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## BIOGRAPHICAL SKETCH

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NAME in English <b>Chien Chou</b>	POSITION TITLE <b>Professor, Graduate Institute of Electro-Optical Engineering</b>		
NAME in Chinese <b>周 晟</b>			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Rochester	M.S.	12/78	Optics
University of Arizona	Ph.D.	08/75	Biomedical Optics

### A. Positions and Honors

#### Positions and Employment

- 1990-2009      Professor, Department of Biomedical Imaging and Radiological Sciences (BIRS),  
National Yang-Ming University
- 2009-              Professor, Graduate Institute of Electro-Optical Engineering, Chang Gung University

#### Other Experience and Professional Memberships

#### Honors

### B. Selected Peer-reviewed Publications (2005-2010) (in chronological order)

#### SCI Publications

1. Y. H. Chan, C. Chou, J. S. Wu, H. F. Chang, H. F. Yau, "Properties of diffused photon pairs density waves in a multiple-scattering media," *Applied Optics* 44, 1416-1425, (2005).
2. C. C. Tsai, C. Chou, C. Y. Han, C. H. Hsieh, K. Y. Liao, Y. F. Chao, "Determination of optical parameters of a twist-nematic liquid crystal by phase-sensitive optical heterodyne interferometric ellipsometry" *Applied Optics* 44, 7509-7514, (2005).
3. W. C. Kuo, C. M. Lai, H. T. Huang, C. Chou, "Polarization-sensitive optical coherence tomography using only a linear polarized light", *Optical and Quantum Electronics* 37, 1213-1223, (2005).
4. C. Chou, H. M. Tsai, K. Y. Liao, L. D. Chou, P. H. Huang, "Optical activity measurement of quartz crystal using a balanced optical heterodyne interferometer" *Applied Optics* 45, 3733-3739, (2006).
5. H. F. Chang, C. Chou, H. K. Teng, H. T. Wu, H. F. Yau, "The use of polarized modulation and amplitude-sensitive optical heterodyne interferometer for linear birefringence parameters measurements" *Optics Communications* 260, 420-426, (2006).
6. C. Chou, H. K. Teng, C. C. Tsai, L. P. Yu, "Balanced detector interferometric ellipsometry," *Journal of The Optical Society of America A* 23, 2871-2879, (2006).
7. C. Chou, H.T. Wu, Y.C. Huang, Y.L. Chen, W.C. Kuo, "The characteristics of a paired surface plasma waves heterodyne biosensor," *Optics Express* 14, 4307-4315, (2006).
8. W. C. Kuo, N. K. Chou, C. Chou, C. M. Lai, H. J. Huang, S. S. Wang, J. J. Shyu, "Polarization-sensitive optical coherence tomography for imaging human atherosclerosis," *Applied Optics* 46, 2520-2527, (2007)
9. C. Chou, H. Y. Hsu, H. T. Wu, K. Y. Tseng , A. Chiou, C. J. Yu, , Z. Y. Lee, T. S. Chan, "Fiber-optic biosensor for detection of C- reative protein and monitor of protein binding kinetics," *Journal of Biomedical Optics* 12, 024035, (2007).

10. C. C. Tsai, H. C. Wei, C. H. Hsieh, L. P. Yu, C. R. Yu, H. S. Huang, C. Chou, "Characterization of a nematic PALC at large oblique incidence angles," *Optics Express* 15, 10381-10389, (2007).
11. C. H. Hsieh, C. C. Tsai, H. C. Wei, L. P. Yu, J. S. Wu, C. Chou, "Determination of retardation parameters of multiple-order waveplate using a phase sensitive heterodyne ellipsometer," *Applied Optics* 46, 5944-5950, (2007).
12. C. Chou, K. H. Chiang, K. Y. Liao, Y. F. Chang, C. E. Lin, "Polarized photon-pairs heterodyne polarimetry for ultrasensitive optical activity detection of a chiral medium," *Journal of Physical Chemistry B* 111, 9919-9922, (2007).
13. B. Y. Hsieh, Y. F. Chang, M. Y. Ng, W. C. Liu, C. H. Lin, H. T. Wu, C. Chou, "Localized surface plasmon coupled fluorescence fiber-optic biosensor with gold nanoparticles," *Analytical Chemistry* 79, 3487-3493, (2007).
14. C. C. Tsai, H. C. Wei, C. H. Hsieh, J. S. Wu, C. E. Lin, C. Chou, "Linear birefringence parameters determination of a multi-order wave plate via detection of a large oblique incidence angles," *Optics Communications* 281, 3036-3041, (2008).
15. S.-M. F. Nee, C.-J. Yu, J.-S. Wu, H.-S. Huang, C. Chou, "Error analysis of a simple and accurate optical coherent ellipsometer" *Physica Status Solidi A* 205, 931-935, (2008).
16. S.-M. F. Nee, C.-J. Yu, J.-S. Wu, H.-S. Huang, C.-E. Lin, C. Chou, "Degrees of polarization and coherence of paired linear polarized laser beam by scattering glass plate measured using optical coherent ellipsometer," *Optics Express* 16, 4286-4295, (2008).
17. C.-C. Tsai, H.-C. Wei, S.-L. Huang, C.-E. Lin, C.-J. Yu, C. Chou, "High speed interferometric ellipsometer," *Optics Express* 16, 7778-7788, (2008).
18. L.-P. Yu, C. Chou, J.-S. Wu, Y.-H. Chan, "Measurement of diffuse photon-pairs density wave in a multiple-scattering medium," *Applied Optics* 47, 2708-2714, (2008). This paper has been selected to *The Virtual Journal for Biomedical Optics (VJBO)* in vol. 3, issue 6, June 17, (2008).
19. C.-E. Lin, C.-J. Yu, Y.-C. Li, C. Chou, "High sensitivity two-frequency paired polarized interferometer on Faraday rotation angle measurement of ambient air with single traveling configuration," *Journal of Applied Physics* 104, 033101, (2008).
20. C. Chou, H.-K. Teng, C.-C. Tsai, J.-S. Wu, "Differential-phase decoder in polarized optical heterodyne interferometer," *Journal of Optical Society of America A* 25, 2630-2635, (2008). This paper has been selected to *The Virtual Journal for Biomedical Optics (VJBO)* in vol. 4, issue 1, (2008).
21. H.-J. Huang, T.-Y. Hsieh, L.-D. Chou, W.-C. Kuo, C. Chou, "Analog differential-phase detection in optical coherence reflectometer," *Optics Express* 16, 12847-12858, (2008). This paper has been selected to *The Virtual Journal for Biomedical Optics (VJBO)* in vol. 3, issue 10, Oct 1, (2008).
22. Y.-C. Li, Y.-F. Chang, L.-C. Su, C. Chou, "Differential phase surface plasmon resonance biosensor," *Analytical Chemistry* 80, 5590-5595, (2008).
23. Y.-F. Chang, R.-C. Chen, Y.-J. Lee, S.-C. Chao, L.-C. Su, Y.-C. Li, C. Chou, "Localized surface plasmon coupled fluorescence fiber-optic biosensor for alpha-fetoprotein detection in human serum," *Biosensors & Bioelectronics* 24, 1610-1614, (2009).
24. C.-H. Lin, H.-Y. Chen, C.-J. Yu, P.-L. Lu, C.-H. Hsieh, B.-Y. Hsieh, Y.-F. Chang, C. Chou, "Quantitative measurement of binding kinetics in sandwich assay using a fluorescence detection fiber-optic biosensor," *Analytical Biochemistry* 385, 224-228, (2009).
25. C.-J. Yu, C.-E. Lin, L.-C. Su, C. Chou, "Heterodyne linear polarization modulation ellipsometer," *Japanese Journal of Applied Physics* 48, 032403, (2009).
26. C.-J. Yu, C.-E. Lin, H.-K. Teng, C.-C. Tsai, C. Chou, "Dual-frequency paired polarization phase shifting ellipsometer," *Optics Communications* 282, 1516-1520, (2009).
27. H.-C. Wei, C.-C. Tsai, L.-P. Yu, C.-E. Lin, C.-J. Yu, M.-H. Liu, C. Chou, "Two-dimensional cell parameters of twisted nematic liquid crystal with an amplitude-sensitive heterodyne ellipsometer," *Applied Optics* 48, 1628-1634, (2009).
28. C.-J. Yu, C.-E. Lin, L.-P. Yu, C. Chou, "Paired circularly polarized heterodyne ellipsometer," *Applied Optics* 48, 758-764, (2009).
29. H.-T. Chien, C.-K. Lee, H.-K. Chiu, K.-C. Hsu, C.-C. Chen, J.-A. A. Ho, C. Chou, "The Comparison Between the Graded Photonic Crystal Coupler and Various Couplers," *Journal of Lightwave Technology* 27, 2570-2574, (2009).

30. J. C. Huang, Y.-F. Chang, K.-H. Chen, L.-C. Su, C.-W. Lee, C.-C. Chen, Y.-M. A. Chen, C. Chou, "Detection of severe acute respiratory syndrome (SARS) coronavirus nucleocapsid protein in human serum using a localized surface plasmon coupled fluorescence fiber-optic biosensor," *Biosensor & Bioelectronics* 25, 320-325, (2009).
31. C.-E. Lin, J.-G. Chang, L.-D. Chou, C.-J. Yu, C.-C. Lee, C. Chou, "Two-Frequency Paired Polarization Interferometer for Faraday Rotation Angle Detection," *Japanese Journal of Applied Physics* 48, 082501, (2009).
32. C.-J. Yu, C.-E. Lin, Y.-C. Li, L.-D. Chou, J.-S. Wu, C.-C. Lee, and C. Chou, "Dual-frequency heterodyne ellipsometer for characterizing generalized elliptically birefringent media," *Optics Express* 17, 19213-19224, (2009).
33. C.-E. Lin, C.-J. Yu, C.-L. Chen, L.-D. Chou, C. Chou, "Kinetics of glucose mutarotation assessed by an equal-amplitude paired polarized heterodyne polarimeter," *Journal of Physical Chemistry A* 114, 1665-1669, (2010).
34. C.-J. Yu, J.-G. Chang, C.-E. Lin, C.-C. Lee, C. Chou, "Digital circularly polarized heterodyne ellipsometer," *Thin Solid Film* 518, 3391-3395, (2010).
35. M.-H. Liu, W.-C. Kuo, H.-C. Wei, C.-C. Tsai, C.-J. Yu, B.-J. Liang, and C. Chou, "Cell parameter measurement of a twisted nematic liquid crystal device using interferometric ellipsometer under normal incidence," *Optics Express* 18, 8759-8766, (2010).
36. L.-C. Su, R.-C. Chen, Y.-C. Li, Y.-F. Chang, Y.-J. Lee, C.-C. Lee, C. Chou, "Detection of Prostate-Specific Antigen with a Paired Surface Plasma Wave Biosensor," *Analytical Chemistry* 82, 3714-3718, (2010).
37. J.-S. Wu, C. Chou, C.-H. Chang, L.-P. Yu, L.-D. Chou, H.-F. Chang, H.-F. Yau, C.-C. Lee, "Zeeman laser scanning confocal microscope and its ability on reduction of specimen-induced spherical aberration," *Optics Express* 18, 13136-13150, (2010).
38. Y.-F. Chang, S.-F. Wang, J. C. Huang, L.-C. Su, L. Yao, Y.-C. Li, S.-C. Wu, Y.-M. A. Chen, J.-P. Hsieh, C. Chou, "Detection of swine-origin influenza A (H1N1) viruses using a localized surface plasmon coupled fluorescence fiber-optic biosensor," *Biosensor & Bioelectronics* (in press) (2010).
39. H. F. Chang, C. Chou, H. F. Yau, Y. H. Chan, J. N. Yi, J. S. Wu, "Angular distribution of polarized photon-pairs in a scattering medium with a Zeeman laser scanning confocal microscope" *Journal of Microscopy* 223, 26-32, (2006)
40. Y.-F. Chang, T.-C. Chang, Y.-M. Huang, K.-W. Yu, B.-Y. Hsieh, Y.-C. Chung, C. Chou, "Fiber Optic Biosensor for the Identification of E. coli in Pure Cultures Isolated from Blood," *Journal of Bionanoscience* 1, 117-121, (2007).
41. H.-C. Wei, C.-H. Hsieh, C.-C. Tsai, L.-P. Yu, C. Chou, "Determination of linear birefringence of a multiple-order wave plate using a phase-sensitive ellipsometer," *Phys. Stat. Sol. C* 5, 1411-1413, (2008).

## C. Research Support

### Ongoing Research Support

98-2221-E-182-063-MY3

08/01/09-07/31/12

Measurement of surface and volume effects of inhomogeneity in a multiple scattering medium by diffuse photon-pairs density wave (DPPDW).

Role: PI

98-2221-E-182-064-MY3

08/01/09-07/31/12

Development of optical coherent ellipsometer and measurements on degrees of polarization and coherence of scattering specimen.

Role: PI

**Completed Research Support (2006-2010)**

96-2221-E-010-002-MY2

09/01/06-08/31/09

The development of novel polarized optical heterodyne ellipsometer and the technique applied on two-dimensional optical parameters distribution measurement.

Role: PI

96-2627-B-008-001-MY3

08/01/07-07/31/10

Ultra-high sensitive surface plasmon-coupled fluorescence liposome multiple spots sensor chip.

Role: PI