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# **Band dispersion within pristine InBi crystal**

L. Nicolai<sup>1</sup>, J. Minár<sup>1</sup>, M. C. Richter<sup>2,3</sup>, O. Heckmann<sup>2,3</sup>, M. Fanciulli<sup>2,3</sup>, L. Nagi Reddy,<sup>2,3</sup>  
G. Bell<sup>4</sup>, R. Haria<sup>4</sup>, J.-M. Mariot<sup>5</sup> and K. Hricovini<sup>2,3</sup>

1) University of West Bohemia, Univerzitní 8/2732, 301 00 Plzeň, Czech Republic

2) Laboratoire de Physique des Matériaux et des Surfaces, CY Cergy Paris Université, 95031 Cergy-Pontoise, France

3) Université Paris-Saclay, CEA, CNRS, LIDYL, 91191 Gif-sur-Yvette, France

4) Department of Physics, University of Warwick, Coventry, CV4 7AL, UK

5) Sorbonne Université, CNRS, Laboratoire de Chimie Physique–Matière et Rayonnement, 75005 Paris, France

InBi has been theoretically analysed for many years as a semi-metal showing a stable phase within the PbO structure thanks to spin-orbit coupling forces<sup>[1,2,3]</sup>. Regrettably, this alloy system remains not well-known on the experimental side: reports of grown ordered crystals are rare<sup>[4,5]</sup>. We here present a thorough experimental and *ab initio* theoretical analysis on InBi(001).

The crystal was grown using the Bridgman–Stockbarger technique. InBi consists of In layers sandwiched between Bi monolayers, with weak Van der Waals bonds amid the resulting trilayers. The InBi crystal was cleaved *in situ* in order to obtain a clean and flat surface suitable for angle-resolved photoemission measurements.

The SPR-KKR package<sup>[6,7]</sup>, based on the Dirac equation, which fundamentally includes relativistic effects, was used for the theoretical analysis and clearly underlines the influence of the surface termination.

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