

List of Publications

Xiuqin Chen

~Updated in August 2008 ~

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List of Publications

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A) Original papers

Papers on silicates materials

- 1) Mechanism of the hardening process of silicate inorganic binding materials, Xiuqin Chen, Lisi An, and Xuemin Gu, *Technology on Adhesion and Sealing*, **11**(4), 5-8(1990). (Written in Chinese).
- 2) Modification of bentonite and composites with epoxy resin, Xiuqin Chen, Jitai Huang, *Chemical World*, **31**(3) 103-106(1990). (Written in Chinese)
- 3) Surface Treatment of some clays and study on XRD of the product, Jitai Huang, Xiuqin Chen, *J. Huaqiao Univ.*, **13**, 488-492(1992). (Written in Chinese)
- 4) Study on the acid treatment of clays and the adsorption behaviors of the products, Xiuqin Chen, Jitai Huang, *Multipurpose Utilization of Mineral Resources*, **1993**(3), 28-31(1993). (Written in Chinese)
- 5) Kaolin calcinations technology and the applications of the products, Xiuqin Chen, Shaoming Yang, *Multipurpose Utilization of Mineral Resources*, **1994**(2), 38-41 (1994). (Written in Chinese)
- 6) An approach to the determination of the quantity of the Bronsted acid sites on clays treated by acid, Xiuqin Chen, *Non-metallic Minerals*, **1994**(4), 25-29(1994). (Written in Chinese)
- 7) Approaches to increasing water resistance of silicate coatings, Xiuqin Chen, Shaoming Yang, *Coating Industry*, **1995**(5), 28-32(1995). (Written in Chinese)
- 8) Visible spectrum of methylene blue-acid treated clay suspensions, Xiuqin Chen, *J. Huaqiao Univ*, **16**, 439-442 (1995). (Written in Chinese)
- 9) Study on the hardening process of water glass by curing agent containing Ca, F and P, Xiuqin Chen, *J. Huaqiao Univ* **17**(1), 80(1996). (Written in Chinese)
- 10) Preparation and properties of PMMA/clay nanocomposite. Chen, Guohua; Chen, Xiuqin; Lin, Zhiyong; Ye, Wei; Yao, Kangde. *J. Mater. Sci. Lett.*, **18**, 1761-1763(1999).

Papers on CMC Growth Mechanism

- 11) Three-dimensional growth mechanism of cosmo-mimetic carbon microcoils obtained by chemical vapor deposition, S. Motojima and X. Chen, *J. Appl. Phys.*, **85**, 3919-3921(1999).
- 12) Three-dimensional vapor growth mechanism of carbon microcoils, X. Chen, T. Saito, M. Kusunoki and S. Motojima, *J. Mater. Res.*, **14**, 4329-4336(1999).
- 13) Morphology and growth models of circular and flat carbon coils obtained by the catalytic

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pyrolysis of acetylene, X. Chen, S. Yang and S. Motojima, *Mater. Lett.*, **57**, 48-54(2002).

- 14) Coiling-chirality changes in carbon microcoils obtained by catalyzed pyrolysis of acetylene and its mechanism, S. Yang, X. Chen and S. Motojima, *Appl. Phys. Lett.*, **81**, 367-3569 (2002).
- 15) Conformation and growth mechanism of the carbon nanocoils with twisting form in comparison with that of carbon microcoils, X. Chen, S. Yang, K. Takeuchi, T. Hashishin, H. Iwanaga and S. Motojima, *Diamond Relat. Mater.*, **12**, 1836-1840(2003).
- 16) Tip morphology and growth mechanism of carbon micro-coils, S. Yang, X. Chen and S. Motojima, *Mater. Technol.*, **21**(2), 73-79(2003).

Papers on CMC's growth patterns and morphology

- 17) The growth patterns and morphologies of carbon micro-coils produced by chemical vapor deposition, X. Chen and S. Motojima, *Carbon*, **37**, 1817-1823(1999).
- 18) Morphologies of carbon micro-coils grown by chemical vapor deposition, X. Chen and S. Motojima, *J. Mater. Sci.*, **34**, 5519-5524(1999).
- 19) High-temperature heat treatment of carbon microcoils obtained by chemical vapor deposition process and their properties, X. Chen, W. In-Hwang, S. Shimada, M. Fujii, H. Iwanaga and S. Motojima, *J. Mater. Res.*, **15**, 808-814(2000).
- 20) Micro-morphology of Carbon microcoils grown by CVD, Xiuqin Chen and Seiji Motojima, *Xin Xing Tan Cai Liao*, **15**(3), 23~27(2000) (written in Chinese).
- 21) Micro-structure and surface properties of carbon microcoils, Xiuqin Chen and Seiji Motojima *Cai Liao Dao Bao*, **14**(9), 56~59(2000) (written in Chinese).
- 22) Growth Pattern and performance of carbon micro/nano-coils with chirality, Shaomig Yang, Xiuqin Chen and Seiji Motojima, *Gong Neng Cai Liao*, **2001**, 673 - 674(written Chinese).
- 23) Study of microcoiled carbon fibers formed by pyrolysis with scanning electron microscope, S. Yang, X. Chen and S. Motojima, *J. Chinese Electron Microscopy Society*, **21**(1), 66-68(2002). (written in Chinese).

Papers on CMC preparation

- 24) Effect of external electromagnetic field and bias voltage on the vapor growth, morphology and properties of carbon micro coils, W. In-Hwang, X. Chen, T. Kuzuya, K. Kawabe and S.

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- Motojima, *Carbon*, **38**, 565-571(2000).
- 25) Vapor phase preparation of cosmo-mimetic carbon micro-coils and their properties, X. Chen, S. Motojima, W. In-Hwang, M. Kohda, Y. Hishikawa and H. Iwanaga, *Trans. Mater. Res. Soc. Jpn.*, **25**, 565-568(2000).
- 26) Vapor phase preparation of double helical carbon micro-coils using a multiple-gas-inlet-reactor, X. Chen, W.-In Hwang and S. Motojima, *Mater. Technol.*, 18(6), 229-237(2000).
- 27) Vapor growth, morphology and some properties of carbon micro-coils by metal and metal oxide-catalyzed pyrolysis of acetylene, W. In- Hwang, X. Chen, M. Kohda and S. Motojima, *Mater. Technol.*, **18**(7), 263-270(2000).
- 28) Effect of external electromagnetic field and bias voltage on the chemical vapor growth of the carbon micro-coils and their properties, W. In-Hwang, X. Chen, K. Kawabe and S. Motojima, *Mater. Sci. Eng.*, **B86**, 1-6(2001).
- 29) Vapor phase preparation of super-elastic carbon micro-coils, X. Chen, S. Motojima and H. Iwanaga, *J. Cryst. Growth*, **237-239**, 1931-1936(2002).
- 30) Carbon nanocoils prepared by the catalytic pyrolysis of acetylene, S. Yang, X. Chen and S. Motojiima, *Trans. Mater. Res. Soc. Jpn.*, **28**(4), 1219-1222(2003).
- 31) Preparation and morphologies of elastic carbon microcoils/nanocoils by various catalysts, S. Yang, X. Chen and S. Motojiima, *Trans. Mater. Res. Soc. Jpn.*, **29**, 485-488(2004).
- 32) Preparation and properties of super-elastic carbon microcoils by Ni-catalyzed CVD, S. Yang, H. Aoki, X. Chen and S. Motojima, *Trans. Mater. Res. Soc. Jpn.*, **29**, 457-460(2004).
- 33) Preparation of carbon microcoils (CMCs) using a wire CVD process S. Motojima, X. Chen, S. Hirako, H. Maekawa, S. Yang and C. Kuzuya, *Mater. Technol.*, **24**(3), 161-168 (2006).
- 34) Catalytic effects of various metal carbides and Ti compounds for the growth of carbon nanocoils (CNCs), S. Yang, X. Chen, N. Kikuchi and S. Motojima, *Materials Letters*, 62(10-11), 1462-1465(2008).(PDF)
- 35) Influence of CVD conditions on the growth of carbon microcoils with circular cross-sections X. Chen, S. Yang, Y. Kato and S. Motojiima, *Mater. Lett.* 2900-2903(2007).

C₂H₂ 以外の炭素源で CMC 合成

- 36) Growth of carbon micro-coils by pre-pyrolysis of propane, X. Chen and S. Motojima, *J. Mater. Sci.*, **34**, 3581-3585(1999).

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37) Preparation of carbon microcoils by catalytic methane hot-wire CVD process, X. Chen, M. Hasegawa, S. Yang, Y. Nitta, T. Katsuno and S. Motojima, *Thin Solid Films*, 516(5), 714-717(2008). (PDF)

Papers on ceramic microcoils

- 38) Preparation and properties of TiC micro-coils and micro-tubes by the vapour phase titanizing of carbon micro-coils, S. Motojima, S. Yang, X. Chen and H. Iwanaga, *J. Mater. Sci.*, **34**, 5989-5994(1999).
- 39) Preparation and properties of SiC micro-coils by the vapor phase siliconizing of carbon micro-coils, S. Motojima, S. Yang and X. Chen, *Mater. Res. Bull.*, **35**, 203-209(2000).
- 40) Preparation of TiN microcoils and microtubes by titanizing/nitriding of carbon and TiC microcoils, S. Motojima, W. In-Hwang, X. Chen and H. Iwanaga, *J. Electrochem. Soc.*, **147**, 1228-1234(2000).
- 41) TiO₂/C composite microcoils and TiO₂ hollow microcoils with high photocatalytic activities and electromagnetic (EM) wave absorption abilities, S. Motojima, T. Suzuki, Y. Hishikawa and X. Chen, *Jpn. J. Appl. Phys.*, **42**, L938-L940(2003).
- 42) Preparation of TiO₂ microcoils from carbon microcoil templates using a sol-gel process, S. Motojima, T. Suzuki, Y. Noda, A. Hiraga, H. Iwanaga, T. Hashishin, Y. Hishikawa, S. Yang and X. Chen, *Chem. Phys. Lett.*, **378**, 111-116(2003).
- 43) Preparation and properties of microcoils and microtubes of NbC/C/NbC ~ NbC by vapor phase metallizing of the regular carbon microcoils, S. Motojima, W. In-Hwang and X. Chen, *Mater. Res. Bull.*, **35**, 1517-1524(2000).
- 44) Preparation and properties of carbon nanocoils by the catalytic pyrolysis of acetylene, S. Motojima, X. Chen, S. Yang, S. Shimada, T. Hashishin and H. Iwanaga, *Trans. Mater. Res. Soc. Jpn.*, **28**, 1239-1242(2003).
- 45) Preparation of helical TiO₂/CMC microtubes and pure helical TiO₂ microtubes, S. Motojima, T. Suzuki, Y. Noda, A. Hiraga, S. Yang, X. Chen, H. Iwanaga, T. Hashishin and Y. Hishikawa, *J. Mater. Sci.* **39**, 2663-2674(2004).
- 46) Preparation of ceramics/carbon microcoils composites using carbon microcoils as a template, S. Motojima, T. Muraki, T. Suzuki, S. Yang, X. Chen, T. Hashishin, H. Iwanaga and Y. Hishikawa, *Trans. Mater. Res. Soc. Jpn.*, **29**, 465-468(2004).

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Papers on preparation of carbon nanocoils

- 47) Syntheses and morphologies of the carbon microsolenoid composites and double negative microcoils, S. Yang, X. Chen and S. Motojima, *Chem. Vap. Deposition*, **10**(2), 97-102(2004).
- 48) Carbon nanocoils with changed coiling-chirality formed over Ni/molecular sieves catalyst, X. Chen, S. Yang and S. Motojima, *J. Mater. Sci.*, **39**, 3227-3233(2004).
- 49) Morphology of zigzag carbon nanofibers prepared by catalytic pyrolysis of acetylene using Fe-group containing alloy catalysts, S. Yang, X. Chen and S. Motojima, *Diamond Relat. Mater.*, **13**, 85-92(2004).
- 50) Vapor-phase formation of single-helix carbon microcoils by using WS₂ catalyst and the morphologies, S. Yang, X. Chen and S. Motojima, *J. Mater. Sci.*, **39**, 2727-2736(2004).
- 51) The phenomenon of changing coiling-chirality in carbon nanocoils obtained by catalytic pyrolysis of acetylene with various catalysts, S. Yang, X. Chen, S. Motojima and H. Iwanaga, *J. Nanosci. Nanotechn.*, **4**(1/2), 167-175(2004).
- 52) Cosmo-mimetic helical/spiral materials and their potential applications, S. Motojima, X. Chen, S. Yang, H. Iwanaga, Y. Hayashi, T. Kuzuya and Y. Hishikawa, *Trans. Mater. Res. Soc. Jpn.*, **29**, 477-480(2004).
- 53) Morphologies, microstructure and growth mechanism of carbon nanocoils over stainless steel catalysts, S. Yang, X. Chen, T. Hashishin, H. Iwanaga and S. Motojima, *Trans. Mater. Res. Soc. Jpn.*, **29**, 481-484(2004).
- 54) Preparation of carbon microcoils/nanocoils and their morphologies, S. Motojima, S. Yang, X. Chen, T. Muraki, K. Takeuchi and H. Iwanaga, *Trans. Mater. Res. Soc. Jpn.*, **29**, 489-492(2004).
- 55) Vapor phase preparation of carbon nanocoils by noble metal catalysts, S. Motojima, S. Hirako, T. Kuzuya and X. Chen, *Trans. Mater. Res. Soc. Jpn.*, **29**, 519-522(2004).
- 56) Morphology of the growth tips of carbon microcoils/nanocoils, S. Yang, X. Chen and S. Motojima, *Diamond Relat. Mater.*, **13**, 2152-2155(2004).
- 57) Morphology and microstructure of spring-like carbon micro-coils/nano-coils prepared by catalytic pyrolysis of acetylene using Fe-containing alloy catalysts, S. Yang, X. Chen, S.

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- Motojima and M. Ichihara, *Carbon*, **43**, 827-834(2005).
- 58) Microstructure and microscopic deposition mechanism of twist-shaped carbon nanocoils based on the observation of helical nanoparticles on the growth tips, S. Yang, X. Chen, M. Kusunoki, K. Yamamoto, H. Iwanaga and S. Motojima, *Carbon*, **43**, 916-922(2005).
- 59) Vapor phase growth of microcoils/nanocoils, S. Yang, X. Chen and S. Motojima, *J. Metastable and Nanocrystalline Mater.*, **23**, 387-390(2005).
- 60) Morphology and microstructure of twisting nano-ribbons prepared using sputter-coated Fe-base alloy catalysts on glass substrates, X. Chen, S. Yang, S. Motojima and M. Ichihara, *Mater. Lett.*, **59**, 854-858(2005).
- 61) Vapor growth of novel carbon submicro-fibers with a tile-like form and carbon nanofibers with a zigzag form, Shaoming Yang ,Huang Zao and Xiuqin Chen, *Vacuum*, **81** (3),385-388 (2006).
- 62) Controllable synthesis of carbon microcoils /nanocoils by catalysts supported on ceramics using catalyzed chemical vapor deposition process, S. Yang, X. Chen, T. Katsuno and S. Motojima, *Mater. Res. Bull.* 42(2007) 465-474, Feb, 2007 published.
- 63) Preparation of single-helix carbon microcoils by catalytic CVD process, S. Yang, I. Ozeki, X. Chen, T. Katsuno and S. Motojima, *Thin Solid Films*, 516(5), 718-721(2008).

Papers on CMC properties and applications

- 64) Carbon coatings on carbon micro-coils by pyrolysis of methane and their properties, X. Chen, S. Motojima and H. Iwanaga, *Carbon*, **37**, 1825-1831(1999). (with EM wave absorption)
- 65) Properties and potential applications of carbon microcoils/nanocoils, S. Motojima, X. Chen, S. Yang and M. Hasegawa, *Diamond Relat. Mater.*, **13**, 1989-1992(2004).
- 66) Tactile microsensor elements prepared from arrayed superelastic carbon microcoils, X. Chen, S. Yang, M.Hasegawa, K. Kawabe and S. Motojima, *Appl. Phys. Lett.*, **87**, 054101-1~3(2005).
(注目論文として、表紙に採用された)
- 67) Observation and analysis of percolation behavior in carbon microcoils/polysilicone-rubber composite sheets, T. Katsuno, X. Chen, S. Yang, S. Motojima, M. Homma, T. Maeno and M. Konyo, *Appl. Phys. Lett.*, **88**, 232115-1~3(2006).
- 68) Biomimetic tactile sensors with knot-type or fingerprint-type surface made of carbon microcoils/polysilicone, Xiuqin Chen, Seiji Motojima, Juri Sakai and Shaoming Yang, *Jpn.*

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- J. Appl. Phys.*, **45**, L1019-L1021(2006).
- 69) Preparation and electrical properties of carbon microcoils for the tactile sensor, T. Katsuno, X. Chen, S. Yang and S. Motojima, *Trans. Mater. Res. Soc. Jpn.*, **31**, 697-700(2006).
- 70) Tactile micro-sensor elements prepared from aligned super-elastic carbon microcoils(SE-CMC) and polysilicone, S. Yang, X. Chen, H. Aoki and S. Motojima, *Smart Mater. Structures*, **15**, 687-694 (2006).
- 71) The influences of some physical conditions on the sensory properties of biomimetic tactile sensor element sheets made from carbon microcoils (CMCs)/polymer composite, Xiuqin Chen, Shaoming Yang, J. Sakai, N. Matsushita, A. Shimizu, and S. Motojima, *Mater. Technol.*, **24**(4), 238-247 (2006).
- 72) Tactile sensing properties of protein-like single-helix carbon microcoils, S. Yang, X. Chen, and S. Motojima, *Carbon* **44**(15), 3352-3355(2006).
- 73) Preparation and dynamic sensing properties of elastic CMC tactile sensors with various surface morphologies, X. Chen, S. Yang, J. Sakai, M. Hasegawa, A. Shimizu and S. Motojima, *Mater. Technol.*, **24**(5), 297-307(2006).
- 74) Synthesis and morphology of carbon microcoils produced using methane as a carbon source Shaoming Yang, M. Hasegawa, Xiuqin Chen, and S. Motojima, *Carbon* **45**(7), 1592-1595(2007).
- 75) Relationship of a carbon microcoil and carbon microcoil tactile sensor element in electrical properties *Diamond and Related Materials*, , T. Katsuno, X. Chen, S. Yang and S. Motojima **16**, 1000-1003(2007)
- 76) Novel tactile/proximity sensors made of vapor grown carbon microcoils(CMCs), X. Chen, S Yang, H. Natuhara, T. Sekine and S. Motojima, *IEEE, The Second International Conference on Sensing Technology*, 446-449 (2007/11/26-28, New Zealand). (PDF)
- 77) Application of CMC sensors in medical robotics autonomous system, X. Chen, S. Yang, H. Natuhara, K. Kawabe, T. Takemitsu and S. Motojima, *IEEE, The Fourth International Conference on Computational Intelligence, Robotics and Autonomous Systems*, 132-136 (2007/11/28-30, New Zealand) . (PDF)
- 78) Characteristics and application of CMC sensors in robotic medical and autonomous systems, X. Chen, S. Yang, H. Natuhara, K. Kawabe, T. Takemitsu and S. Motojima, *Sensors & Transducers J.*, **90**(special issue), 1-10(2008 April). (PDF)
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B) Books and reviews

On silicates

- 1) Advance in study on vapor grown carbon fibers, Zeng qiwei, Chen Xiuqin, **Hua Gong Xin Xing Cai Liao**, 2002, (6), 13. (Written in Chinese)
- 2) Advance in study on microwave absorbers , Wang Haiquan, Chen Xiuqin , **Cai Liao Dao Bao** , 17, 170-173(2003). (Written in Chinese)
- 3) Photocatalyst materials for water decomposition in the presence of sacrificial reagent under visible light. Li, Taohai; Wu, Jihuai; Chen, Xiuqin, **Huagong Xinxing Cailiao**, 32(4), 1-4 (2004). (Written in Chinese).

On CMCs

- 4) Nanohelical/sprial materials, S. Motojima and X. Chen, **Encyclopedia of Nanosci. and Nanotechnol.**, (Ed. by H. S. Nalwa, American Science Publisher, 2004), 6, 775-794(2004).
- 5) Advance in research of carbon micro/nano-coils abroad, **Materials Integration**, X. Chen, and S. Motojima, 17(7), 34-44(2004).
- 6) カーボンマイクロコイル(CMC) の合成、物性及び応用、元島栖二、陳 秀琴、**粉体工学会誌**、42、715-720(2005).
- 7) 3D-ヘリカル/らせん構造のセラミックス材料の創製とその特性、元島栖二、陳 秀琴、**鉦山**、58(6)、38-48(2005).
- 8) “カーボンマイクロコイル(CMC)を活用した超高感度触覚センサの開発”、元島栖二、陳 秀琴、「**超五感センサの最前線**」、pp.299-309 ((エヌ・ティー・エス, 2005/11/25 発行) . (分担執筆)
- 9) らせん構造を持つカーボンマイクロコイル (CMC)、陳 秀琴、元島栖二、**化学と教育**、54(3)、146-147(2006) .
- 10)カーボンマイクロコイル(CMC)に見る自己組織化現象、元島栖二、陳 秀琴、**繊維と工業**、62、146-147(2006).
- 11) Vapor phase preparation and some properties of carbon micro-coils(CMCs), Xiuqin Chen and Seiji and Motojima, **Kona** 24, 715-720 (2006).
- 12) Preparation and Characterization of Carbon Microcoils (CMCs) , Seiji Motojima and Xiuqin Chen, **Bull. Chem. Soc. Jpn**, 80(3),449-455(2007). March 15th

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- 13) 次世代型革新的新素材 カーボンマイクロコイル(CMC)のその未来像 陳 秀琴、元島栖二「化学工業」58(1)、27-32(2007)。
- 14) Preparation and characterization of carbon microcoils(CMCs), S. Motojima and X.Chen, Bull. Chem. Soc. Jpn., 80(3), pp. 449-455(2007).
- 15)カーボンマイクロコイル(CMC)の創製と物性、元島栖二、陳 秀琴、ナノカーボンハンドブック(Handbook of Nano Carbon)(分担執筆、エヌ・ティー・エス)、pp.775-781(2007/7/17 発行)。
- 16)カーボンマイクロコイル(CMC)を用いた高感度触角・近接センサー、元島栖二、陳 秀琴、ナノカーボンハンドブック(Handbook of Nano Carbon)(分担執筆、エヌ・ティー・エス)、pp.782-788(2007/7/17 発行)。
- 17)カーボンマイクロコイル(CMC)の開発とその応用、陳 秀琴、元島栖二、炭素、pp.338-344(2007)。
- 18)カーボンマイクロコイル(CMC)に見る自己組織化、陳 秀琴、元島栖二、自己組織化ハンドブック(分担執筆、エヌ・ティー・エス、(2008)
- 19)カーボンマイクロコイルのモルフォロジーと成長メカニズム、元島栖二、陳 秀琴、日本結晶成長学会誌、35(1)、pp. 37-45(2008)

C) Invited lectures

- 1) Morphology and growth models of carbon coils obtained by CVD process, *2nd Int. Symp. on Biomimetic Mater. Processing (BMMP-2)* (2002/1/15-17, Nagoya, Japan).
- 2) カーボンマイコイルの研究進展, *第一回カーボンマイコイル応用研究会* (2003.10.8 岐阜大)
- 3) ナノヘリカル・らせん構造物質及び超弾力性 CMC の開発について *平成14年度第一回カーボンナノコイル研究会* (2002.1.28 岐阜大)
- 4) Preparation and morphologies of elastic carbon microcoils/nanocoils by various catalysts, *International Conference on Nanohelical/Spiral Materials (Nanonohelix 2003)*: (2003, Oct 8-13, 2003, Yokohama)
- 5) カーボンナノコイルの合成、成長メカニズムおよび応用, *第13回カーボンマイコイル研究会*, 2003.12.5 名古屋)
- 6) Preparation and characterization of carbon microcoils (CMCs)" Xiuqin Chen, Seiji Motojima *International Workshop on Advanced Ceramics* Oct 30 - Nov 3. 2006 Nagoya Japan
- 7) カーボンマイクロコイルの気相合成とその応用、*第44回 CVD 研究会*、2006.11.30、名古屋
- 8) **3D-helical growth of carbon micro/nano-coils(CMCs/CNCs) and their biomimetic applications, *7nd Int. Symp. on Biomimetic Mater. Processing (BMMP- 7)*** (2007/1/23-25 Nagoya, Japan).

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- 9) 「CMCのネイチャーミメティックな成長パターンとそのメカニズム」第21回CMC研究会
2007年3月27日、名古屋

D) Awards

- 1) 華僑大学, “優秀な若い教官賞” (1999~2002, 4年間)。
- 2) 華僑大学, “優秀研究者賞” (2001)。
- 3) “Young Scientist Award” of 13-ICCG “Vapor phase preparation of super-elastic carbon microcoils” in 13th International Conference of Crystal Growth, Jul., 2001, Kyoto.
- 4) “Best Paper Finalist Award” of IEEE Robio2005, Biomimetic tactile sensors of CMC/polysilicone composite sheet as artificial skins, S. Yang, N. Matushita, A. Shimizu, X. Chen and S. Motojima, in the 2005 IEEE, International Conference on Robotics and Biomimetics, June 29-July 3, Hong Kong and Macau, 41-44, 2005. (本人が発表者、全発表論文230編中、Best Paper Award候補の最終リスト15件中に選定)。
- 5) 学術写真展“優秀賞”：日本セラミックス協会・第27回学術写真賞、「右巻きカーボンマイクロコイル」(楊少明、陳秀琴、元島栖二、2002.3)。
- 6) 学術写真展“最優秀賞”：日本セラミックス協会第31回学術写真賞「ツイスト状カーボンナノコイルから成長したダブルヘリックス状カーボンマイクロコイル(CMC)」(楊少明、陳秀琴、元島栖二、2006.3)。
- 7) “ゴールドポスター賞”，平成17年度材料技術研究協会討論会，「シングルヘリックス状のカーボンマイクロコイル(SCMC)の合成と特性評価」、(尾関出光、勝野高志、楊少明、陳秀琴、元島栖二、2005.12.9)。
- 8) “論文賞”，材料技術研究協会，「カーボンマイクロコイルの合成とバイオミメティックな応用」、(陳秀琴、楊少明2007.4.14)。
- 9) “Best poster presentation” of CIRAS 2007, **Application of CMC sensors in medical robotics autonomous system**, X. Chen, S. Yang, H. Natuhara, K. Kawabe, T. Takemitsu and S. Motojima in 4th International Conference on Computational Intelligence, Robotics and Autonomous Systems, Nov 28-30, 2007, Palmerston North, New Zealand (本人が発表者)。

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E) Reports in News Papers

- 1) 超弾力性カーボンマイコイルの開発 (応募者陳 秀琴と元島先生は共同開発した超弾力性 CMC について) 日刊工業新聞 2003. 1.24, 「導電性保ち伸び縮み・超弾力性カーボン材を開発・岐阜大と中国の大学」
- 2) 100GHz、完全吸収、日刊工業新聞、2002年1月9日
- 3) ヘリカル状の酸化チタン材料開発・岐阜大-微小コイルで新規触媒も、日本工業新聞、2003年2月18日
- 4) らせん状炭素構造体を利用 人に近い触覚センサー、痛み・くすぐったさを識別、日経産業新聞、2003年5月28日
- 5) 最小触覚センサー開発、炭素繊維使い超高感度、中日新聞、2004年6月26日
- 6) ナノテク新素材、炭素コイル広がる応用、電磁波吸収・センサーにも、読売新聞、2004年2月17日
- 7) カーボンマイクロコイル 100%シングル製造、岐阜大アセチレンガスで熱分解、日刊工業新聞、2005年2月10日
- 8) カーボンマイクロコイル、都市ガスから製造、岐阜大など、価格半分に、日刊工業新聞、2006年10月30日
- 9) 期待な新素材カーボンマイクロコイル 日刊工業新聞、2007年2月7日 (同センサーはロボット分野での期待が高い、岐阜大元島栖二先生と陳秀琴特別研究員、楊 少明特別研究員....)
- 10) <33 件に助成金贈る>, 電気新聞 2007.3.9 中部電力基礎技術研究所 研究助成金、岐阜大学カーボンマイクロコイル/弾力性樹脂複合材の伸縮に伴う電気特性変化及び触覚・近接センサー特性 (研究代表者: 陳 秀琴受賞写真をのっている)

F) Magazines Cover photos as highlight

- 1) 学会誌「JOURNAL OF THE CERAMIC SOCIETY OF JAPAN」表紙、Vol.110、October (2002)
- 2) 学会誌「JOURNAL OF THE CERAMIC SOCIETY OF JAPAN」表紙、Vol.111、December (2003)
- 3) 学会誌「Materials Letters」表紙、2002, から
- 4) 学会誌「Journal of Materials Science」表紙、Vol.39、No.8、15 April (2004)
- 5) 学会誌「APPLIED PHYSICS LETTERS」表紙、Vol.87、No.5、1 August(2005)

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6) 学会誌「Ceramics Japan, Bulletin of the ceramics society of Japan」、表紙 2007

G₁) Contributions to International Conferences (The full papers were reviewed)

- 1) Xiuqin Chen, Jitai Huang “The influence of acid treatment on properties of clay” 10 th int. clay con. Australia. Jul, 1993 (Presented at conference).
- 2) Preparation and properties of cosmo-mimetic carbon maicro-coils/micro-tubes and ceramic micro-coil /micro-tubes, by CVD process, S. Motojima, X. Chen, W.-I. Hwang, M. Hujii and H. Iwanaga, *Asian Conference on CVD* (1999/5/10 ~ 13, Shanghai).
- 3) Preparation and properties of cosmo-mimetic carbon micro-coils and ceramic micro s olenoids/micro-tubes by CVD process, S. Motojima, C. Kuzuya, W.-I.Hwang, X. Chen, M. Fujii and H. Iwanaga, *12th EURO-CVD*(1999/9/5 ~ 10, Spain)
- 4) Chemical vapor growth of cosmo-mimetic carbon micro-coils and their properties,S. Motojima, *15th Int. Conf. on Chem. Vapor Deposition*, (2000/5/14 ~ , Toronto, Canada).
- 5) Morphology of carbon micro-coils grown by the catalyzed-pyrolysis of hydrocarbon, X. Chen, W.-In Hwang, Y. Hishikawa and S. Motojima, *15th Int. Conf. on Chem. Vapor Deposition*, (2000/5/14 ~ 19, Toronto, Canada).
- 6) Preparation and properties of cosmo-mimetic carbon micro-coils and ceramic micro-solenoids/micro-tubes by CVD process, S. Motojima, X. Chen, T. Kuzuya, W.-I. Hwang, M. Fujii and H. Iwanaga, *J. Phys. IV France 9, Pr. 8-445 ~ Pr-8-452*(1999).
- 7) Morphology of carbon micro-coils grown by catalytic decomposition of hydrocarbons, X. Chen, Y. Hishikawa, W.-In Hwang, T. Kuzuya and S. Motojima, *Electrochem. Soc. Proc.*, **2000-13**, 385-392(2000).
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- 10) Morphology and growth models of carbon coils obtained by CVD process (Invited talk), Xiuqin Chen, Shaoming Yang, and Seiji Motojima, *2nd Int. Symp. on Biomimetic Mater. Processing (BMMP-2)*, (2002/1/15-17, Nagoya, Japan).
- 11) Conformation and growth mechanism of the carbon nanocoils with twisting form in comparison with that of carbon microcoils, X. Chen, S. Yang, K. Takeuchi, T. Hashishin, H. Iwanaga and S. Motojima, *8th Int. Conf., New Diamond Sci. and Tech* (2002/7/21-31 The University of Melbourne, Australia)
- 12) Microcoiled carbon fibers formed by using Ni-Cu catalysts in CVD process, X. Chen, K. Takeuchi, S. Yang, Y. Hishikawa and S. Motojima, *Electrochem. Soc. Proc.*, **2003-08**, 1190-1197(2003).
- 13) Vapor phase preparation of carbon microcoils and nanocoils under concerted amplification of high magnetic field and their properties, S. Motojima, K. Kuzuya, S. Yang, X. Chen, T. Hashishin, H. Iwanaga, S. Shimada, H. Saito, N. Yoshikawa, T. Awaji and K.Watanabe, *Electrochem. Soc. Proc.*, **2003-08**,

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- 14) Carbon micro/nanocoils produced by using WS₂ catalyst in CVD process, S. Yang, X. Chen and S. Motojima, *Electrochem. Soc. Proc.*, **2003-08**, 1206-1211(2003).
 - 15) Conformations of super-elastic carbon micro/nano-springs and their properties, S. Yang, X. Chen, M. Hasegawa and S. Motojima, *Proc. of the IEEE 2004 Int. Conf. on MEMS, NANO, and Smart Systems*, (25 – 27 August 2004, Banff, Alberta-Canada), pp.32-35(2004).
 - 16) Novel tactile sensors manufactured by carbon microcoils, X. Chen, S. Yang, M. Hasegawa, and K. Takeuchi, S. Motojima, *Proc. of the IEEE 2004 Int. Conf. on MEMS, NANO, and Smart Systems*, (25 – 27 August 2004, Banff, Alberta-Canada), pp. 486-490(2004).
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 - 18) Biomimetic tactile sensors of CMC/polysilicone composite sheet as artificial skins, S. Yang, N. Matushita, A. Shimizu, X. Chen and S. Motojima, *Proc. of the 2005 IEEE, Int. Conf. on Robotics and Biomimetics*, (June 29-July 3, Hong Kong and Macau), pp. 41-44(2005).
 - 19) Artificial skin-biomimetic micro-tactile sensors prepared by carbon microcoils/nanocoils (CMC), X. Chen, S. Yang and S.Motojima, *Asian BioCeramic Symposium 2005* (Sapporo, Japan), Archives of Bio-Ceramics Research, **5**, 190-197(2005).
 - 20) Biomimetic micro-tactile sensors using double-helix carbon microcoils and single-helix carbon microcoils, S. Yang, X. Chen, T. Katsuno and S.Motojima, *Asian BioCeramic Symposium 2005*(Sapporo, Japan), *Archives of BioCeramics Research*, **5**, 194-197(2005).
 - 21) The influence of ceramic supporter on the catalyzed chemical vapour deposition of carbon microcoils/nanocoils, X.Chen, S. Yang, T. Katsuno and S. Motojima, **第22回日韓国際セラミックスセミナー** (2005/11/24-26)
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 - 24) Sensor properties of super-elastic carbon microcoils, X. Chen, H. Aoki, S. Yang, and S. Motojima, **Carbon-2005**(2005/7/3-7, Korea)
 - 25) Preparation of single-helix carbon nanocoils by catalytic CVD process, X.Chen, S. Yang, T. Katsuno, I. Ozeki and S. Motojima, 4th International Conference on Hot-Wire CVD (Cat-CVD) Process (2006/10/4-8, Takayama,Gifu)
 - 26) Preparation of carbon microcoils(CMC) by cat-CVD process and their properties, S. Yang, X. Chen, T. Katsuno, Y. Nitta, M. Hasegawa and S. Motojima, 4th International Conference on Hot-Wire CVD (Cat-CVD) Process (2006/10/4-8, Takayama,Gifu)
 - 27) Conductivity and mechanical properties of a single-helix carbon microcoil prepared by a thermal chemical vapor deposition, T. Katsuno, I. Ozeki, S. Yang, X. Chen, H. Natsuhara, K. Yoshimura, S. Motojima, the

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5th IEEE conference on sensors, Daegu Exhibition & Convention Center (EXCO), Daegu, Korea, Dates: Oct. 22 - 25, 2006

- 28) Multifunctional CMC/silicone composite sensor elements as the tactile and nearness sensors, H. Natsuhara, T. Katsuno, X. Chen, S. Yang, S. Motojima, the 5th IEEE conference on sensors, Daegu Exhibition & Convention Center (EXCO), Daegu, Korea, Dates: Oct. 22-25, 2006.
- 29) Application of CMC sensors in medical robotics autonomous system, X. Chen, S. Yang, H. Natuhara, K. Kawabe, T. Takemitsu and S. Motojima Proceeding of Fourth International Conference on Computational Intelligence, Robotics and Autonomous Systems (CIRAS'2007), Nov 28-30, 2007, Palmerston North, New Zealand, 132-136
- 30) Novel tactile/proximity sensors made of vapor grown carbon microcoils (CMCs) Xiuqin Chen, Shaoming Yang, H. Natuhara, T. Sekine, and S. Motojima Proceeding of 2nd International Conference on Sensing Technology of 2007, November 26-28, 2007 Palmerston North, New Zealand, 446-449
- 31) Novel Tactile/Proximity Sensing Properties of Carbon Microcoils, Xiuqin Chen, Shaoming Yang, Izumi Ozeki, Seiji Motojima, Hideki Sakai, Masahiko Abe, *Carbon 2008*, July 13th-18th 2008, Nagano, Japan
- 32) Synthesis and Morphology of Carbon Microcoils Produced from Methane, Shaoming Yang, Xiuqin Chen, S. Motojima, *Carbon 2008*, July 13th-18th 2008, Nagano, Japan

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- 1) Vapour phase preparation of carbon micro-coils and graphitic micro-coils/microtubes and their properties, S. Motojima, X. Chen, W.-In Hwang, Y. Hishikawa, *Carbon 2000, 1st World Conf. Carbon* (2000/7/10 ~ 16, Berlin, Germany).
- 2) Novel pattern of carbon micro-coils grown by chemical vapour deposition, X. Chen, Y. Hishikawa and S. Motojima, *Carbon 2000, 1st World Conf. Carbon* (2000/7/10 ~ 16, Berlin, Germany).
- 3) Preparation of graphite micro-coils by the heat-treatment of carbon micro-coils, X. Chen, W.-In Hwang, T. Kuzuya, M. Kohda, Y. Hishikawa, H. Iwanaga, and S. Motojima, *1st Asian Conference on Crystal Growth and Crystal Technology*, (2000/8/29-31, Sendai).
- 4) Vapor phase preparation of super-elastic carbon micro-coils, X. Chen, S. Motojima and H. Iwanaga, *13th Int. Conf. Crystal Growth (13th ICCG)*, 2001/7/31-8/4, Kyoto).
- 5) Morphology and growth models of carbon coils obtained by CVD process (Invited talk), Xiuqin Chen, Shaoming Yang, and Seiji Motojima, *2nd Int. Symp. on Biomimetic Mater. Processing (BMMP-2)*, (2002/1/15-17, Nagoya, Japan).
- 6) Conformation and growth mechanism of the carbon nanocoils with twisting form in comparison

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- 7) Vapor-Phase Preparation of Cosmo-mimetic Carbon Nanocoils Using Metal Catalysts Supported by Ceramics Powder, Kotaro Takeuchi, Xiuqin Chen, Shaoming Yang, and Seiji Motojima, *2nd Int. Symp. on Biomimetic Mater. Processing (BMMP-2)*, (2002/1/15-17, Nagoya).
 - 8) Morphology and growth models of carbon coils obtained by CVD process, Xiuqin Chen, Shaoming Yang, and Seiji Motojima, 2nd Int. Symp. on Biomimetic Mater. Processing (*BMMP-2*)(2002/1/15-17, Nagoya).
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 - 11) Vapor phase preparation of carbon nanocoils using ceramic-supported metal catalysts, D. Nagahara, K. Takeuchi, X. Chen and S. Motojima, *3rd Int. Symp. on Biomimetic Mater. Processing (BMMP-2)*(2003/1/27-29, Nagoya).
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 - 15) Morphology of zigzag carbon nanofibers prepared by catalytic pyrolysis of acetylene using Fe group containing alloy catalysts, Shaoming Yang, Xiuqin Chen and Seiji. Motojima, *3rd Int. Symp. on Biomimetic Mater. Processing (BMMP-3)*, (2003/1/27-29, Nagoya, Japan).
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 - 17) Biomimetic high sensitive tactile sensors prepared by carbon microcoils, S. Yang, X. Chen, S.

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- 18) Cosmo-mimetic carbon microcoils and their potential applications, S. Motojima, X. Chen and S. Yang, *4th Int. Symp. on Biomimetic Mater. Processing (BMMP-4)*, (2003/1/27)
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- 20) The tactile micro-sensor characteristics of carbon microcoils, M. Hasegawa, S. Motojima, X. Chen, S. Yang, *Carbon-2005*(2005/7/3-7, Korea)
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- 22) The tactile microsensor characteristics of carbon microcoils (M. Hasegawa, S. Motojima, X. Chen, S. Yang. *5th Int. Conf. Symp. Biomimetic Mater. Processings (BMMP-5)*, (2005/1/26-28, Nagoya).
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- 26) Change of electrical parameters of CMC/polyurethane thin fiber under applied stress, M. Kamei, T. Katsuno, S. Yang, X. Chen, K. Kanayama, H. Yoshimura, K. Kato, F. Miyazawa, N. Morishita, K. Kawabe and S. Motojima, *6th Int. Symp. on Biomimetic Mater. Processing (BMMP-6)*(2006/1/25-27, Nagoya)
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- 28) Preparation of carbon microcoils using novel reaction tube, Y. Kondo, S. Yang, X. Chen, T. Katsuno, K. Kawabe and S. Motojima, *6th Int. Symp. on Biomimetic Mater. Processing (BMMP-6)*(2006/1/25-27, Nagoya)
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- 35) Effect of carbon microcoils arraying among the matrix on tactile sensing ability of carbon microcoils/polysilicone tactile sensors, X. Chen, S. Yang, T. Katsuno and S. Motojima, *6th Int. Symp. on Biomimetic Mater. Processing (BMMP-6)*(2006/1/25-27, Nagoya)
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- 41) Preparation of Ni-coated CMC/polysilicone sensor elements and their tactile sensing properties, S. Eguchi, T. Katsuno, H. Natsuhara, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)
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- 43) Preparation and property of diaphragm-type CMC pressure sensor element, M. Kamei, T. Katsuno, T. Sekine, K. Hashimoto, K. Miwa, C. Kuzuya, K. Kawabe, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)
- 44) Inhibition effect of carbon microcoils (CMCs) for keloid fibroblast (L-929) Cells, J. Sakai, I. Nagano, Y. Takahashi, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)
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- 46) Mechanical properties of carbon microcoils (CMCs), T. Kohno, S. Yang, X. Chen, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)
- 47) Preparation of single-helix and super-elastic CMCs by catalytic CVD process, W. Itoh, I. Ozeki, S. Yang, X. Chen, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)
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- 49) Dielectric properties of CMC/polysilicone composite sheets, K. Uchida, T. Katsuno, H. Natuhara, S. Yang, X. Chen, T. Sekine, C. Kuzuya, K. Kawabe, and S. Motojima, 7th International Symposium on Biomimetic Material Processing(BMMP-7) (2007/1/23-25、名古屋大学)

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