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Point-contact spectroscopy on the 3-Dimensional Dirac Semimetal Cd_3As_2 GOUTAM SHEET, ABHISHEK GAURAV, Indian institute of Science Education and Research, Mohali, GOHIL SINGH THAKUR, ZEBA HAQUE, Department of Chemistry, Indian Institute of Technology, New Delhi, ASHOK KUMAR GANGULI, Institute of Nano Science & Technology, Mohali, LEENA AGGARWAL, Indian institute of Science Education and Research, Mohali — The three dimensional (3D) Dirac semi-metals exist close to topological phase boundaries. Therefore, in principle, it should be possible to drive them into exotic new phases by breaking certain symmetries. We will discuss point-contact spectroscopic measurements on the 3D Dirac semi-metal Cd_3As_2 using several normal metallic tips. We have found that the mesoscopic point-contacts between elemental normal metals (like silver (Ag), platinum (Pt) and gold (Au)) and Cd_3As_2 exhibit signatures of certain exotic new phases. The possible origin of such phases in the confined region on Cd_3As_2 will also be discussed.

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