

Curriculum Vitae for Xiaodong Zou

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Born Jan. 4, 1964. Female, married, 3 children (born in 1989, 1995 and 2000, maternity leave in total 24 months).

Swedish citizen. English, Swedish and Chinese fluent.

A. Professional preparation

Bachelor of Sciences in solid state physics, Peking University, July, 1984.

Master of Sciences in metal physics, Beijing University of Science and Technology, 1986.

Doctor of Philosophy in structural chemistry, Stockholm University, 1995.

Post doc at Institute of Geology, Lund University, 1995 - 1996.

B. Appointments

August 1 2013-: Deputy Head of Department of Materials and Environmental Chemistry, SU.

January 2010-: Chair of the Inorganic and Structural Chemistry Unit, Department of Materials and Environmental Chemistry, SU.

October 2006 – February 2012: Founder and Director of the Berzelii Centre EXSELENT on Porous Materials, SU.

April 2006 – October 2011: Founder and Director of the Materials Analysis Centre at Arrhenius Laboratory (MACAL), SU.

March 2005 -: Professor in Structural Chemistry, at the Department of Materials and Environmental Chemistry, Stockholm University.

Jan. 2001 - December 2005: Research Fellow at the Royal Swedish Academy of Sciences (KVA).

March - August 1999: visiting professor at Institut des Matériaux Jean Rouxel, Nantes, France.

January 1997 - December 2000: research assistant (docent May 1998) at the Department of Physical, Inorganic and Structural Chemistry, Stockholm University, supported by NFR.

January 1987 - December 1987: research assistant at the Beijing Laboratory of Electron Microscopy, Chinese Academy of Sciences, Beijing.

C. Supervision of Ph.D. students and post-doctoral fellows:

Graduated Ph.D. students (as main supervisor):

Tony Conradsson, October 2002. Liqiu Tang, May 2005. Kirsten E. Christensen, May 2008. Daliang Zhang, June 2010, Mikaela Gustafsson, April 2012. Andrew Kentaro Inge, June, 2012. Bao-Lin Lee (May 2013, shared with Organic Chemistry). Tom Willhammar, December 2013. Yifeng Yun, December 2014. Fabian Carson, June 2015. Peng Guo, May 2016. Hani Nasser Abdelhamid (October 2017)

Present Ph.D. students (as main supervisor):

Jingjing Zhao (March 2016), Viktor Bengtsson (September 2016), Bin Wang (August 2015), Taimin Yang (March 2015), Magdalena Cichocka (August 2014), Ning Yuan (January 2014), Elina Kapaca (February 2013). In addition, I am co-supervisor of 12 PhD students, five finished and seven on going.

Post doctoral fellows:

Thomas Weirich, 1997-1999. Kai Sun, 1998-2000. Zhimin Mo, 2000. Guo-Yu Yang, 2001. Mauro Gemmi, 2001-2002. Markus Doeblinger, 2002. Yafeng Li, 2002-2004. Lesya Demchenko, 2005. Tie-zhen Ren, 2005-2006. Lei Shi, Zhanbing He, 2005-2007. Junliang Sun, 2007-2008. Charlotte Bonneau, 2007-2008. Mingrun Li, 2007 - 2009. Daniel Grüner, 2009. Huijuan Yue, 2007-2010. Lei Han, 2009-2010. Max Peskov, 2008-2011. Suman Sahoo, 2009-2011. Wei Wan, 2009-2011. Qingxia Yao, 2009 -2013. Jie Su, 2010-2014. Ana Eva Pletero Prats, 2012-2014. Changhong Xiao, 2013-2014. Ilich Ibarra, 2013-2014. Yi Zhang,

2013-2015. Changjiu Xia, 2014-2015. Haoquan Zheng, 2012-2016. Jiho Shin, 2015-2016. Diana Bernin, 2015. Hongyi Xu, 2014-. Zhehao Huang, 2015-. Stef Smeets, 2016-.

D. Scientific Collaborations:

- Prof. Avelino Corma, Inst. Tecnología Química, UPV-CSIC, Univ. Politécnica de Valencia
- Dr. Lynne McCusker, Laboratorium f. Kristallographie, ETH, Zurich,
- Prof. Norbert Stock, Christian-Albrechts-Universität, Kiel, *Germany*
- Prof. Hermann Gies, Ruhr University *Bochum, Germany*
- Prof. Paul Wright, EaStCHEM School of Chemistry, University of St Andrews, UK
- Prof. Hong-Cai Zhou, Texas A&M University, USA
- Drs. Karl Strohmaier, Allen Burton, ExxonMobil Research & Engineering Co., USA
- Prof. Suk Bong Hong, Department of Chemical Engineering, POSTECH, Pohang, Korea
- Profs. Jan-Erling Bäckvall and Belen Martín-Matúte, Department of Organic Chemistry, SU

E. Commissions of trust

Member of the Royal Swedish Academy of Engineering Sciences (IVA) since 2017.
Fellow of the Royal Chemical Society since 2016.
Council Member of the International Zeolite Association, since 2016.
Project Review Panel Member “Hard Condensed Matter”, DESY Photo Science since 2015.
Panel Member (PE5) of the ERC Starting Grant 2015, 2017.
Panel Member RFI-BG2 “infrastructure for molecules, cell and materials research”, Research Infrastructures, the Swedish Research Council since 2011.
Member of the Swedish National Committee for Chemistry, since 2012.
Editor of *Zeitschrift für Kristallographie*, 2010-2015.
Member of the Structure Commission of International Zeolite Association, since 2010.
Member of the Commission on Electron Crystallography of the International Union of Crystallography, 2002-2011.
Member of the SIG (Special Interested Group) on Electron Crystallography, European Crystallographic Association, since 2000.
Overseas scientific expert at Fujian Inst. of Research on the Structure of Matter, since 2007.
Int. scientific expert of the “111” Research Project of China, Jilin University, since 2006.
Guest professor of Jilin University, since 2006 -.
Panel Member of the Evaluation group in Chemical Engineering (NT-H), VR, 2006, 2008.
Organiser of international symposia and workshops on Electron Microscopy and catalysis.
Organisers and directors of 8 international schools on electron crystallography in France, Stockholm, Finland, Poland and Italy, in total 400 participants from 23 different countries.
Organisers of 4 international conferences on electron microscopy and quasicrystals.
Opponent and members of PhD theses committees, expert in evaluation of professor promotions, reviewers of national research grants in Europe,

F. Prize and invited lectures

Arrhenius-plaketten 2012, given by the Swedish Chemical Society.
K.H. Kuo Award for Distinguished Scientist, 2010.
Göran Gustafsson Prize in Chemistry, given by the Royal Swedish Academy of Sciences, 2008.
Tage Erlander Prize for Science and Technology, given by the Royal Swedish Academy of Sciences (<http://www.kva.se>), 2002.
Kungl. Vetenskapsakademiens särskilda forskartjänster supported by Knut and Wallenberg Foundation, 2001-2005.
Sigrid Arrhenius stipend in 1995 for one of the best Ph.D. theses in Natural Sciences, SU.
165 invited lectures at different laboratories, international schools and conferences.

G. Publications

I have **250** publications including **218** original scientific papers in refereed journals (since 2005 **four** in *Nature*, **one** in *Science*, **one** in *Nature Mater.*, **two** in *Nature Chem.*, **two** in *Nature*

Comm., **one** in *PNAS*, **one** in *Chem. Sci.*, **9** in *Angew. Chem. Int. Ed.*, **15** in *J. Am. Chem. Soc.*), **5** books, **16** book chapters and **16** original scientific papers in refereed conference proceedings. I have also **10** software for quantitative analysis of high-resolution electron microscopy images and electron diffraction patterns and **four** patents and **one** patent application. The software has been commercialized and sold to > 200 laboratories.

H. List of ten selected publications:

1. P. Guo, J. Shin, A. Greenaway, J.G. Min, J. Su, H.J. Choi, L.F. Liu, P.A. Cox, S.B. Hong, P.A. Wright, X.D. Zou, “A zeolite family with expanding structural complexity and embedded isorecticular structures” *Nature* **2015**, 524, 74–78.
2. T. Willhammar, Y.F. Yun, X.D. Zou “Structure determination of porous materials by electron crystallography”, *Adv. Funct. Mater.* 24 (2014) 182-199.
3. W. Wan, J.L. Sun, J. Su, S. Hovmöller, X.D. Zou “Three-dimensional rotation electron diffraction: software RED for automated data collection and data processing” *J. App. Crystallogr.* 46 (2013) 1863-1873.
4. T. Willhammar, J.L. Sun, W. Wan, P. Oleynikov, D.L. Zhang, X.D. Zou, M. Moliner, J. Gonzalez, C. Martínez, F. Rey, A. Corma, “Structure and catalytic properties of the most complex intergrown zeolite ITQ-39 determined by electron crystallography”, *Nature Chem.* 4 (2012) 188-194.
5. X.D. Zou, S. Hovmöller and P. Oleynikov, “Electron crystallography - Electron microscopy and electron diffraction”, IUCr texts on crystallography 16, Oxford University Press (2011) ISBN 978-0-19-958020-0.
6. J.L. Sun, C. Bonneau, Á. Cantín, A. Corma, M.J. Díaz-Cabañas, M. Moliner, D.L. Zhang, M.R. Li and X.D. Zou “The ITQ-37 mesoporous chiral zeolite” *Nature* 458 (2009) 1154-1157.
7. Y. Han, D.L. Zhang, L. L. Chng, J.L. Sun, L. Zhao, X.D. Zou, J.Y. Ying “A tri-continuous mesoporous material with a silica pore wall following a hexagonal minimal surface”, *Nature Chem.* 1 (2009) 123-127.
8. L.Q. Tang, L. Shi, C. Bonneau, J.L. Sun, H.J. Yue, A. Ojuva, B.-L. Lee, M. Kritikos, B. Zoltán, J. Mink, R. G. Bell and X.D. Zou “A zeolite family with chiral and achiral structures built from the same building layer” *Nature Mater.* 7 (2008) 381-385.
9. C. Baerlocher, F. Gramm, L. Massüger, L.B. McCusker, Z.B. He, S. Hovmöller and X.D. Zou, “Structure of polycrystalline zeolite catalyst IM-5 solved by enhanced charge flipping”, *Science* 315 (2007) 1113-1116.
10. X.D. Zou, T. Conradsson, M. Klingstedt, M.S. Dadachov and M. O’Keeffe “A mesoporous germanium oxide with crystalline pore walls and its chiral derivative”, *Nature* 437 (2005) 716-719.

I. List of patents

1. Xiaodong Zou and Liqiu Tang “Zeolite family built from a framework layer”, PCT/EP2006/068778.
2. Allen W. Burton, Karl G. Strohmaier, Hilda B. Vroman, Afeworki, Mobae, Ravikovitch, Peter I., Paur, Charanjit S., Xiaodong Zou, Peng Guo, Junliang Sun “EMM-26, a novel synthetic crystalline materials, its preparation, and its use” US Patent 20160060129.
3. Allen W. Burton, Karl G. Strohmaier, Hilda B. Vroman, Tom J. Willhammar, Yifeng Yun, Wei Wan, Xiaodong Zou “EMM-25 Molecular sieve materials, its synthesis and use”, [WO2014163859A1](#).

Plus one patent application submitted November 2015.

J. List of software

1. **CRISP** – for crystallographic image processing of electron micrographs.
2. **ELD** – for extraction of quantitative information from electron diffraction patterns.
3. **Trice** – for reconstructing 3D reciprocal space and determining the unit cell dimensions from two or more electron diffraction patterns.
4. **PhIDO** – for phase identification and indexing from electron diffraction patterns.
5. **Triple** – for merging and scaling 3D electron diffraction data, with full treatment of crystallographic symmetry.
6. **TexPat** – for quantitative analysis of electron diffraction patterns from texture.
7. **eMap** – for reconstructing 3D electron density maps and finding peaks positions.
8. **QFocus** – Through-focus structure projection reconstruction from HRTEM image series.
9. **RED data collection** – rotation electron diffraction for automated collection of complete 3D electron diffraction data.
10. **RED data processing** – for reconstructing 3D reciprocal space from the RED data and determining the unit cell and crystal symmetry and extracting diffraction intensities.

Software 1-5 and 9-10 are commercial products and available from <http://www.calidris-em.com/>.
The software has been sold to more than 200 laboratories including academia and industry.