

## **<sup>30</sup>F**

<sup>30</sup>F was first reported by Kahlbow et al. in “Magicity versus superfluidity around <sup>28</sup>O viewed from the study of <sup>30</sup>F” (2024Ka32). A 235 MeV/nucleon secondary <sup>31</sup>Ne beam was produced at the Radioactive Isotope Beam Factory (RIBF) of the RIKEN Nishina Center by fragmenting a 345 MeV/nucleon <sup>48</sup>Ca beam on a 15mm thick Be target and selected with the BigRIPS fragment separator. <sup>30</sup>F was then populated in one-proton removal reaction in the MINOS liquid hydrogen target and identified via invariant mass spectroscopy where <sup>29</sup>F fragments were identified with the SAMURAI spectrometer and neutrons were measured with the segmented plastic-scintillator detectors of the NeuLAND demonstrator and NEBULA. “The mass and thus one-neutron-separation energy of <sup>30</sup>F has been determined to be  $S_n = -472 \pm 58(\text{stat.}) \pm 33(\text{sys.})$  keV from the observation of its neutron decay spectrum.”

The instability of <sup>30</sup>F had been demonstrated in 1999 by Sakurai et al. (1999Sa06).

1999Sa06 H. Sakurai, S. M. Lukyanov, M. Notani, N. Aoi *et al.*, Phys. Lett. B **448**, 180 (1999).

2024Ka32 J. Kahlbow, T. Aumann, O. Sorlin, Y. Kondo *et al.*, Phys. Rev. Lett. **133**, 082501 (2024).

Please cite this abstract as: “FRIB Nuclear Data Group, *Discovery of Nuclides Project*, Isotope Database, doi:[10.11578/frib/2279152](https://doi.org/10.11578/frib/2279152)”