

RESEARCH ARTICLE

Magnetic properties and critical behavior of quasi-2D layered Cr_4Te_5 thin film

Hao Liu,^{1,2} Jiyu Fan,^{1,2,†} Huan Zheng,^{1,2} Jing Wang,^{1,2} Chunlan Ma,³ Haiyan Wang⁴, Lei Zhang,⁵ Caixia Wang,⁶
Yan Zhu,^{1,2} Hao Yang^{1,2,‡}

¹ Department of Applied Physics, College of Physics, Nanjing University of Aeronautics and Astronautics, Nanjing 211106, China

² Key Laboratory of Aerospace Information Materials and Physics (NUAA), MIIT, Nanjing 211106, China

³ Jiangsu Key Laboratory of Micro and Nano Heat Fluid Flow Technology and Energy Application, School of Mathematics and Physics, Suzhou University of Science and Technology, Suzhou 215009, China

⁴ School of Materials Engineering, Purdue University, West Lafayette, IN 47907, USA

⁵ High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei 230031, China

⁶ College of Physics Science and Technology, Yangzhou University, Yangzhou 225002, China

Corresponding authors. E-mail: †jiyufan@nuaa.edu.cn, ‡yanghao@nuaa.edu.cn

[Received June 25, 2022; accepted October 3, 2022](#)

Supporting Information

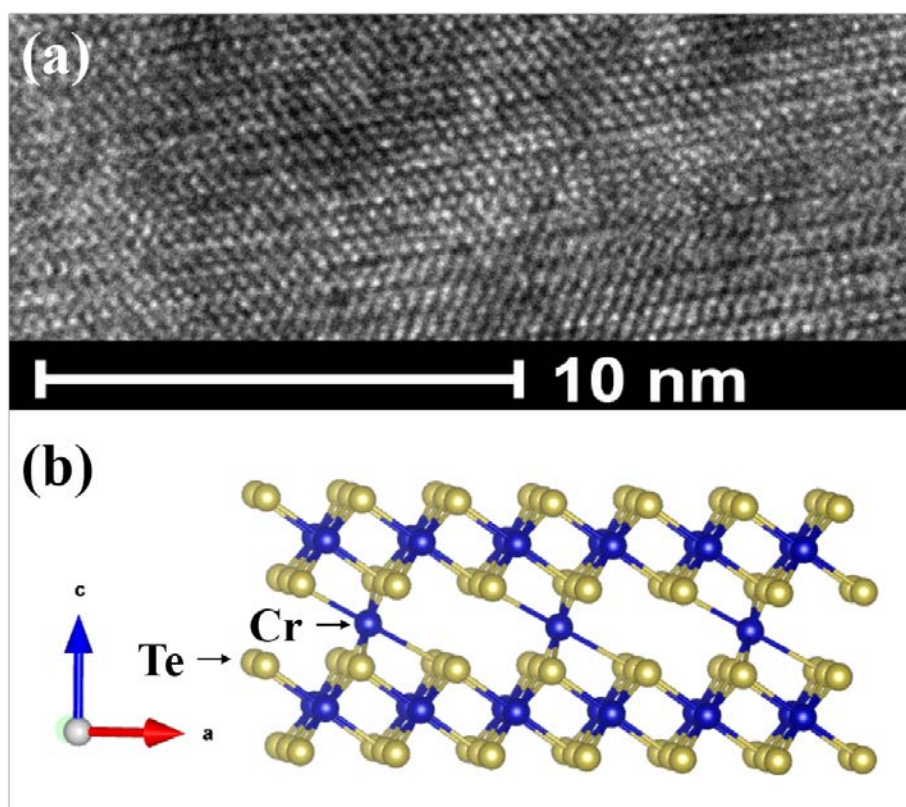


Fig. S1(a) Locally magnified high-resolution TEM image of Cr_4Te_5 . (b) Schematic diagram of the crystal structure of Cr_4Te_5 .

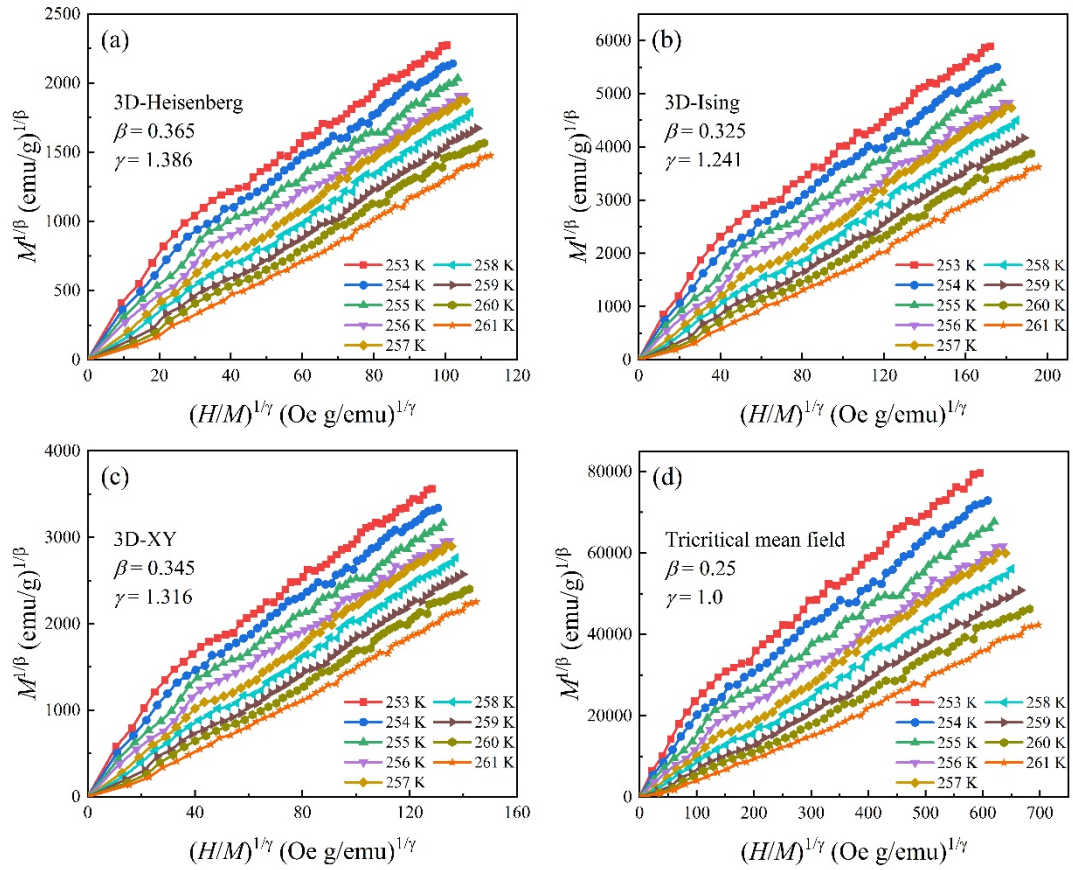


Fig. S2 The Modified Arrott plots [$M^{1/\beta}$ vs. $(H/M)^{1/\gamma}$] with the critical exponents of (a) 3D-Heisenberg model, (b) 3D-Ising model, (c) 3D-XY model, and (d) Tricritical mean field model.

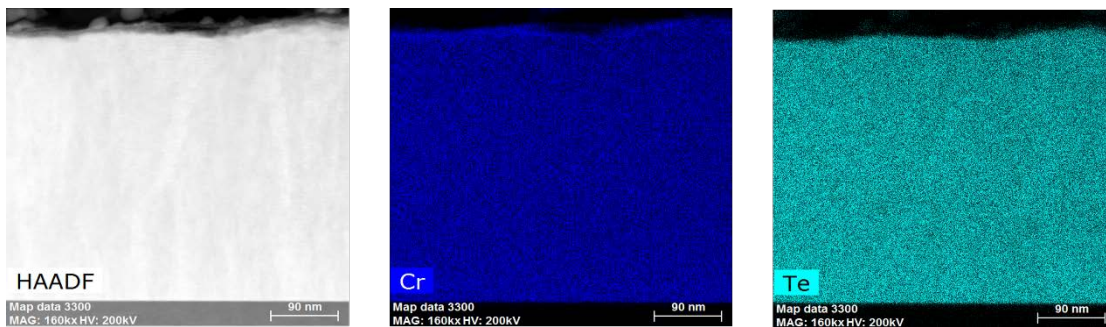


Fig. S3 HAADF-STEM image, EDS mapping of Cr and Te element (Cr_4Te_5 and Al_2O_3 interface of another sample).