



Contribution ID: 1433 Contribution code: THPM012

Type: **Poster Presentation**

## Design and Thermomechanical Calculation of High-heat-load Absorber in WALS Storage Ring

*Thursday, 11 May 2023 16:30 (2 hours)*

Wuhan Advanced Light Source (WALS) is a fourth-generation synchrotron radiation facility with 1.5 GeV designed energy and 500 mA beam current. The high-heat-load absorber is designed to protect downstream ultrahigh-vacuum chambers from overheating. It is the only heat mask component to absorb large amount of synchrotron radiation (bending magnet) in the storage ring. This presentation is focused on the design and thermal-mechanical calculations of the absorber. Thus, the Synrad software which is developed by CERN is used to investigate the distribution of the synchrotron radiation and the power density on the designed absorber. And the Finite Elements Analysis (FEA) calculation will show the distribution of the thermal and the stress on the absorber body. The calculation results indicate that the designed absorber is suitable the absorption of the synchrotron radiation generated by the WALS.

### Funding Agency

Work supported by the Key R&D Project of Hubei Provincial Department of Science and Technology, No. 2021AFB001.

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

**Primary author:** LI, Jian (Wuhan University)

**Co-author:** WEI, Geng (Wuhan University)

**Presenter:** LI, Jian (Wuhan University)

**Session Classification:** Thursday Poster Session

**Track Classification:** MC7: Accelerator Technology and Sustainability: MC7.T31: Subsystems, Technology and Components, Other