



## DRAFT AGENDA

(Version 28 May 2018)

### The Second China-Germany workshop on XFEL Science and Technology Hamburg, Germany 21/22 June 2018

#### **Objective:**

- *Further identify, define and prepare concrete areas, actions and joint projects of FEL S&T cooperation – also within the framework of the DESY-SINAP joint lab*
- *Strengthen and shape the collaboration across the German-Chinese FEL communities by launching first cooperation, coordination and support activities*
- *Questions to be addressed by speakers, when relevant*
  - How do you envisage the collaboration on the topic you will address (exchange of personnel, time line, with whom...)?
  - For this collaboration what kind of resources do you need?

#### **Wed, 20 June 2018: Young Scientist Forum (Location: CSSB Auditorium)**

- 13h30-Lecture (45' with 15' questions) for 20-40 Chinese students and young scientists
- G. Geloni : X-ray Free-Electron Laser Sources: an Introduction
- M. Altarelli : Science at FEL
- Coffee Break
- C. Bressler: How to do an XFEL experiment
- Transfer to European XFEL and Site Visit



## Thu, 21 June 2018: FEL S&T Workshop (Location: CSSB Building, DESY)

### 9:00 Opening Session (CSSB Auditorium)

Welcome & Goals of the Workshop (2x 15')

- 1x welcome Address from the Chinese side (tbd)
- 1x welcome Address from the German side (R. Feidenhans'l, European XFEL)

### 9:30 Session I: Status of FEL-Facilities and future plans in China and Hamburg (CSSB AUDITORIUM)

Talks are 20'+10' discussions/Q&A

Chair: NN, China

- European XFEL, recent results and strategy plan (R. Feidenhans'l)
- Shanghai hard x-ray facility SCLF – Machine development and science case

### 10:30 Coffee Break (15')

Chair: NN, European XFEL

- FLASH and FLASH2020 upgrade (W. Wurth, DESY)
- Shanghai soft X-ray facility SXFEL – Machine Development and science case
- Dalian Coherent Light Source –Lessons learnt from user operation and science case

### 12:00 Lunch Break

13:00-18:30 Split in two Parallel Sessions IIa and IIb

- *Parallel Session IIa: Accelerators, Seeding, Undulators and THz (SemR 4a/b)*
- *Parallel Session IIb: FEL Science and Methods (CSSB Auditorium)*

### 13:00 Parallel Session IIa: Accelerators, Seeding, Undulators and THz (Location: SemR 4a/b)

All Talks are 15'+5' discussions/Q&A

*Part I: Accelerators; Chair: NN*

- Experience of commissioning/operating the European XFEL (DESY)
- accelerator development at SINAP
- accelerator development at IHEP (1.3GHz SC cavity, Feisi He)
- accelerator development in PKU (CW gun and large grain high rep-rate gun, K.X. Liu)



- RF gun developments (Houjun Qian, DESY Zeuthen)
- CTFEL and future accelerator development in CAEP

**15:00 Coffee Break (15')**

*Part II: Seeding Schemes; Chair: NN, China*

- Advanced FEL seeding techniques at SXFEL and SCLF (Chao Feng, SINAP)
- FEL seeding schemes at the European XFEL (G. Geloni / S. Serkez, XFEL)
- FEL seeding schemes at FLASH2020 (B. Faatz, DESY)

**16:00 Part III: Undulator Session; Chair: NN**

- Undulator commissioning/running/development at European XFEL (Y. Li - XFEL)
- Undulator development at SINAP (Wei Zhang)
- Undulator development at IHEP (cryogenic) NN
- Possible FEL options for new undulator lines of the European XFEL (E. Schneidmiller)

**17:30 Part IV: THz Session; Chair: NN**

- Results from THz-workshop at XFEL (R. Carley/P. Zalden, European XFEL)
- Ultrafast THz source generation and application (NN, CAEP)
- development for an accelerator based, tunable, high power THz source for pump-probe experiments at European XFEL (Mikhail Krasilnikov DESY)

**18:30 End Parallel Session IIa**

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**13:00 Parallel Session IIb: FEL Science and methods (Location: CSSB Auditorium)**

*Talks are 15' + 5' discussion/Q&A*

*Chair: NN, European XFEL*

- Overview of sample environment techniques (K. Doerner, XFEL)

*Part I: Soft x-rays: Chair: NN*

- Introduction of Shanghai Soft X-ray free electron laser: beamlines, end stations, and scientific program (Zhi Liu, ShanghaiTech University)
- Soft X-ray spectroscopic research at the European XFEL (S. Molodtsov, XFEL)

*Part II: Science Applications AMO: Chair: NN*

- Perspectives in AMO science at FELs (Yuhai Jiang, SARI )
- AMO science at FLASH (Benjamin Erk, DESY)



*Part III: Science Applications: Spectroscopy Chair: NN*

- Opportunity of high repetition rate FEL in photoelectron spectroscopy (Yulin Chen, ShanghaiTech U)
- Time-resolved ARPES (Wilfried Wurth, DESY; Kai Rossmagel, CAU Kiel/DESY)
- RIXS in probing elementary excitations and its combination with XFEL (Xuerong Liu, ShanghaiTech U)
- Applications of XFEL in chemical science (Tsu-Chien Weng from STU and HPSTAR)

**15:40 Coffee Break (20')**

**16:00** *Part IV: Science Applications: Imaging Chair: NN*

- High resolution X-ray imaging at synchrotron and XFEL (Jiang Huaidong from STU)
- Activities of XFEL-based structural biology studies in China (*Jianhua He*, SINAP)
- 4D visualization of ultrafast lattice deformation in solids, (Jianbo Hu - CAEP)
- SPB/SFX instrument and imaging applications, (Johan Bielecki, XFEL)

**17:00** *Part V: Science Applications: Matter under extreme conditions (Chair Tom Cowan)*

- Probe structural dynamics at dynamic extremes with XFEL: Opportunities and challenges (Sheng-Nian Luo, The Peac Institute of Multiscale Sciences, Chengdu)
- Application of RIXS in high pressure condensed matter (Yang Ding –HPSTAR, Center for High Pressure Science & Technology Advanced Research)
- Intense laser pulses with magnetized plasma, (Zhengming Sheng SJTU (Shanghai Jiao Tong University))
- WDM research in CAEP (Zhang Ping)

**18:30 End Parallel Session IIb**

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**19:00 Dinner / BBQ (at DESY)**



## **Fri, 22 June 2018: FEL S&T Workshop**

### **(Location: CSSB Auditorium)**

#### **9:00 Session IV: Detectors and Diagnostics (CSSB Auditorium)**

*Talks are 15' + 5' discussion*

*Chair: NN, DESY/European XFEL*

- Advanced photon diagnostics developments for High-repetition rate XFELs (J. Gruenert, XFEL)
- Detector developments at DESY (H. Graafsma, DESY )
- Detector commissioning/developments at European XFEL (M. Kuster, XFEL)
- Detector development at SINAP/STU (tbd)
- Detector development at IHEP (Jiang Xiaoyshan)
- Hard X-ray sensor design (CdZnTe) (Xu Yadong from Northwestern University)

#### **11:00 Coffee Break (20')**

#### **11:20 Session V: Data Management Acquisition & Control (CSSB Auditorium)**

*Talks are 15' + 5' discussion*

*Chair: NN, China*

- Fast Data Acquisition and Near-Real time Data Analysis at XFEL facilities (S. Brockhauser, XFEL)
- SIMEX experiment simulations and future plans (Carsten Fortmann-Grote, XFEL)
- DataXpress (Anton Barty)
- Theory and Data science applications in coherent X-ray source: material structural phase transition (Ping Huai ShanghaiTech Univ./SINAP)
- IT&DM plan for SCLF (tbd)

#### **13:00 Lunch Break**

#### **14:00-16:00 Poster Session & Coffee**

*Poster area will be available for posters- CSSB auditorium reserved on DESY campus*

*Possible posters:*

- mid-term strategy of European XFEL
- European XFEL: SPB and FXE first results
- Accelerator development at TSU
- Damage and the transient heat loading of the optic elements (SINAP and XFEL)
- GaAs sensor development (CAEP)



- 3D structure sensor design (Xiangtan University)
- 3D structure – sample environment
- Data processing (BCSRC)
- Researches and experimental proposals  
Biology, physics, chemistry, material, HEDP, WDM, etc.

#### **16:00 Session VI: Summary, Discussion and Closing (CSSB AUDITORIUM)**

*Chairs: NN, European XFEL, China*

- Summary reports from Parallel sessions IIa, IIb (60')
  - Accelerators, Undulator, THz-Source (30')
  - Science Applications (30')
- Plenary Discussions (30'): *beyond the science addressed at European XFEL and at SCLF*
  - New scientific cases and technology needed to address it (Accelerator, Detector, Undulators, Optics, various science field...)
  - Next Steps
- Closing (10')

#### **17:40 Session VII: Collaboration meeting (Location: tbd)**

*(CLOSED session with representatives from DESY, European XFEL, SINAP, CAEP, STU, IHEP, etc.)*

- DESY-SINAP Joint lab
- PhD exchange program
- Action plans for the collaboration topics beyond the Joint Lab
- Chinese FEL Hub

#### **18:40 Light Dinner for the Members of Collaboration Meeting**