

## Antiferromagnetic semiconductor nature in GeS<sub>2</sub> monolayer doped with Mn and Fe transition metals

Vo Van On,<sup>1</sup> Huynh Thi Phuong Thuy,<sup>1</sup> J. Guerrero-Sanchez,<sup>2</sup> and D. M. Hoat<sup>3,4,\*</sup>

<sup>1</sup>Center for Forecasting Study, Institute of Southeast Vietnamese Studies, Thu Dau Mot University, Binh Duong Province, Viet Nam

<sup>2</sup>Universidad Nacional Autónoma de México, Centro de Nanociencias y Nanotecnología, Apartado Postal 14, Ensenada, Baja California, Código Postal 22800, Mexico

<sup>3</sup>Institute of Theoretical and Applied Research, Duy Tan University, Ha Noi 100000, Viet Nam

<sup>4</sup>Faculty of Natural Sciences, Duy Tan University, Da Nang 550000, Viet Nam

\*Corresponding author: [dominhhoat@duytan.edu.vn](mailto:dominhhoat@duytan.edu.vn)

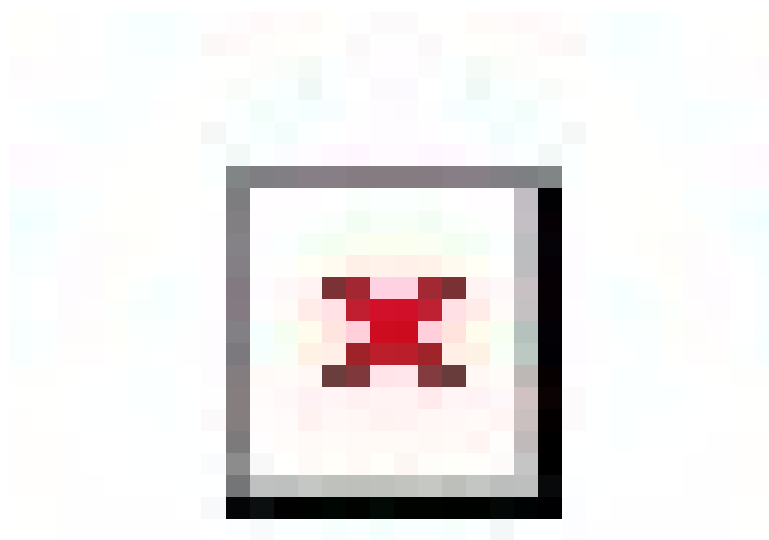


Figure S1: Spin-polarized band structure (Horizontal orange line: The Fermi level is set to 0 eV; Black energy curves: spin-up; Red energy curves: spin-down) of V<sub>S</sub> system (GeS<sub>2</sub> monolayer with single S vacancy).