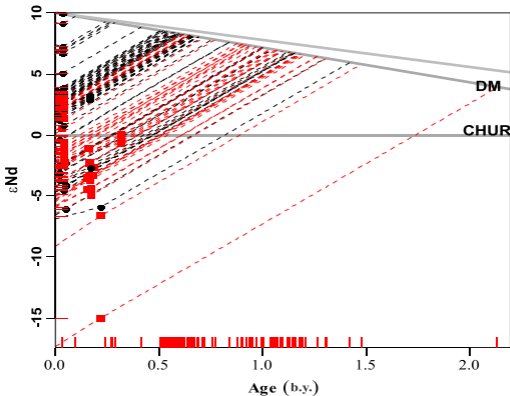


# Timing production of Iranian continental crust via Nd isotope evidences

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One of the principal uses of the Sm–Nd model age method is to determine what are often called ‘crustal-formation’ or ‘crustal-extraction’ ages [1]. It also provides the opportunity to see back through erosion, sedimentation, high-grade metamorphism and even crustal melting events, which usually reset other dating methods. Mafic and ultramafic rocks cannot be used to determine accurate crustal-formation ages because they have Sm/Nd evolution lines sub-parallel to the chondritic evolution line. In contrast, most granitoid rocks offer much greater resistance to re-setting. 107 Nd isotopic analyses from Iran were used to determine crust-formation ages and its timing growth and initial Nd isotope ratios of mantle during crust-formation (Fig. 1). These data approximately define the boundaries of large segments of continental crust that were formed from the mantle during ~.7 to 1.5 b.y. ago. The continental crust of Iran consists of several zones including Sanandaj–Sirjan, Urumieh-Dokhtar, Lut Block, Alborz and Sistan Suture zone. Two-stage mantle model age reveal that these zones might formed not more than 2.2 b.y ago; in which Sanandaj–Sirjan samples (1 – 1.3 b.y ago), Urumieh-Dokhtar (0.7- 1.3 b.y ago), Lut Block (0.6 - 1 b.y ago) and Alborz (0.65- 2.2 b.y ago).



**Fig. 1:** Nd isotopic evolution paths for Iran samples. Red squares are granite; black circles are gabbro.

[1] Nelson & DePaolo (1985) *GEOL SOC AM BULL* **96**, 746-754.