



SynCat @ Beijing

The Synfuels China Laboratory for Fundamental Catalysis
Science & Technology for Clean Fuels from Coal

Postdoctoral Fellowships



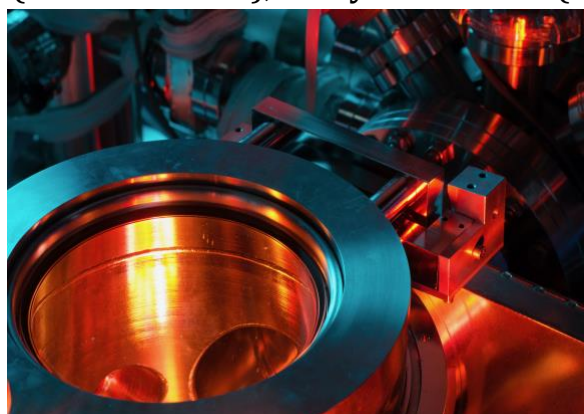
SynCat@Beijing is housed in a modern laboratory building (2014) at the premises of Synfuels China Technology in Beijing-Huairou (photo Synfuels China).

SynCat@Beijing is the laboratory for fundamental research of Synfuels China Technology Co. Ltd, located in the rapidly developing science ecosystem of Beijing-Huairou. While Synfuels China's core business is to convert coal in a responsible way into clean fuels and chemicals, it firmly believes that the future of energy technology depends critically on new knowledge of materials and their properties and on mechanisms that yet have to be discovered.

Hence, SynCat@Beijing is a laboratory for experimental fundamental research in materials properties, structure of materials, surfaces, and for interacting with the significant computational division of Synfuels China, which engages in advanced simulation, molecular modeling, and prediction of material properties, and also stimulates method development.

To this end the SynCat and Synfuels China laboratories together dispose over a wealth of instrumentation, including transmission electron microscopy with in situ facilities, EELS, STEM/EDX (one instrument, one planned), scanning tunneling microscopy (3 instruments), photoemission (4 instruments), X-ray diffraction (4 instruments), and a range of spectroscopic methods (NMR, FTIR, Raman, UV-Vis).

Synfuels China regards its SynCat@Beijing laboratory as a place where people are free to explore their research ideas, to freely interact and collaborate with the academic world, both inside China and worldwide, and where scientists keep coming after they found new positions to keep collaborating and using the facilities.



SynCat@Beijing has three surface science set ups equipped with STM (photo Syngaschem BV)



SynCat@Beijing has a young staff of internationally oriented scientists who typically stay for 3-5 years before they move on. They have a PhD from or a postdoc at internationally renowned universities. Our present and past researchers come for example from the universities of Aarhus, Cardiff, Eindhoven, Purdue, Berkeley, NUS Singapore, the Fritz-Haber Institute at Berlin, and several other places. They are used to communicate predominantly in English. Researchers discuss and define their projects with the Directors, and then have considerable freedom to carry out their research as they believe is best. Weekly group meetings are held where staff members take turns to inform colleagues and students about their research, in addition to the more formal semi-annual meetings, with presentations to the research directors.

The staff has complete freedom to publish research done within the SynCat domain. Since the start in 2015, our scientists published over 100 papers, often together with national universities and institutions such as Peking University, The Dalian Institute of Chemical Physics, Shanghai Jiao Tong University, Soochow University and the Chinese Academy Institute of Coal Chemistry in Taiyuan, and international partners such as the iNano Institute at the University of Aarhus, the Catalysis Institute at Cardiff University, and SynCat@DIFFER in Eindhoven. Papers appeared in a range of well-established journals, including Nature Communications, Progress in Energy and Combustion Science, Angewandte Chemie, Science, JACS, ACS Catalysis, Chemistry of Materials, and others. Five of

these publications have been recognized as “highly cited papers” by the ISI Web of Science, implying they attract more than 25 citations per year on average.

SynCat@Beijing values that their staff members develop themselves as future leaders in their field, see the website www.scientificleaders.com

Location and living conditions

Synfuels China and SynCat@Beijing are located in Huairou, about 50 km northeast from the Center of Beijing, adjacent to the mountains and the Yanqi Lake. From the SynCat labs, one can see the famous Chinese Wall – getting there takes about an hour. Frequent express buses connect Huairou to the Beijing subway system and take you into the centre of Beijing in about an hour. The Beijing Capital Airport is about 45 taxi minutes away.



Apartment building where most of the SynCat@Beijing is housed (photo Ajin Cheruvathur)

Our staff is housed in modern, furnished apartments owned by the company, about 1 km away from the laboratory, for which only the cost of utilities is charged (no rent). The people generally take their lunches and often even breakfasts in the company

restaurant at nominal cost or drink a capucino or espresso in the internationally styled coffee corner. The center of Huairou offers several shopping malls and many restaurants. The nearby European Quarter has bars, restaurants and outside terraces, and is a nice place to spend a Summer evening.

Who are we looking for:

Experimentally oriented postdoctoral fellows from all nationalities with a keen interest in understanding the fundamentals of materials, their surfaces and their interaction with atoms and molecules as these play a role in energy technologies of the future. These materials can be (but do not have to be) catalysts, electrodes, materials for storage of energy, alloys with ultra-high strength, or with very special, or novel properties. It is essential that candidates obtained their PhD degree outside China, or if not, have a few years of postdoc experience abroad in a fundamentally oriented research laboratory after the PhD degree.

We are particularly interested in candidates with thorough experimental experience in high-resolution electron microscopy, UHV surface science with single crystals, or novel materials characterization techniques.

Applicants should have the ability to work independently and take full responsibility for their own project (be accomplished self-leaders), and to create synergy in collaboration with colleagues (particularly those of the materials

modeling program at Synfuels China). They have published as a first and /or most responsible corresponding author in the international literature, and they have excellent command of the English language (spoken and written).

What we offer:

- postdoctoral fellowships for 3-5 years;
- salary between 450.000 – 550.000 RMB per year (depending on experience); *this corresponds to about € 58.000 - € 70.000 or US\$ 68.000 – 84.000 per year.*
- free housing in modern, furnished and fully equipped company apartments (approx. 10 min walk from the laboratory; service/utility costs not included);
- non-Chinese nationals receive an international health insurance package.

How to apply:

- Candidates submit an application letter (1 page maximum) along with their complete CV, plus a brief research proposal (1-2 pages maximum) on a topic that fits in the research philosophy of SynCat@Beijing as explained above. This proposal emphasizes **why** the research is important, and what it adds to existing knowledge, if successful.
- Submission of applications occurs exclusively by email to hrm@syngaschem.com; applicants can expect to receive a first response whether their application will be taken into consideration by Synfuels China Technology within one week after submission.
- *Based on previous experience in recruiting candidates for SynCat@Beijing, we note that applications proposing routine projects in catalyst or process development, biomass valorization, applied photocatalysis, etc. will **not** be considered.*

The website www.syncatbeijing.com gives further information on existing research programs and on available infrastructure.



Impressions from the European Quarter in Huairou (photos Ajin Cheruvathur)