific Biomedical Ultrasound Devices*. **University of Science and Technology of China**, Hefei, China.
18. 2010 Jul Soft Tissue Elasticity Changes with Age: Measurement Techniques and Applications. **Prince of Wales Hospital, Chinese University of Hong Kong**, Hong Kong.
19. 2009 Nov *Ultrasound Measurement and Imaging of Tissue Elasticity: From Innovation to Application*. **Fudan University**, Shanghai, China.
20. 2009 Nov *Sonomyography: Application for Assessment and Human-machine interface*. **Shanghai Jiaotong University**, Shanghai, China.
21. 2009 Nov *3D Ultrasound Imaging for Musculoskeletal Tissue Assessment*. **Shanghai University**, Shanghai, China.
22. 2009 Jul *Sonomyography: A Signal Extracted from Ultrasound Images of Muscle for Assessment and Human-machine interface*. **WACBE World Congress on Bioengineering 2009**, PolyU, Hong Kong.
23. 2009 Apr *Ultrasound Assessment for Articular Cartilage Degeneration*. **Symposium on Musculoskeletal Imaging**, CUHK, Hong Kong.
24. 2009 Mar *Sonomyography (SMG): Quantitative and Dynamic Assessment for Muscle Functions.* **Symposium on Biomedical Modelling.** Dept of Electronics and Information Engineering, PolyU.
25. 2008 Sep *Tissue Ultrasound Palpation System (TUPS), Sonomyography*. **New York Chiropractic Colleague**, New York, US.
26. 2008 Sep *Real-time monitoring of trypsin digestion and inhibition in articular cartilage using ultrasonic biomicroscopy*. **6th International Conference on Ultrasonic Biomedical Microscanning.** Malibu, CA, US.
27. 2007 Dec *Ultrasound Imaging and Measurement of Tissue Elasticity*. **Shantou Institute of Ultrasound Instruments.** Shantou, Guandong, China.
28. 2007 Dec *Ultrasound Assessment of Musculoskeletal Tissues*. Department of Biomedical Engineering, **Beihang University**, Beijing, China.
29. 2007 Nov *Ultrasound Palpation for Diabetic Foot Plantar Tissues.* **The 4th Asia Pacific Conference on Diabetic Limb Problems**. Hong Kong.
30. 2007 Sep *Ultrasound in medical science applications*. Research Institute of Innovative Products and Technologies. The Hong Kong Polytechnic University, Hong Kong, China.
31. 2007 Jul *Sonomyography: Quantitative and dynamic assessment of muscle function using ultrasound.* **The 2nd Biomedical Engineering Conference**, Hanoi, Vietnam.
32. 2007 Jun *Sonomyography: ultrasound for quantitative and dynamic assessment for muscle contraction*. Sports Medicine and Rehabilitation Therapy (SMART) Convention 2007, **Prince of Wales Hospital**, Hong Kong.
33. 2007 May *Ultrasound characterization of articular cartilage*. **University of Kuopio**, Department of Physics, Finland.
34. 2006 Aug *Ultrasound assessment of musculoskeletal tissues*. **University of Kuopio**, Department of Physics, Finland.
35. 2006 Jan *Tissue ultrasound palpation sensor (TUPS): from research, development to application.* **Rehabilitation Institute of Chicago**, Department of Physical Medicine and Rehabilitation, **Northwestern University**, Chicago, US.
36. 2006 Jan *Tissue ultrasound palpation sensor (TUPS): from research, development to application.* Department of Physical Therapy and Human Movement Sciences, **Northwestern University,** Chicago, US.
37. 2006 Jan *Ultrasound assessment of musculoskeletal tissues: from single to multi dimensions, morphology to functions, and research to applications.* **Jewish Rehabilitation Hospital, University of McGill,** Montreal, Canada.
38. 2006 Jan *Tissue Ultrasound Palpation Sensor.* **Villa Medica Rehabilitation Hospital, University of McGill,** Montreal, Canada.

39. 2005 Nov *Ultrasound Characterization of Articular Cartilage.* **The 1st International Conference on Advanced Nondestructive Evaluation,** Nov 2005, Korea.
40. 2005 Apr *Ultrasound Measurement and Imaging of Tissue Elasticity*. **Department of Mechanical Engineering, The Hong Kong Polytechnic University,** Apr 2005 .
41. 2005 Apr *3D ultrasound imaging and measurement of musculoskeletal tissues*. **Department of Orthopaedics and Traumatology, Chinese University of Hong Kong**, Apr 2005.
42. 2004 Dec *Vital sign monitoring for elderly at home: development of a compound sensor for pulse rate and motion.* **International Workshop on Personalized Health**, Belfast, Northern Ireland, Dec 13-15 2004.
43. 2004 Oct *Ultrasonic assessment of musculoskeletal tissues: 1D to 3D, morphology to function* **Salford University**, Manchester, UK
44. 2004 Oct *Elastomicroscopy for articular cartilage and sonomyography for musculoskeletal assessment*. Parametric Imaging Laboratory, **University of Paris VI**, Paris, France
45. 2004 Sept *Ultrasound Elastomicroscopy: from Contact to Non-contact; Ultrasonic Microscanning for Transient Electromechanical Behaviour of Articular Cartilage*. **4th International Conference on Ultrasonic Biomedical Microscanning**, Harriman New York, US. Sept 7-10, 2004.
46. 2004 May *Ultrasound Elastomicroscopy for High Resolution Imaging of Tissue Elasticity Invited topic for the Symposium on Tissue Elasticity Imaging.* 17th Asian Federation of Societies for Ultrasound in Medicine and Biology (**AFSUMB 2004**), Utsunomiya, Japan. May 17-21 2004.
47. 2004 Apr *Ultrasonic Imaging and Measurement of Tissue Elasticity.* **Chongqing University of Medical Sciences**, Chongqing, China
48. 2004 Mar *Ultrasound Assessment of Musculoskeletal Soft Tissues.* Orthopedics Department, **University of Pittsburg**, US
49. 2004 Mar *Ultrasound Elastomicroscopy.* **6th Annual Ultrasound Transducer Conference**, Marina Del Rey, CA, Mar 17–19 2004.
50. 2004 Jan Tissue Ultrasound Palpation System (Invited Exhibition)
Invited by **Hong Kong Science Museum** for a "Made-in-Hong Kong" exhibition. Jan 28 to Feb 2 2004.
51. 2003 Oct *Ultrasound Assessment of Musculoskeletal Soft Tissues: From 0D to 3D, Static to Dynamic Morphology to Functions*. Department of Biomedical Engineering, **University of California**, Irvine, US
52. 2003 Aug *Ultrasound Assessment of Musculoskeletal Soft Tissues: From 0D to 3D, Morphology to* Functions. School of Human Biosciences, **La Trobe University**, Melbourne, Australia
53. 2003 Feb *Ultrasound Assessment of Musculoskeletal Soft Tissues*
Department of Biomedical Engineering, **University of Southern California**, LA, US
54. 2003 Feb *Ultrasound Characterization of Articular Cartilage*
Department of Orthopaedic Surgery, **University of Iowa**, Iowa, US
55. 2003 Feb *Ultrasound Tissue Palpation Sensor for Quantitative Tissue Assessment*
Department of Biomedical Engineering, **University of Iowa**, Iowa, US
56. 2002 Dec *Ultrasound Assessment of Musculoskeletal Soft Tissues*
Department of Biomedical Engineering, **Xian Jiaotong University**, Xian, China
57. 2002 Oct *Ultrasound Characterization of Articular Cartilage*
Department of Biomedical Engineering, **Columbia University**, New York, US
58. 2002 May *Ultrasound Assessment of Musculoskeletal Soft Tissues*
Department of Electronics and Information Technology, **University of Science and Technology of China**, Hefei, China
59. 2001 Sep *Tissue Ultrasound Palpation System for Soft Tissue Assessment*
Department of Radiology, **The University of Texas in Houston**, Houston, US
60. 2001 July *Ultrasound Measurement of Soft Tissue Elasticity*
Parametric Imaging Laboratory, **University of Paris VI**, Paris, France

XI. Publications and Inventions

- **Patents and Invention Disclosures (Total: 24)**

- Issued patents

1. Zheng YP, CW Cheung. A three-dimensional (3D) ultrasound imaging system for assessing scoliosis. **Patent issued:** US 8,900,146 B2; China 201080040696.0; Japan 5849048. Pending in Canada, Australia, and EU. Filled in Jul 2009.
2. Zheng YP, Chiu W, Zhou YJ, Cheung CWJ, Lee TH, H JF. Method and device for fall detection and prevention. ***Chinese patent***. 200910221324.7. Filed in Nov 2009, issued in Jul 2013.
3. Zheng YP. Flexible ultrasound transducer array (柔性超声换能器阵列及其应用装置). ***Chinese patent***. No.ZL200610159552.2. Filed in Sept 2006, issued in Jul 2012.
4. Zheng YP, Method and apparatus for ultrasound imaging and elasticity measurement. ***US patent.*** 8,147,410 B2, Apr 3 2012. ***Chinese patent***. 200910139336.5. Dec 14 2011. (Filed on Apr 30 2009).
5. Yang JY, Zheng YP, Zhao SW, Li DL, Cai ZH, Guo JF. Ultrasound elasticity imaging method. Chinese patent (一种超声弹性成像方法). 200910204731.7. (Filed on Sep 29 2009).
6. Zheng YP, Chen X, Cheung CW, He JF, Huang YP, Huang ZM. Wireless ultrasound measurement and imaging device. ***Chinese patent issued (PCT patent pending)***. No. 200810094380.8. Mar 2011. (Filed in Apr 2008).
7. Zheng YP, Zhou JY, Huang ZM. Method for elasticity imaging. ***Chinese patent issued***. No. 200810094382.8. Mar 2011 (Filed in Apr 2008).
8. Zheng YP, He JF, Chen X, Cheung CW. Foot scanner. ***Chinese patent***. No. 200810094383.8. Jan 2011. (Filed in Apr 2008).
9. Zheng YP, Cheung CW, He JF, Chen X. Method and device for 3D ultrasound imaging. ***Chinese patent***. No. 200810094381.9. Jan 2011. (Filed in Apr 2008)
10. Ling HY, Zheng YP, Lau KT, Lam P-M. Optic Transducer for Simultaneous Pressure and Temperature Measurement in Fluid Flow. ***US patent issued***. No. 7,729,567. Oct 2010. (Application No. 11/798,343. May 14 2007).
11. Zheng YP, Wang CZ, Zhou YJ, Mak AFT. Wearable vital sign sensor. ***Chinese patent***. No. 200510134052.9. May 5 2010 (Filed in Nov 2005).
12. Guo X, Lam WL, and Zheng YP, Rapid and quantified decalcification of bone: apparatus and methods. ***US patent issued***. No. 10/510,450. Oct 2005 (PolyU IP174A). Issued on Dec 2009
13. Zheng YP and Huang QH. Rapid 3D ultrasound measurement. ***Chinese patent issued***. No. ZL 200510127193.8. Mar 18 2009.
14. Zheng YP, Sum A, Mak AFT, Motion Compensation for portable health monitoring device using motion detection. ***Chinese patent issued,*** ZL 200410056044.2. Jan 23 2008.
15. Zheng YP and Lu MH, Noncontact measurement of material properties. ***US patent issued***. No. 7,124,636. Oct 24 2006.
16. Zheng YP, Method and Apparatus for Detecting Body Gesture, Posture and Movement using Ultrasonic Sensor. ***US Patent issued***, No. 6984208. Jan 2006.
17. Huang J, Zheng YP, et al. Catheter-based color ultrasound elasticity imaging device for heart tissues. ***Chinese utility patent***, No. ZL200091242, Dec 2005.
18. Huang J, Deng MC, Zheng YP, et al. Catheter-based ultrasound elasticity measurement device (介入式超声硬度检测仪). ***Chinese utility patent***, No. 200520033252, Apr 19 2006.
19. Zheng YP, Audio remote control system. ***US Patent issued***, No. 6,788,983, May 2004.
20. Mak AFT and Zheng YP, Portable ultrasound palpation device. ***US Patent issued,*** No. 6494840, Dec 2002.

- Pending patents

21. Zheng YP, Jiang WW. An annotation method and system for ultrasound imaging based on 3D virtual model (基于三维虚拟图像的超声图像自动标注方法及系统). ***Chinese patent pending***. 201210279869.5. Filed on Aug 07 2012.

22. Zheng YP, CW Cheung. A three-dimensional (3D) ultrasound imaging system for assessing scoliosis. ***US and PCT patent pending***. No. 12/509,705. IP582A. Jul 2009.
23. Huang J, Zheng YP, et al. Catheter-based color ultrasound elasticity imaging method and device for heart tissues(介入式超声硬度彩色成像法及介入超声心肌硬度彩色成像仪). ***Chinese patent pending***, No. 200510057007.8, Apr 6 2005.
24. Huang J, Deng MC, Zheng YP, et al. Catheter-based ultrasound elasticity measurement method and device (介入式超声组织硬度获取法及介入超声硬度检测仪). ***Chinese patent pending***, No. 200510020378.9, Feb 5 2005.

- Licensed Techniques and Patents

1. A three-dimensional (3D) ultrasound imaging system for assessing scoliosis. (***US and PCT patent pending***. No. 12/509,705. Jul 2009). Licensed. Jan 2010.
2. Method and device for 3D ultrasound imaging. (***Chinese patent pending***. No. 200810094381.8. Apr 2008). Licensed. Jan 2010.
3. Rapid 3D ultrasound measurement. (***Chinese patent issued***. No. ZL 200510127193.8. Mar 18 2009). Licensed. Jan 2010.
4. Method and apparatus for ultrasound imaging and elasticity measurement (***US and Chinese patent pending***. IP545A. Mar 2009). Licensed. Apr 2009.
5. Method for elasticity imaging (***Chinese and PCT patent pending***. No. 200810094382.8. Apr 2008). Licensed. Apr 2009.
6. Audio remote control system (***US Patent issued***, No. 6,788,983, May 2004). Licensed. Dec 2008.
7. Portable ultrasound palpation device (***US Patent*** No. 6494840, Dec 2002). Licensed. Aug 2008.

- Other inventions

25. Zheng YP, A Method and apparatus for precise locating in using dot matrix printers. ***China Patent application***, No. 94103196.9, 1994.
26. Zheng YP, Hu JK, and Zhang QL, A high precision measurement apparatus for ultrasound velocity and attenuation, ***Appraised by a group of experts as a leading achievement*** in the field of ultrasound measurement, Hefei, China, 1993 (No. 93 Wan Ke 055).

- **Theses**

1. Zheng YP, Development of an ultrasound indentation system for biomechanical properties assessment of limb tissues in vivo. ***PhD thesis, The Hong Kong Polytechnic University***, 1997.
2. Zheng YP, Development of a high precision measurement apparatus for ultrasound velocity and attenuation. ***MEng thesis, University of Science and Technology of China***, 1993.

- **Books**

1. Zheng YP, Huang YP. Measurement of soft tissue elasticity in vivo: Techniques to Application. CRC Press, Oct 2015.

- **Journal papers accepted or in print**

1. Huang YP, Wang LK, Tian L, Huang YF, Zheng YP. Assessment of corneal biomechanical properties with inflation test using optical coherence tomography. Clinical and Experimental Ophthalmology. Submitted. Aug 2016.

- **Journal papers published (Total: 188)**

2017

1. Wei XG, Zhang JY, Chang SC, Wu HC, Zhou YJ, Zheng YP. Automatic extraction of central tendon of rectus femoris (CT-RF) in ultrasound images using a new intensity-compensated free-from deformation-based tracking algorithm with local shape refinement. IEEE Journal of Biomedical and Health Informatics. 21(4): 1058-1068, 2017 (Jul)
2. Wang CZ, Guo JY, Li TJ, Zhou YJ, Shi WX, Zheng YP. Age and sex effects on the active stiffness of vastus intermedius under isometric contraction. Biomedical Research International. Article number: 9469549, 2017 (Mar).
3. Ghoseiri K, Zheng YP, Leung AKL, Rahgozar M, Aminian G, Masoumi M, Safari MR. Temperature measurement and control system for transtibial prostheses: Single subject clinical evaluation. Assistive Technology. Jan 05 2017 online. DOI: 10.1080/10400435.2016.1272070
4. Zhou GQ, Jiang WW, Lai KL, Zheng YP. Automatic measurement of spine curvature on 3-D ultrasound volume project image with phase features. IEEE Transactions on Medical Imaging. 36(6): 1250-1262, 2017.

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5. Begovic H, Zhou GQ, Schuster S. Zheng YP. The neuromotor effects of transverse friction massage. Manual Therapy. 26: 70-76, 2016 (Dec).
6. Shi XM, Cheng CH, Zheng YP, Wai PKA. An EGaln-based flexible piezoresistive shear and normal force sensor with hysteresis analysis in normal force direction. Journal of Micromechanics and microengineering. 26(10), Article number 105020, 2016 (Oct)
7. Zhao JX, Wang YY, Yu JH, Li TJ, Zheng YP. Feasibility of coded vibration in a vibro-ultrasound system for tissue elasticity measurement. Journal of The Acoustical Society of America. 140(1): 35-44, 2016 (Jul)
8. Sun JH, Kwan RLC, Zheng YP, Cheing GLY, Effects of pulsed electromagnetic fields on peripheral blood circulation in people with diabetes: A randomized controlled trial. Bioelectromagnetics. 37 (5): 290-297, 2016. (Jul 2016)
9. Wang LK, Huang YP, Tian L, Kee CS, Zheng YP. Measurement of corneal tangent modulus using ultrasound indentation. Ultrasonics. 71: 20-28 (Sep 2016)
10. Zheng YP, Lee TT, Lai KK, Yip BH, Zhou GQ, Jiang WW, Cheung JC, Wong MS, Ng BK, Cheng JC, Lam TP. A reliability and validity study for Scolioscan: a radiation-free scoliosis assessment system using 3D ultrasound imaging. Scoliosis and Spinal Disorders. 11:13, 2016 (May 2016)
11. Jiang WW, Li C, Li AH, Zheng YP. Clinical evaluation of a 3-D automatic annotation method for breast ultrasound imaging. Ultrasound in Medicine and Biology. 42 (4): 870-881, 2016.(Apr 2016)
12. Chen X, Wen HY, Li QL, Wang TF, Chen SP, Zheng YP, Zhang ZG. Identifying transient patterns of in vivo muscle behaviors during isometric contraction by local polynomial regression. Biomedical Signal Processing and Control. 24 (2) 93-102, 2016. (Feb 2016)
13. Wang LK, Tian L, Zheng YP. Determining in vivo elasticity and viscosity with dynamic Scheimpflug imaging analysis in keratoconic and normal eyes. Journal of Biophotonics. 9(5): 454-463-33, 2016 (May 2016)
14. Zhao J, Wang Y, Yu J, Guo W, L T, Zheng YP. Subarray coherence based postfilter for eigenspace based minimum variance beamformer in ultrasound plane-wave imaging. Ultrasonics. 65: 23-33, 2016. (Feb 2016).

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15. Zhou GQ, Zheng YP. Automatic fascicle length estimation on muscle ultrasound images with an orientation-sensitive segmentation. ***IEEE Transactions on Biomedical Engineering,*** 62(12): 2828-2836, 2015.
16. Ma CZH, Wan AHP, Wong DWC, Zheng YP, Lee WCC. A vibrotactile and plantar force measurement-based biofeedback system: paving the way towards wearable balance-improving devices. Sensors. 15(2): 31709-31722, 2015.
17. Choi MC, Cheung KK, Ng GYF, Zheng YP, Cheing GLY. Measurement of diabetic wounds with optical coherence tomography-based air-jet indentation system and a material testing system. 24 (11): 519-528, 2015.
18. Cheung CW, Zhou GQ, Law SY, Mak TM, Lai KL, Zheng YP. Ultrasound volume projection imaging for assessment of scoliosis. ***IEEE Transactions on Medical Imaging***. 34(8): 1760-1768, 2015 Aug.

19. Qin L, …., YP Zheng, …., Cheng CY (16th out of 28 authors). Phytomolecule icaritin incorporated PLGA/TCP scaffold for steroid-associated osteonecrosis: Proof-of-concept for prevention of hip joint collapse in bipedal emus and mechanistic study in quadrupedal rabbits. ***Biomaterials***. 59(8): 125-143, 2015 Aug. (Qin L, Yao D, Zheng LZ, Liu WC, Liu Z, Lei M, Huang L, Xie XH, Wang XL, Chen Y, Yao XS, Peng J, Gong H, Griffith JF, Huang YP, Zheng YP, Feng JQ, Liu Y, Cheng SH, Xiao DM, Wang DP, Xiaong JY, Pei DQ, Zhang P, Pan XH, Wang XH, Lee KM, Cheng CY)
20. Li JZ, Zhou YJ, Zheng YP, Li GL. An attempt to bridge muscle architecture dynamics and its instantaneous rate for force development using ultrasonography. ***Ultrasonics***. 61: 71-78, 2015. (Aug 2015).
21. Cheung CWJ, Zhou GQ, Law SY, Lai KL, Jiang WW, Zheng YP. Freehand 3D ultrasound system for assessment of scoliosis. ***Journal of Orthopaedics Translation***. 3(3): 123-133, 2015 Jul.
22. Li T, Tian L, Wang L, Ying H, Lam AKC, Huang Y, Wang Y, Zheng Y. Correction on the distortion of Scheimpflug imaging for dynamic central corneal thickness. Journal of Biomedical Optics. 20(5): 056006, 2015.
23. Ji CH, Yu JH, Li TJ, Tian L, Wang YY, Zheng YP. Dynamic curvature topography for measuring the anterior corneal surface change in human eyes. ***Biomedical Engineering Online***. 14:53-69, 2015.
24. Wang LK, Zhang JY, Tian L, Ko MWL, Huang YF, Zheng YP. Research on OCT based air jet indentation for corneal biomechanical assessment. ***Optics and Precision Engineering***. 23(2): 325-333, 2015
25. Kwan RL, Wong WC, Yip SL, Chan KL, Zheng YP, Cheing GL. Pulsed electromagnetic field theraphy promotes healing and microcirculation of chronic diabetic foot ulcers: a pilot study. ***Advanced Skin Wound Care***. 28(5): 212-219, 2015.
26. Ng TKW, Zheng YP, Kwan RLC, Cheing GLY. An innovative ultrasound foot scanner system for measuring the change in biomechanical properties of plantar tissue from sitting to standing. ***International Journal of Rehabilitation Research***. 38(3): 68-72, 2015.
27. Jiang WW, Li C, Li AH, Zheng YP. A novel breast ultrasound system for providing coronal images: System development and feasibility study. ***Ultrasonics***. 56:427-434, 2015.
28. Zhou GQ, Zheng YP. Automatic measurement of pennation angle and fascicle length of gastrocnemius muscles using real-time ultrasound imaging. ***Ultrasonics***. 57:72-83, 2015.

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29. Wong CCL, …, Zheng YP, …., Ng IO (14th out of 16 authors). Lysyl Oxidase-Like 2 is critical to tumor microenvironment and metastatic niche formation in hepatocellular carcinoma. ***Hepatology***. 60(5): 1645-1658, 2015.
30. Tian L, Ko MWL, Wang LK, Zhang JY, Li TJ, Huang YF, Zheng YP. Assessment of ocular biomechanics using dynamic ultra high-speed Scheimpflug imaging in keratoconic and normal eyes. Journal of Refractive Surgery. 30(10), 1-7, 2014
31. Begovic H, Zhou GQ, Li TJ, Wang Y, Zheng YP. Detection of the electromechanical delay and its components during voluntary isometric contraction of the quadriceps femoris muscle. **Frontiers in Physiology**. 5: Article Number: UNSP 494, 2014.
32. Wang CZ, Li TJ, Zheng YP. Shear modulus estimation on vastus intermedius of elderly and young females over the entire range of isometric contraction. ***PLOS ONE***. 9(7): e101769, 2014
33. Li TJ, Wang YY, Chang C, Hu N, Zheng YP. Color-appearance-model based fusion of gray and pseudo-color images for medical applications. ***Information Fusion Journal***. 19: 103-114, Sep 2014.
34. Chu CHG, Zhou YJ, Zheng YP, Kee CS. Bi-directional corneal accommodation in alert chicks with experimentally-induced astigmatism. ***Vision Research***. 98: 26-34, May 2014
35. Li JZ, Zhou YJ, Lu Y, Zhou GQ, Wang L, Zheng YP. The sensitive and efficient detection of quadriceps muscle thickness changes in cross-sectional plane using ultrasonography: a feasibility investigation. ***IEEE Journal of Biomedical and Health Infor***matics. 18(2): 628-635, Mar 2014.
36. Li JZ, Zhou YJ, Ivanov K, Zheng YP. Estimation and visualization of longitudinal muscle motion using ultrasonography: A feasibility study. ***Ultrasonics***. 54(3): 779-788, Mar 2014
37. Mak TM, Huang YP, Wang LK, Zheng YP. Ultrasound biomicroscopy measurement of skin thickness change induced by cosmetic treatment with ultrasound stimulation. ***Ultrasonics***. 54(5): 1395-400, 2014.

38. Wang YX, Huang YP, Liu AJ, Wan WB, Zheng YP. An ultrasound microscopic and water jet ultrasound indentation method for detecting the degenerative changes of articular cartilage in a rabbit model of progressive osteoarthritis. ***Ultrasound in Medicine and Biology***. 40(6): 1296-1306, 2014.
39. Jiang WW, Li AH, Zheng YP. A semi-automated 3D annotation method for breast ultrasound imaging: System development and feasibility study on phantoms. ***Ultrasound in Medicine and Biology***. 40(2): 434-446, 2014.

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