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Chanki Lee*, Hee Young Kwon**, Nam Jun Kim*, Han Gyu Yoon*, Chiho Song*, Doo Bong Lee*, Jun Woo Choi**, Young-Woo Son***, Changyeon Won*
*(*Kyung Hee University, **Korea Institute of Science and Technology, ***Korea Institute for Advanced Study)*

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Sung Beak Kim*, Hyunkyung Choi**, Chul Sung Kim**
*(*Konyang University, **Kookmin University)*

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J.W. Lee, Chunghee Nam
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Howon Lee, Kyung Ik Sim, Hyunjun Shin, Y. J. Choi, Jae Hoon Kim
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Jae Yeon Seo*, Hyunkyung Choi*, Young Rang Uhm**, Gwang Min Sun**, Chul Sung Kim*
*(*Kookmin University, **Korea Atomic Energy Reasearch Institute)*

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InHak Lee*, Hyuk Jin Kim*, Byoung Ki Choi*, MinJae Kim*, Kyeong Jun Lee**, Seo Hyoung Chang**, Hu Young Jeong***, Younghak Kim****, Suyoun Lee*****, Young Jun Chang*
*(*University of Seoul, **Chung-Ang University, ***Ulsan National Institute of Science of Technology, ****Pohang Accelerator Laboratory, *****Korea Institute of Science and Technology)*

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Kwangyong Choi*, Jaena Park*, Yugo Oshima**
*(*Chung-Ang University, **Rikagaku Kenkyusho)*

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Yoonui Kim*, Jaesuk Kwon**, Hee-Kyeong Hwang**, Indra Purnama**, Chun-Yeol You**
*(*Korea Advanced Institute of Science and Technology, **Daegu Gyeongbuk Institute of Science and Technology)*

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Sooseok Lee*, Hee-Sung Han*, Myeonghwan Kang*, Hye-Jin Ok*, Mi-Young Im**, Ki-Suk Lee*
*(*Ulsan National Institute of Science and Technology, **Lawrence Berkeley National Laboratory)*

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Thi Nga Do*, Hayoung Ko**, Soo Min Kim**, Tae Hee Kim*
*(*Ewha Womans University, **Korea Institute of Science and Technology)*

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Huimin Jeong*, Changsoo Kim**, Dong-Ok Kim**, Jihee Jun***, Younghak Kim****, Wondong Kim**
*(*Chonbuk National University, **Korea Research Institute of Standards and Science, ***Sookmyung Women's University, ****Pohang Accelerator Laboratory)*

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Changjin Yun*, Mingu Kim*, Jiho Kim*, Kungwon Rhie*, Byungchan Lee**
*(*Korea University, **Inha University)*

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Seungha Yoon
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Ly Pham Ngoc Luu, Gyung-Min Choi
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Kyung-Hun Ko, Gyung-Min Choi
(Sungkyunkwan University)

TUE-SM19-480 **Time-resolved observation of precessional motion of the magnetization vector driven by spin-orbit torque**
Young-Gwan Choi, Gyung-Min Choi
(Sungkyunkwan University)

Magnetic structure and properties of Iron Sulfide compound by Mössbauer Spectroscopy

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The magnetic hyperfine structure and magnetic properties of FeS studied by X-ray diffractometer (XRD), vibrating sample magnetometer (VSM), and Mössbauer spectroscopy. The XRD pattern of FeS showed NiAs hexagonal structure with space group *P*-62*c*, *P*63/*mmc*, and *P*63/*mc*. The hysteresis loop with the maximum applied field of 15 kOe was measured at room temperature using VSM, and the saturation magnetization (M_s) and coercivity (H_c) values were found to be 9.28 emu / g and 210.21 Oe. The temperature-dependence of the zero-field-cooled (ZFC) and field-cooled (FC) curves were examined at 100 Oe from 4.2 to 295 K. Below 280K, The ZFC Curve was observed Antiferromagnetic behavior. It was shown that α-transition is started over 280 K in FeS compound. The Mössbauer spectra of FeS were taken at various temperatures ranging from 4.2 to 295 K, and the spectra were analyzed in 2-sets of sextets containing *A*-site, *B*-site, and *C*-site at all temperature ranges. The charge state was determined to be ferrous(Fe^{2+}), ferric(Fe^{3+}) according to the isomer shift, and the Curie temperature (T_C) was found to be 630 K.