

## <sup>31</sup>K

The discovery of <sup>31</sup>K was reported in 2019 by Kostyleva et al. in “Towards the Limits of Existence of Nuclear Structure: Observation and First Spectroscopy of the Isotope <sup>31</sup>K by Measuring Its Three-Proton Decay” (2019Ko18). A secondary beam of 620 MeV/nucleon <sup>31</sup>Ar was produced from a primary 885 MeV/nucleon <sup>36</sup>Ar beam at the SIS-FRS facility at GSI and impinged on a 27-mm thick <sup>9</sup>Be target. <sup>31</sup>K was populated in charge-exchange reactions and was identified in the second half of the FRS by reconstructing the reaction products: <sup>28</sup>S and three protons. “The energies of the previously unknown ground and excited states of <sup>31</sup>K have been determined. This provides its 3p separation energy value  $S_{3p}$  of  $-4.6(2)$  MeV.”

Adapted from reference (2023Th03)

2019Ko18 D. Kostyleva, I. Mukha, L. Acosta, E. Casarejos *et al.*, Phys. Rev. Lett. **123**, 092502 (2019).

2023Th03 M. Thoennessen, Int. J. Mod. Phys. E **32**, 2330001 (2023).

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