

Li-Chyong Chen_Full Publication List (till March 20, 2024)

A. Invited book chapters & review articles:

- (1) 'Particulate Generated by Pulsed Laser Ablation', L. C. Chen*, Chapter 6, pp. 167-198, in D. B. Chrisey and G. K. Hubler, Eds., *Pulsed Laser Deposition of Thin Films*, Wiley, New York, 1994.
(no weblink)
- (2) 'Progress and Status of SiCN: a New Wide Band Gap Material', L. C. Chen*, K. H. Chen, J.-J. Wu, D. M. Bhusari and M. C. Lin, Chapter 2, pp. 73-125, in H. S. Nalwa, Ed., *Si-Based Materials and Devices*, Academic Press, 2001.
(no weblink)
- (3) 'Group III-and Group IV-Nitride Nanorods and Nanowires', L. C. Chen*, K. H. Chen and C. C. Chen, Chapter 9, pp. 257-309, in Z. L. Wang, Ed., *Nanowires and Nanobelts – Materials, Properties and Devices, Vol. 1: Metal and Semiconductor Nanowires*, Kluwer Academic Publisher, 2003.
https://link.springer.com/chapter/10.1007/978-0-387-28745-4_9
- (4) 'Nanotips: Growth, Model and Applications', S. Chattopadhyay, L. C. Chen* and K. H. Chen, an invited review article in Wolfgang Sigmund, Ed., *Critical Reviews in Solid State and Materials Sciences* 31, pp. 15-53, Taylor and Francis, 2006.
<https://www.tandfonline.com/doi/abs/10.1080/10408430600689299>
- (5) 'Recent Trends in Indium Nitride Nanomaterials', Abhijit Ganguly, Li-Chyong Chen*, Kuei-Hsien Chen, Surojit Chattopadhyay*, Chapter 14, pp. 431-462, in Zhe-Chuan Feng, Ed., *III-Nitride Devices and Nano-engineering*, Imperial College Press, UK, 2008.
https://www.worldscientific.com/doi/abs/10.1142/9781848162242_0015
- (6) 'Carbon Nanotube Supported Catalysts for Direct Methanol Fuel Cells', C. H. Wang, L. C. Chen, K. H. Chen*, Chapter 8, pp. 315-354, in Jiujun Zhang and Hansan Liu, Eds., *Electrocatalysis of Direct Methanol Fuel Cells*, John Wiley and Sons, New York, 2009.
<https://onlinelibrary.wiley.com/doi/abs/10.1002/9783527627707.ch8>
- (7) 'Growth, Properties and Sensing Applications of One-dimensional III-Nitride Nanostructures', S. Chattopadhyay*, A. Ganguly, K. H. Chen and L. C. Chen*, an invited review article in Wolfgang Sigmund, Ed., *Critical Reviews in Solid State and Materials Sciences* 34, pp. 224-279, Taylor and Francis, 2009.
<https://www.tandfonline.com/doi/abs/10.1080/10408430903352082>
- (8) 'Anti-reflecting and Photonic Nanostructures', S. Chattopadhyay*, Y. F. Huang, Y. J. Jen, A. Ganguly, K. H. Chen and L. C. Chen*, an invited review article in A. G. Cullis and S. S. Lau, Eds., *Materials Science and Engineering Review* 69, pp. 1-35, Elsevier, 2010.
<https://www.sciencedirect.com/science/article/pii/S0927796X10000513>
- (9) 'Energy Production and Conversion Applications of One-dimensional Semiconductor Nanostructures', Surojit Chattopadhyay*, Li-Chyong Chen and Kuei-Hsien Chen*, an invited review article in *NPG Asia Materials* 3, pp. 74-81, 2011.
<https://www.nature.com/articles/am2011135>
- (10) 'Recent Advances in GaN Nanowires: Surface-controlled Conduction and Sensing Applications', Ruei-San Chen, Abhijit Ganguly, Li-Chyong Chen* and Kuei-Hsien Chen*, Chapter 10, pp. 295-315, in S. J. Pearton, Ed., *GaN and ZnO-based Materials and Devices*, Springer, 2012.
https://link.springer.com/chapter/10.1007/978-3-642-23521-4_10
- (11) 'Biomimetic Nanostructures for Anti-reflection Devices', S. Chattopadhyay*, Y.-F. Huang, K. H. Chen, L. C. Chen*, Chapter 4, pp. 108-146, in Maryanne Large, Ed., *Optical Biomimetics: Materials and Applications*, Woodhead Publishing, 2012.
(no weblink)
- (12) 'Effect of Chemical Doping of Boron and Nitrogen on the Electronic, Optical, and Electrochemical Properties of Carbon Nanotubes', Debnarayan Jana*, Chia-Liang Sun, Li-Chyong Chen* and Kuei-Hsien Chen, an invited review article in *Progress in Materials Science* 58, pp. 565-635, Elsevier, 2013.
<https://www.sciencedirect.com/science/article/pii/S0079642513000042>
- (13) 'Production and Storage of Energy with One-Dimensional Semiconductor Nanostructures', Abhijit Ganguly, Surojit Chattopadhyay*, Kuei-Hsien Chen and Li-Chyong Chen, an invited review article in Wolfgang Sigmund, Ed., *Critical Reviews in Solid State and Materials Sciences* 39, pp. 109-153, Taylor and Francis, 2014.
<https://www.tandfonline.com/doi/abs/10.1080/10408436.2013.796909>
- (14) 'Anti-reflecting Nanostructures', A. Ganguly*, S. Chattopadhyay, P. K. Roy, L. C. Chen*, K. H. Chen*, Chapter 2, pp. 35-90, in S. Chattopadhyay, Ed., *Biomimetic Architectures by Plasma Processing: Fabrication and Applications*, Pan-Stanford, 2015.
(no weblink)
- (15) 'Conducting Polymer Based Flexible Supercapacitor', I. Shown, A. Ganguly, L. C. Chen* and K. H. Chen*, an invited review article in Tomas Kaberger, Ed., *Energy Science & Engineering* 3, pp. 2-26, Wiley, 2015.
<https://onlinelibrary.wiley.com/doi/full/10.1002/ese3.50>
- (16) 'Integrated Nano-architected Photocatalysts for Photochemical CO₂ Reduction', Subhash Chandra Shit, Indrajit Shown*, Ratul Paul, Kuei-Hsien Chen, John Mondal* and Li-Chyong Chen*, an invited review article in *Nanoscale* 12, pp. 23301-23332 (2020).
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B. Refereed papers:

- (1) 'The Number of Third Order Elastic Constants of an Icosahedral Solids', L. C. Chen, S. Ebalard, L. M. Goldman, W. Ohashi, B. Park and F. Spaepen*, *J. Appl. Phys.* 60, 2638 (1986).
<https://aip.scitation.org/doi/pdf/10.1063/1.337086>
- (2) 'The Configurational Entropy of Two-dimensional Random Penrose Tiling', L. C. Chen and F. Spaepen*, *Mater. Sci. and Engng.* 99, 339 (1988).
<https://www.sciencedirect.com/science/article/abs/pii/0025541688903539>

- (3) 'Calorimetry Evidence for the Micro-Quasicrystalline Structure of Amorphous Al-Transition Metal Alloys', L. C. Chen and F. Spaepen*, *Nature* 336, 366 (1988).
<https://www.nature.com/articles/336366a0>
- (4) 'A Structural and Calorimetric Study of the Transformations in Al-Mn and Al-Mn-Si Films', L. C. Chen, F. Spaepen*, J. L. Robertson, S. C. Moss and K. Hiraga, *J. Mater. Res.* 9, 1871 (1990).
<https://www.cambridge.org/core/journals/journal-of-materials-research/article/structural-and-calorimetric-study-of-the-transformations-in-sputtered-almn-and-almnsi-films/59B797715DF4260379120B8E91BD2ABB>
- (5) 'Analysis of Calorimetric Measurements of Grain Growth', L. C. Chen and F. Spaepen*, *J. Appl. Phys.* 69, 679 (1991).
<https://aip.scitation.org/doi/abs/10.1063/1.347349>
- (6) 'How to Use Calorimetry to Distinguish a Microcrystalline from an Amorphous Structure', L. C. Chen and F. Spaepen*, *Mater. Sci. and Engng. A* 133, 342 (1991).
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- (7) 'A Comment on the Use of Calorimetry for the Determination of the Structure of Amorphous Materials', L. C. Chen and F. Spaepen*, *Phil. Mag. B* 63(2), 585 (1991).
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- (8) 'Grain Growth in Microcrystalline Materials Studied by Calorimetry', L. C. Chen and F. Spaepen*, *Nanostructured Materials* 1(1), 59 (1992).
<https://www.sciencedirect.com/science/article/pii/096597739290053Z>
- (9) 'Dilatometric Analysis of Sintering of Tungsten and Tungsten with Ceria and Hafnia Dispersions', L. C. Chen*, *Inter. J. of Refractory Metal and Hard Mater.* 12, 41 (1994).
<https://www.sciencedirect.com/science/article/abs/pii/026343689390074P>
- (10) 'Micro-Raman for Diamond Film Stress Analysis', K. H. Chen*, Y. L. Lai, J. C. Lin, K. J. Song, L. C. Chen and C. Y. Huang, *Diamond and Relat. Mater.* 4, 460 (1995).
<https://www.sciencedirect.com/science/article/pii/0925963594053197>
- (11) 'High-temperature Raman Study in CVD Diamond', K. H. Chen*, Y. L. Lai, L. C. Chen, J. Y. Wu and F. J. Kao, *Thin Solid Films* 270, 143 (1995).
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- (12) 'Formation of Crystalline Silicon Carbon Nitride Films by Microwave Plasma-Enhanced Chemical Vapor Deposition', L. C. Chen*, C. Y. Yang, D. M. Bhusari, K. H. Chen, M. C. Lin, J. C. Lin and T. J. Chuang, *Diamond and Relat. Mater.* 5, 514 (1996).
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- (13) 'Composition of SiCN crystals consisting of a predominantly carbon-nitride network', D. M. Bhusari, C. K. Chen, K. H. Chen*, T. J. Chuang, L. C. Chen and M. C. Lin, *J. Mater. Res.* 12, 322 (1997).
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- (14) 'Si-Containing Crystalline Carbon Nitride Derived from Microwave Plasma-Enhanced Chemical Vapor Deposition', L. C. Chen*, D. M. Bhusari, C. Y. Yang, K. H. Chen, T. J. Chuang, M. C. Lin, C. K. Chen and Y. F. Huang, *Thin Solid Films* 303, 66 (1997).
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- (16) 'Travelling Wave Method for Measurement of Thermal Conductivity of Thin Films', D. M. Bhusari, C. W. Teng, K. H. Chen*, S. L. Wei and L. C. Chen, *Rev. Sci. Instrum.* 68(11), 4180 (1997).
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- (18) 'Crystalline Silicon Carbon Nitride: a Wide Band-gap Semiconductor', L. C. Chen*, C. K. Chen, S. L. Wei, D. M. Bhusari, K. H. Chen, Y. F. Chen, Y. C. Jong and Y. S. Huang, *Appl. Phys. Lett.* 72(19), 2463 (1998).
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- (21) 'Novel Two Stage Method for Growth of Highly Transparent Nano-crystalline Diamond Films', D. M. Bhusari, J. R. Yang, T. Y. Wang, K. H. Chen*, S. T. Lin and L. C. Chen, *Mater. Lett.* 36, 279 (1998).
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- (23) 'The Use of a Bio-molecular Target for Crystalline CN Film Deposition by Ar Ion-Beam Sputtering without Other Source of Nitrogen', L.C. Chen*, T.R. Lu, D.M. Bhusari, J.J. Wu, K.H. Chen, C.T. Kuo, T.M. Chen, *Appl. Phys. Lett.* 72(26), 3449 (1998).
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- (24) 'Sputtering Process of Carbon Nitride Films by Using a Novel Bio-Molecular C-N Containing Target', T. R. Lu, L. C. Chen, K. H. Chen, D. M. Bhusari, T. M. Chen and C. T. Kuo*, *Thin Solid Films* 332, 74 (1998).
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- (28) 'Nano-CN Synthesis from a Bio-Molecular Target for Ion-Beam Sputtering at Low Temperature', J.J. Wu, T.R. Lu, C.T. Wu, T.Y. Wang, L.C. Chen, K.H. Chen*, C.T. Kuo, T.M. Chen, Y.C. Yu, C.W. Wang, E.K. Lin, *Diamond and Relat. Mater.* 8, 605 (1999).
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- (29) 'Quantum Confinement Effect in Diamond Nanocrystals Studied by X-ray-absorption Spectroscopy', Y. K. Chang, H. H. Hsieh, W. F. Pong*, M. H. Tsai, F. Z. Chien, P. K. Tseng, L. C. Chen, T. Y. Wang, K. H. Chen, D. M. Bhusari, J. R. Yang and S. T. Lin, *Phys. Rev. Lett.* 82, 5377 (1999).
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- (30) 'High Purity Nano-crystalline Carbon Nitride Films Prepared at Ambient Temperature by Ion Beam Deposition', T. R. Lu, C. T. Kuo*, J. R. Yang, L. C. Chen, K. H. Chen and T. M. Chen, *Surface and Coating Tech.* 115, 116 (1999).
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- (33) 'Wide Band Gap Silicon Carbon Nitride Films Deposited by Electron Cyclotron Resonance Plasma Chemical Vapor Deposition', K. H. Chen*, J.-J. Wu, C. Y. Wen, L. C. Chen, C. W. Fan, P. F. Kuo, Y. F. Chen and Y. S. Huang, *Thin Solid Films* 355-356, 205 (1999).
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- (35) 'X-ray absorption of Si-C-N Thin Films: a Comparison between Crystalline and Amorphous Phases', Y. K. Chang, H. H. Hsieh, W. F. Pong*, M. H. Tsai, T. E. Dann, F. Z. Chien, P. K. Tseng, L. C. Chen, S. L. Wei, K. H. Chen, J.-J. Wu, Y. F. Chen, *J. Appl. Phys.* 86, 5609 (1999).
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