Dmitryivanovite $CaAl_2O_4$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As ~10 μm subhedral grains.

Physical Properties: *Cleavage*: n.d. *Tenacity*: n.d. *Fracture*: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = n.d.

Optical Properties: Transparent. *Color*: Colorless in transmitted light. *Luster*: n.d. *Optical Class*: Birefringent.

Cell Data: *Space Group*: $P2_1/c$. $a = 7.95$ $b = 8.62$ $c = 10.25$ $\beta = 93.10°$ Z = 12 Confirmed by concurrence of electron backscatter diffraction pattern with that of synthetic equivalent.

X-ray Powder Pattern: Calculated pattern.
3.018 (100), 2.92 (83), 2.882 (52), 2.505 (46), 2.559 (42), 2.371 (31), 1.888 (29)

Chemistry:

	(1)
SiO_2	0.12
Al_2O_3	64.34
MgO	<0.06
CaO	35.52
TiO_2	0.09
Total	100.07

(1) Northwest Africa 470 (NWA470) CH3 chondrite meteorite; average electron microprobe analysis; corresponds to $Ca_{1.000}(Al_{1.993}Si_{0.003}Ti_{0.002})_{1.998}O_4$.

Polymorphism & Series: A high-pressure polymorph of $CaAl_2O_4$.

Occurrence: In a Ca,Al-rich inclusion (CAI) in a CH3 chondrite meteorite.

Association: Grossite, melilite, perovskite, gehlenite.

Distribution: From the Northwest Africa 470 (NWA470) CH3 chondrite meteorite.

Name: Honors *Dmitriy* A. *Ivanov* (1962-1986), a geologist, mineralogist, and petrologist who died tragically on a field expedition to study igneous rocks in the Caucasus Mountains.

Type Material: Meteorite collection, Russian Academy of Sciences, Vernadsky Institute, Moscow, Russia.

References: (1) Mikouchi, T., M. Zolensky, M. Ivanova, O. Tachikawa, M. Komatsu, L. Le, and M. Gounelle (2009) Dmitryivanovite: A new high-pressure calcium aluminum oxide from the Northwest Africa 470 CH3 chondrite characterized using electron backscatter diffraction analysis. Amer. Mineral., 94, 746-750.