Supplementary Information

Formation of MoTe$_2$ Based Schottky Junction Employing Ultra-low and High Resistive Metal Contacts

Sikandar Aftab$^a$, Muhammad Waqas Iqbal$^b$*, Amir Muhammad Afzal$^a$, M. Farooq Khan$^a$, Muhammad Waqas Iqbal$^b$*, Ghulam Hussain$^b$, Hafiza Sumaira Waheed$^b$ Muhammad Arshad Kamran$^c$

$^a$Department of Physics & Astronomy and Graphene Research Institute, Sejong University, Seoul 05006, Korea
$^b$Department of Physics, Riphah Institute of Computing and Applied Sciences (RICAS), Riphah International University, 14 Ali Road, Lahore, Pakistan
$^c$Department of Physics, College of Science, Majmaah University, P.O. Box no. 1712, Al-Zulfi 11932, Saudi Arabia.

E-mail: waqas.iqbal@riphah.edu.pk

(a)

![Image](image_url)

(b)

![Image](image_url)
**Figure S1.** (a) Typical AFM image of p-MoTe$_2$ Schottky junction on SiO$_2$/p$^+$ - Si substrate. Corresponding step height profile from the AFM lines scan as shown. The p-MoTe$_2$ flakes have a thickness of ~8 nm.

**Figure S2.** Transfer characteristics at different temperatures with Cr/Au metal contacts.

**Figure S3.** Raman spectra of p-MoTe$_2$ nano-flakes.