

Supplementary material:

*Geochronological data used in the study*

NN	Pegmatite field or belt names/geological and administrative location	Geochronology (Ma)	Used for dating substances <sup>1,2</sup> and source rocks <sup>3</sup>	Extrapolation number <sup>4</sup>	Most common classes of mineralized pegmatites in a region of the extrapolation <sup>5</sup>	References: geochronology / pegmatite and regional geology descriptions
1.	Mpuluzi / Barberton GB <sup>6</sup> , Kaapvaal craton, RSA & Swaziland	3113 ± 2.4 3105 ± 3	z, g(+) z+tt, g(+)	2	RM	Westraat et al., 2005; Kamo & Davis, 1994 / Maphalala & Trumbull, 1998
2.	New Consort (Nelspruit) / Barberton GB, Kaapvaal craton, RSA	3106 +4/-3	z+tt, g (+)	1	RM	Kamo & Davis, 1994 / Harris et al., 1995
3.	Sinceni / Ancient Gneiss Complex, Kaapvaal craton, Swaziland	3074 ± 3 2990 ± 43	z, g (+); wr (Rb/Sr), g (+)	2	RM	Maphalala & Kröner, 1993; Trumbull, 1993 / Trumbull, 1995
4.	Ivisaartoq / Ivisaartoq GB, Geenland craton, Greenland	2963 ± 12	z, g (-)	2	RM	Friend and Nutman, 2005/ Secher et al., 2008
5.	Tabba Tabba, Pilgangoora, Hillside / Pilbara craton, Australia	2886 ± 21; 2879 ± 5; 2877 ± 20	c, p tn, p c, p	6	RM	Kinny, 2000 / Sweetapple & Collins, 2002
6.	Wodgina, Strelley, Molyella / Pilbara craton, Australia	2829 ± 11 2836 ± 26 2839 ± 16	tn, p c, p c, p	12	RM	Kinny, 2000 / Sweetapple & Collins, 2002
7.	Murchison / Murchison GB, Kaapvaal craton, RSA	2848±58 2820±38	z, p z, g (+)	2	RM	Poujol & Robb, 1999; Poujol, M., 2001 / Boelema & Hira, 1998
8.	Pakeagama Lake / North Spirit	2670±5	tn, p	2	RM	Smith et al., 2004 / Breaks et al., 1999

<sup>1</sup> Minerals used for geochronological dating: ab - albite, ap - apatite, bt - biotite, c - cassiterite, hb - hornblende, gd - gadolinite, gt - garnet, kf - K-feldspar, lp - lepidolite, mb - molybdenite, m - monazite, ms - muscovite, tr - thorite, tn - tantalum-niobates, tt - titanite, ur - uraninite, wr - whole rock, z - zircon, xt - xenotime;

<sup>2</sup> The data obtained from the "U-(Th)-Pb" system investigations are not specified, otherwise - specified;

<sup>3</sup> p - pegmatite, g(+) - supposed fertile granitoids inside a pegmatite field, g(-) - granitoids of the same magmatic suite (complex) as supposed fertile ones but outside pegmatite fields;

<sup>4</sup> A number of pegmatite fields in the same province (belt) or some its part which are thought to be of the same age according to established geological data.

<sup>5</sup> Pegmatites: FRA - feldspar - rare element in abyssal rocks, MS - muscovite, MSRM - muscovite-rare-metal, RM - rare-metal, RMMI - rare-metal - miarolitic, MI - miarolitic;

<sup>6</sup> GB - greenstone belt.

9.	Lake GB, Superior craton, Canada Mavis Lake group / Sioux Lookout GB, Superior craton, Canada	2665±8	tn, p	3	RM	Smith et al., 2004 / Breaks & Moore, 1992
10.	Separation Rapids group / Separation Lake GB, Superior craton, Canada	2644±7	tn, p	2	RM	Smith et al., 2004 / Tindle & Breaks, 1998
11.	Bernic Lake / Bird River GB, Superior craton, Canada	2640±7	tn, p	15	RM	Baadsgaard & Černý, 1993 / Černý, P., 2005
12.	Preissac-Lacome / Abitibi GB, Superior craton, Canada	2639±2	m, p	6	RM	Ducharme et al., 1997 / Boily et al., 1990
13.	Westonia-Holleton / Southern Cross GB, Yilgarn craton, Australia	2640 ± 11	ab+gt (Sm/Nd), p	1	RM	Kent et al., 1996 / Fetherston 2004
14.	Dalgaranga-Niobe / Murchison Province, Yilgarn craton, Australia	2641 ± 5	z, g (+)	3	RM	Wiedenbeck & Watkins, 1993 / Fetherston 2004;
15.	Corinthia-Nevoria (Mount Hope) / Southern Cross GB, Yilgarn craton, Australia	2620 ± 6 2626 ± 18	z, p ab+gt (Sm/Nd), p	3	RM	Bloem et al., 1995; Kent et al., 1996/ Bloem et al., 1995; Witt, 1992
16.	Mount Thirsty-Chalice / Norseman-Willuna GB, Yilgarn craton, Australia	2622 ± 13	tt, p	1	RM	Bucci et al., 2004 / Aheysinghe et al., 2002; Witt, 1992
17.	Mount Deans-Scotia / Norseman-Willuna GB, Yilgarn craton, Australia	2620 ± 36	ab+gt (Sm/Nd), p	1	RM	Kent et al., 1996 / Fetherston 2004
18.	Londonderry-Spargoville / Norseman-Willuna GB, Yilgarn craton, Australia	2602 ± 11	z, g (-)	3	RM	Hill et al., 1992 / Fetherston 2004; Witt, 1992
19.	Bikita / Zimbabwe craton, Zimbabwe	2601 ± 14	z, g (-)	6	RM	Jelsma et al., 1996 / Martin, 1964; Von Knorring & Condliffe, 1987
20.	Yellowknife-Beaulieu / Yellowknife GB, Slave craton, Canada	2596 ± 2	m, g (+)	9	RM	Davis & Bleeker, 1999 / Meintzer et al., 1984
21.	Amareshwar / Dharwar craton, India	2532 ± 3	tt, g (-)	3	RM	Mishra B. & Pal N., 2008 / Devaraju et al., 1990.
22.	Greenbushes / Donnybrook-Bridgetown zone, Yilgarn craton, Australia	2527 ± 2	z, p	3	RM	Partington et al., 1995 / Partington et al., 1995

23.	Vasin Mylk / Kolmozero-Voron'ya GB, Kola craton, Russia	2518 ± 9	tn, p	3	RM	Kudryashov et al., 2004 / Zagorsky et al., 1997
24.	Volta Grande / Nazareno-Rio das Mortes GB, Sao Francisco craton, Brazil	2121 ± 7	z, g (+)	2	RM	Ávila, 2000 / Heinrich, 1964; Lagache & Quemencur, 1997
25.	North Guiana pegmatite belt / Marowijne-Paramaca GB, Guiana shield, Surinam & French Guiana	2083 ± 8	z, g (-)	8	RM	Vanderhaeghe et al., 1998 / Kolotukhina et al., 1968
26.	Saraya - Gamaye / Eburnean orogenic belt, Senegal & Mali & Cote d'Ivoire	2079 ± 2	z, g (+)	6	RM	Hirdes & Davis, 2002 / Varlamoff, 1972
27.	Kokobin / Eburnean orogenic belt, Ghana	2079.6 ± 3.1	tn, p	3	RM	Melcher et al., 2008 / Chalokwu et al., 1997
28.	Tazenakht / Basement Zenaga complex of the Anti-Atlas orogen, Morocco	2037 ± 9	z, g (+)	1	RM	Thomas et al., 2002 / Bouladon et al., 1950
29.	Central Aldan pegmatite belt / Nimnyr block of the Aldan shield, Russia	1901 ± 1	z, g (-)	3	FRA	Frost et al., 1998 / Smakin, 1958; Roizenman, 1998
30.	Strel'na / Strel'na terrain of the Baltic shield, Russia	1896 ± 10	z, p	4	MSRM	Daly et al., 2006 / Batieva et al., 1978
31.	Chupa-Louhi pegmatite belt / Belomorian belt of the Baltic shield, Russia	1875 ± 5	z, p	31	MS, MSRM, FRA	Bibikova et al., 2004 / Sal'ye & Glebovitsky, 1976
32.	Kodar-Chara / Chara-Olyokma block of the Aldan shield, Russia	1876.5 ± 4.2	z, g (+)	3	MSRM, RM	Larin et al., 2000 / Gordienko et al., 1979
33.	Gol'tsovoye / East Sayan inlier of the Siberian platform, Russia	1873.1 ± 2.5	z, g (+)	10	RM, MSRM, MS	Levitskii et al., 2002 / Makrygina et al., 1990; Zagorsky et al., 1997
34.	Richenda River / King Leopold orogen, Australia	1858 ± 20	z, g (-)	1	RM	Griffin et al., 2000 / Fetherston 2004
35.	Utö & Norö / Bergslagen area of the Svecofennian province, Sweden	1852 ± 4	z, g (+)	1	RM	
36.	Utö & Norö / Bergslagen area of the Svecofennian province, Sweden	1821 ± 16	tn, p	2	RM	Romer & Smeds, 1994 / Smeds & Černý, 1989
37.	Athabasca round-basin area / Hearne province, Canada	1816 ± 3	tn, p	2	RM	
36.	Athabasca round-basin area / Hearne province, Canada	1811 ± 3	z, g (+)	8	FRA	Annesley et al., 2000 / Annesley & Madore, 1999
37.	Kemiö / South-Finland zone of	1807.0 ± 2.9	tn, p	6	RM	Lindroos et al., 1996 / Lindroos et al., 1996

	the Svecofennian province, Finland	1802.9 ± 1.3	tn, p			
38.	Reboda / Bergslagen area of the Svecofennian province, Sweden	1803 ± 1	tn, p	1	RM	Romer & Smeds, 1997 / Romer & Smeds, 1997
39.	Kolsva / Bergslagen area of the Svecofennian province, Sweden	1801 ± 4	tn, p	2	FRA	Romer & Smeds, 1997 / Romer & Smeds, 1997
40.	Flin Flon – Kiskeynew area / Flinn Flon GB of the Trans-Hudson orogen, Canada	1801 ± 3 1799 ± 3	m, g (-); m, g (-)	3	RM, FRA	Ansdell & Norman, 1995 / Černý, 1990
41.	Orrvik, Lill-Gullberget / Bothnian Basin of the Svecofennian province, Sweden	1803 ± 27 1800.4 ± 3.6 1795 ± 6	tn, p tn, p tn, p	4	RM	Romer & Smeds, 1994; Romer & Smeds, 1997 / Romer & Smeds, 1994; Romer & Smeds, 1997
42.	Gruvdalen, Skruppetorp & Stora Vika / Bergslagen area of the Svecofennian province, Sweden	1794 ± 2 1795 ± 2 1786.4 ± 1 1785 ± 3	tn, p tn, p tn, p tn, p	6	FRA, RM	Romer & Smeds, 1994; Romer & Smeds, 1997 / Romer & Smeds, 1994 ; Romer & Smeds, 1997
43.	Junda / Halls Creek orogen, Australia	1788 ± 6	z, g (+)	3	RM	Page et al., 2001 / Fetherston 2004
44.	Varuträsk / Skellefteå-Luleå area of the Svecofennian province, Sweden	1782 ± 9 1775 ± 11 1765 ± 14	tn, p tn, p tn, p	2	RM	Romer & Smeds, 1994; Romer & Smeds, 1997 / Romer & Smeds, 1994; Romer & Smeds, 1997
45.	Bynoe, Shoobridge / Litchfield province, Australia	1724 ± 6	tn, p	8	RM	Worden, 2007 / Fetherston 2004; Pietsch & Clayton, 1990.
46.	Black Hills / Black Hills uplift, USA	1715 ± 7 1702.4 ± 2.5 1718 ± 22	m, g (+) ap, p z, p	7	RM	Redden et al., 1990; Krogstad & Walke, 1994; Ghosh, A.K., 2008 / Norton & Redden, 1990
47.	Boulder / Northern Yavapai sub-province, USA	1714.4 ± 4.6	z, g (+)	4	RM	Premo & Fanning, 2000 / Meeves et al., 1966
48.	Barrow Creek, Utopia / Aileron subprovince of the Arunta block, Australia	1713 ± 7	z, g (-)	2	RM	Zhao & Bennett, 1995 / Fetherston, 2004
49.	Arizona pegmatite belt / Yavapai and Mojave provinces boundary	1694 ± 14 1680 ± 8	z, g (+) z, g (+)	2	RM	Chamberlain & Bowring, 2000 / London. & Burt, 1978; Meeves et al., 1966
50.	Trout Creek / Yavapai and Mazatzal provinces boundary, USA	ca.1656	z, g (+)	4	FRA, RM	Baker & Jones, 2008 / Hanson et al., 1992
51.	Egebeck-Eurowie / Broken Hill-Eurowie block of the	1591 ± 5	z, g (-)	4	RM, MSRM	Page et al., 2005a / Lishmund, 1982; Barnes, 1988; Burton G.R., 2000

52.	Curnamona province, Australia Nellore mica belt / Eastern Ghats belt, India	1589.2 ± 4.4	z, g (-)	5	MS, MSRM	Dobmeier et al., 2006 / Makrygina et al., 1990
53.	Bimbowrie-Boolcoomata area / Olary block of the Curnamona province, Australia	1579.2 ± 1.5 1581 ± 3	z, g (+) z, g (+)	2	FRA, RM	Ludwig & Cooper, 1984; Page et al., 2005b / Ludwig & Cooper, 1984; Lottermoser & Lu, 1997; Crooks & Abbott, 2004.
54.	Forsayth area / Georgetown inlier, Australia	1550 ± 6	z, g (+)	4	RM	Black & McCulloch, 1990 / Barton, A., 2006
55.	Mica Creek-Galah Creek / Mt Isa inlier, Australia	1532 ± 7	z, p	2	RM, MSRM	Connors & Page, 1995 / Brooks & Shipway, 1960
56.	Harding / Picuris range area of the Mazatzal orogen, USA	ca. 1400 1347 ± 1 and 1341 ± 1	geol. specul. ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p	1	RM	Northrup & Mawer, 1990; Karlstrom et al., 1997 / Chakoumakos & Lumpkin, 1990; Northrup & Mawer, 1990
57.	Choma-Kamativi tin belt / Choma-Kalomo block and adjacent part of the Magondi belt, Zambia & Zimbabwe	1188 ± 11	z, g (+)	5	RM	Bulambo et al., 2004 / Rijks, H.R.P. & van der Veen, A.N., 1972
58.	Ernabella - Kulgera Hills pegmatite belt / Musgrave block, Australia	1152 ± 3	z, g (+)	4	RM, MSRM, FRA	Camacho & Fanning, 1995 / Budd et al., 2001
59.	Baringer Hill / north-eastern Llano Uplift, USA	1091 + 4/-3 1093 ± 6	z, g (+) tt, g (+)	2	RM, RMMI	Walker, 1992; Rougvie et al., 1999 / Ehlmann et al., 1964; Francis & Lange, 1999
60.	Tvedestrand-Gloserheia / Bamble zone of the Sveconorwegian belt, Norway	1094 ± 11 1060 +8/-6	xt, p tn+xt, p	2	FRA, RM	Scherer et al., 2001; Baadsgaard et al., 1984 / Baadsgaard et al., 1984
61.	Katemcy-Streeter / western Llano Uplift, USA	1070 ± 2	z, g (+)	2	MI	Rougvie et al., 1996 / Broughton, 1973
62.	Mont Laurier / Central Metasedimentary belt of the Grenville province, Canada	1054 +14/-25	z, g (+)	5	FRA, RM	Friedman & Martignole, 1995 / Černý, 1990
63.	Bancroft-Renfrew / Central Metasedimentary belt of the Grenville province, Canada	1059.2 ± 1.5 1053 ± 4 1069 ± 11	z, p mb (Re-Os), p mb (Re-Os), p	7	FRA, RM	Easton & Kamo, 2008; Lentz & Creaser, 2005; Lentz & Suzuki, 2000 / Černý, 1990; Lentz & Creaser, 2005
64.	Orust & Högsbo / Idefjorden zone of the Sveconorwegian belt, Sweden	1041.3 ± 1.6 1038.7 ± 3.4 1029.7 ± 1.4	tn, p; tn, p; tn, p	5	RM	Romer & Smeds, 1996 / Romer & Smeds, 1996
65.	Madawaska / Central Gneiss belt of the Grenville province, Canada	1017 ± 13	z, p	3	RM, FRA	Francis et al., 1999 / Černý, 1990; Francis et al., 1999

66.	Mattawa / Central Gneiss belt of the Grenville province, Canada	996.7 ± 0.8	xt, p	4	RM, FRA	Stern & Rayner, 2003 / Černý, 1990
67.	Baie Johan Beetz pegmatite district / Wakeham terrane in the northeastern Grenville province, Canada	993 ± 3	z, g (-)	3	FRA, RM	Loveridge, 1986 / Černý, 1990
68.	Adirondack-New Jersey Highlands pegmatite belt / Adirondack - New Jersey Highlands segment of the Grenville province, Canada & USA	1004 ± 3; 986 ± 4	z, p z, p	7	FRA	Volkert et al., 2005 / Grauch & Zarinsk, 1976
69.	Skuleboda / Idefjorden zone of the Sveconorwegian belt, Sweden	984.3 ± 6.4	tn, p	1	RM	Romer. & Smeds, 1996 / Romer. & Smeds, 1996
70.	Namaqualand-Tantalite Valley - Gordonia pegmatite belt / Richtersveld and Kakamas terranes of the Namaqua-Natal orogenic belt, RSA & Namibia	982.7 +5.2/-5.3	tn, p	11	RM	Melcher et al., 2008 / Hugo, 1970; Minnaar & Theart, 2006
71.	Rajasthan Mica belt / Aravalli orogen, India	967.8 ± 1.2	z, g (-)	18	MSRM, RM, FRA	Pandit et al, 2003 / Datta, 1973
72.	Kibaran pegmatite belt / Kibaran orogen, Uganda, DR Congo, Burundi & Rwanda	962 ± 2; 987 ± 6	tn, p z, g (+)	12	RM	Romer & Lehman, 1995; Johnson et al., 2005 / Varlamoff, 1972
73.	Yinnietharra (Yinnetharra) pegmatite district / Capricorn orogen, Australia	954 ± 12	m, p	3	RM	Sheppard et al., 2007 / Fetherston, 2004
74.	Riddaho / Eastern segment of the Sveconorwegian belt, Sweden	941.6 ± 1.4	tn, p	2	RM	Romer. & Smeds, 1996 / Romer. & Smeds, 1996
75.	Herefoss (Froland) / Bamble-Telemark transition zone of the Sveconorwegian belt, Norway	926 ± 8	tt+kf, g (+)	1	FRA	Andersen, 1997 / Larsen, 2002
76.	Bohus / Idefjorden zone of the Sveconorwegian belt, Sweden	922 ± 5 919 ± 6	m, p xt, p	1	FRA	Eliasson & Schöberg, 1991 / Eliasson & Schöberg, 1991
77.	Blomskog / Idefjorden zone of the Sveconorwegian belt, Sweden	915 ± 3	mb (Re-Os), p	1	FRA	Bingen et al., 2006 / Bingen et al., 2006; Černý, 1991
78.	Rymteland / Rogaland -Vest Agder zone of the	914 ± 6	ur, p	1	FRA	Pasteels et al., 1979 / Pasteels et al., 1979

79.	Sveconorwegian belt, Norway Evje-Iveland / Telemark zone of the Sveconorwegian belt, Norway	910.5 ± 1.6	gd, p	1	FRA	Scherer et al., 2001 / Larsen, 2002
80.	Bihar Mica belt / Satpura orogen, India	906 ± 11	tn, p	13	MS, MSRM, RM	Krishna et al., 2003 / Mahadevan, 1986; Ramchandran & Sinha, 1992
81.	Yenashiminskoye / Yenisei Ridge, Russia	750 ± 2	z, g (-)	1	RM	Vernikovskiy et al., 2003 / Serdyuk, 2002
82.	Kondakovskoye / Yenisei Ridge, Russia	ca. 760	ur, p	2	MSRM	Volobuev et al., 1964 / Serdyuk, 2002
83.	Eastern Brazil (Oriental) pegmatite province (1st generation) / Araçuaí orogen, Brazil	582 ± 2 573 ± 4	z, g (+) m, g (+)	15	RM, RMMI, MSRM	Nalini et al., 2000 / Bilal et al., 2000; Morteani et al., 2000
84.	Nigerian pegmatite belt / Trans- Saharan fold belt, Nigeria	547 ± 15 549 ± 11 555 ± 5	ms (Rb/Sr), p wr (Rb/Sr), p wr (Rb/Sr), p	7	RM	Küster, 1995; Matheis & Caen-Vachette, 1983; Tubosun et al., 1984 / Küster, 1990; Akintola, & Adekeye, 2008.
85.	Sri Lanka pegmatite province / Highland Complex belt, Sri Lanka	587 ± 10 550 ± 3 561 ± 26	z, g (-) z, g (-) z, p	3	FRA	Baur et al., 1991; Gottfried et al., 1956 / Dissanayake et al., 2000
86.	Kenticha field / Adola belt, Ethiopia	530 ± 2 550 ± 18	tn, p z, g (+)	3	RM	Küster D., 2007; Worku, 1996 / Küster D., 2008
87.	Madagascar pegmatite belt / Madagascar segment of the Mozambique mobile belt, Madagascar	537.6 ± 1.0 532.1 ± 5.2 540 ± 8 554 ± 34	z, g (-) z, g (-) z, g (-) m, p	9	FRA, MSRM, RM, RMMI	Kröner et al., 2000; Meert et al., 2001; Handke, 2001; Berger et al., 2006 / Besairie, 1966; Pezzotta, 2005
88.	Hoggar rare-metal province / Trans-Saharan belt, Algeria	523 ± 1 530 ± 5	z, g (+) ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), g (+)	2	RM, RMMI	Paquette et al., 1998; Cheilletz, 1992 / Varlamoff, 1972
89.	Eastern Brazil (Oriental) pegmatite province (2nd generation) / Araçuaí orogen, Brazil	520 ± 2 513 ± 8 498 ± 3 498 ± 11	z, g (+) z, g (-) m, p z, p	20	RM, RMMI, FRA	Noce et al., 2000; Söllner et al., 1991; Viana et al., 2003 / Bilal et al., 2000; Morteani et al., 2000
90.	Kerala – Tamil Nadu pegmatite province / Kerala Kondalite belt, India	513 ± 2	z, p	3	FRA, RM	Miller et al., 1996 / Menon et al., 1994
91.	Borborema pegmatite province / Seridó fold belt, Brazil	509.5 ± 2.9 514.9 ± 1.1	tn, p tn, p	9	RM, RMMI	Baumgartner et al., 2006; Beurlen et al., 2007 / Da Silva et al., 1995

92.	Damara pegmatite province (southern segment) / Damara fold belt, Namibia	528 ± 12 520 ± 10 509 ± 1 508±2	m, g (+) ur+xt+thr+z, g (+) ur, g (-) m, g (-)	12	FRA, RM, RMMI	Briqueu et al., 1980 / Berning, 1986; Diehl, 1993; Von Knorring & Condliffe, 1987
93.	Damara pegmatite province (nothern segment) / Damara fold belt, Namibia	492 ± 1	m, g (-)	10	FRA, RM, RMMI	Jung et al., 2000 / Diehl, 1993; Von Knorring & Condliffe, 1987
94.	Bohemian-Bavarian pegmatite province / Münchberg–Teplá terrane of the of the Bohemien massif, Germany & Czech Republic	482 ± 13 480 + 7/-9	tn, p z+mzt, p	5	RM	Glodny et al., 1998 / Vejnar, 1968
95.	Alto Ligonha / Nampula block of the Mozambique mobile belt, Mozambique	453 ± 17 469 ± 7 465 ± 2	z, g (+) m, p tn, p	5	RM, RMMI	Cronwright et al., 2005; Oberthür (pers. comm.), 2009 / Dias & Wilson, 2000
96.	Sierra de San Luis / Famatinian tectonic belt, Argentina	468 ± 6 470 ± 5	z, g (+)	5	RM	Stuart-Smith et al., 1999 / Sosa et al., 2002
97.	Sierra de Valle Fétil / Famatinian tectonic belt, Argentina	470 ± 5	z, g (-)	2	MSRM, RM	Pankhurst et al., 2000 / Galliski, 1994
98.	Sierra de Cachi / Famatinian tectonic belt, Argentina	467 ± 1 462 ± 1	m, g (+); m, g (-)	2	RM	Lork & Bahlburg, 1993; Lork et al., 1989 / Galliski, 1994; Galliski et al., 2001
99.	Khamar Daban / Khamar-Daban fold belt, Russia	469 ± 2	z, g (+)	3	MSRM, RM	Barash et al., 2006 / Makrygina et al., 1990
100.	Slyudyanka / Slyudyansky block of the Khamar-Daban fold belt, Russia	447.3 ± 2.4	z, p	1	FRA	Reznitskii et al., 2000 / Kalinin, 1957
101.	Zerenda / Kokchetav block, Kazakhstan	412 ± 6	wr+kf (Rb/Sr), g(+)	4	MI	Letnikov & Kostitsyn, 2002 / Zagorsky et al., 1999
102.	Walwa district / Wagga-Omeo zone of the Lahlan fold belt, Australia	419 ± 6	z, g (+)	5	RM, RMMI	Anderson et al., 1996 / Oppy et al., 1995
103.	Zealand Station / Appalachian fold belt (northern part), Canada	400.5 ± 1.2 404 ± 8	z, p m, p	1	RMMI	Beal et al., 2007 / Beal et al., 2007
104.	Brazil Lake / Appalachian fold belt (northern part), Canada	395 ± 2	tn, p	1	RM	Kontak et al., 2005 / Kontak, 2006
105.	Mama-Chuya pegmatite belt (1st generation) / Vitim-Patom fold belt, Russia	388 ± 2	z, p	12	MS	person. recent unpubl. data / Makrygina et al., 1990



106.	Oxford / Appalachian fold belt (central part), USA	370.3 ± 1.1 363 ± 2	m, g (+) m, g (+)	13	RM, RMMI	Solar et al., 1998; Smith & Barreiro, 1990 / Cameron et al., 1954
107.	Blue Ridge fields / Appalachian fold belt (southern part), USA	361 ± 2 353 ± 6	z, p z, g (+)	6	MS, MSRM	Mapes, 2002 / Maurice, 1940
108.	Piedmont pegmatite fields / Appalachian fold belt (southern part), USA	362 ± 3 366 ± 3 364 ± 2 355 ± 2	z, g (+); z, g (+) z, g (+) z, g (+)	10	RM, MSRM, RMMI	Aleinikoff et al., 2002; Mapes, 2002 / Cameron et al., 1949; Sinkankas, 1968; Horton & Butler, 1986.
109.	Sierra de Velasco / Famatinian tectonic belt, Argentina	354 ± 4 358 ± 5 350 ± 5	z, g (+) m, g (+) m, g (+)	3	RM	Söllner et al., 2007; Grosse et al., 2008 / Galliski, 1994
110.	Sierras de Cordoba / Pampean tectonic belt, Argentina	368 ± 2	z, g (+)	5	RM	Dorais et al., 1997 / Galliski, 1994; Morteani et al., 1995
111.	Mama-Chuya pegmatite belt (2nd generation) and Zhuya mica-bearing district/ Vitim-Patom fold belt, Russia	354 ± 12 325 ± 5 331 ± 1	z, g (+) z, p z, p	27	MS, MSRM	Neymark et al., 1990; person. recent unpubl. data / Makrygina et al., 1990
112.	Bohemian-Moravian-Lower Austrian pegmatite province / Moldanubicum zone of the Bohemian massif, Czech Republic & Austria	335 ± 3 337 ± 5	m, p ab+gt (Sm/Nd), p	8	RM, RMMI, MI	Novák et al., 1998; Ertl et al., 2004 / Novák et al., 2004; Ertl et al., 2004
113.	Harts Range district / Arunta inlier, Australia	325.8 ± 2.5 324 ± 3	ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p mus+wr (Rb/Sr), p	2	MS, MSRM	Célérier et al., 2006; Mortimer et al., 1987 / Joklik, 1955
114.	Sudetic pegmatite belt / Saxothuringian zone of the Bohemian massif, Poland & Czech Republic	314.1 ± 3.3 302.7 ± 3.4	z, g (+) z, g (+)	4	MI	Machowiak & Armstrong, 2007; Turniak et al., 2005 / Janeczek J., 2007; Kozłowski, A. & Sachanbiński M., 2007
115.	Central Iberian pegmatite province / Hercinian Iberian fold belt, Spain & Portugal	311 ± 1	z+m, g (+)	5	RM, RMMI	Almeida et al., 1998 / Lima & Roda-Robles, 2007
116.	Kamennaya & Tolevaya fields / SW of the Kara block of the Taimyr fold belt, Russia	304 ± 5	z, g (+)	2	MS	Pease, 2001 / Zakharov, 1975
117.	Central Kazakhstan pegmatite province / Central Kazakhstan orogen, Kazakhstan	291 ± 10 283 ± 14 280 ± 21	unspecified K/Ar, g (+) unspecif. K/Ar, g (+) unspecif. K/Ar, g (+)	25	MI	Kostitsyn, 1996 / Zagorsky et al., 1999
118.	Laghi-Valgana pegmatite belt /	281.3 ± 0.5	z, g (+)	4	MI	Schaltegger. & Brack, 2007 / Aurisicchio et al., 2001; Pezzotta et

	Serie dei Laghi zone of the Alpine fold belt, Italy	281.8 ± 1.5	z, g (+)			al., 2005
119.	Branswick pegmatite field / Avalon zone of the Appalachian fold belt in New England, USA	278 ± 1.5 272 ± 4 273 ± 6	m, g (+) z, p z, p	5	RM, RMMI	Tomascak et al., 1996 / Cameron et al., 1954; Francis, 1987
120.	Biruli pegmatite field / N of the Kara block of the Taimyr fold belt, Russia	264 ± 8	z, g (-)	1	MSRM	Vernikovskiy et al., 1998 / Zakharov, 1975
121.	Ural pegmatite province / eastern Ural fold belt, Russia	262.0 ± 7.3 272.7 ± 4.5 254 ± 5	mb (Re-Os), p mb (Re-Os), g (+) z, g (+)	15	RM, RMMI, MSRM, MS	Mao et al., 2003; Montero et al., 2000 / Ovchinnikov & Kuz'menko, 1976; Mel'nikov et al., 1975
122.	Kalba-Narym pegmatite belt / Altai fold belt, Kazakhstan	253 ± 4 245 ± 7	z, g (+) z, g (+)	6	RM, RMMI	Vladimirov et al., 2001 / Dyachkov & Maiorova, 1996
123.	Brissago / Ivrea-Verbano zone of the Alpine fold belt, Switzerland	242 ± 2.8	z, p	1	RM	Vignola et al., 2008 / Vignola et al., 2008
124.	Weinebene / Koralpe block of the Alpine fold belt, Austria	240 ± 1.5	z, p	1	RM	Heede, 1997 / Göd, 1989
125.	Xinjiang Altai pegmatite belt / Altai fold belt, China	220 ± 9	z, p	6	RM, RMMI	Wang et al., 2007 / Zhu et al., 2006
126.	Khentei pegmatite belt / Khentei block of the Mongol-Okhotsk fold belt, Mongolia	217 ± 2.7 211 ± 1.5	z, g (+) z, g (+)	5	MI	Kovalenko et al., 2003 / Zagorsky et al., 1999
127.	Jiajika district / Yajiang block of the Songpan-Garzê Fold belt, China	215.3±3.4 199.6±2.1 195.4±1.9	z, g (-) ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p	3	RM	Reid et al., 2007; Wang et al., 2005 / Wang et al., 2005
128.	Dauria district / Dauria block of the Mongol-Okhotsk fold belt, Russia	169 ± 2.5	hb ( <sup>40</sup> Ar/ <sup>39</sup> Ar), g (+)	4	MI, RMMI	Kozlov et al., 2008 / Zagorsky et al., 1999
129.	East-Transbaikalian district / Argun block of the Mongol-Okhotsk fold belt, Russia	140.8 ± 0.4 140.3 ± 2.6 138.6 ± 4	z, g (-) z, g (-) wr+ms (Rb/Sr), g (+)	12	MI, RM, RMMI	Kovalenko et al., 2000; Syritso et al., 2006; Buzkova & Shergina, 1999 / Zagorsky et al., 1997; Zagorsky et al., 1999
130.	Southern California pegmatite belt / northern part of the Peninsular Ranges batholith, USA	97.5 ± 0.5 96.5 ± 0.2 95.4 ± 0.3	z, g (-); z, g (-) ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p	14	RMMI, MI	Premo et al., 1998; Snee & Foord, 1991 / Fisher, J., 2002
131.	Selwyn pegmatite belt / northern part of the Omineca fold belt, Canada	81.6 ± 0.5	tn, p	2	RM, RMMI	Mauthner et. al, 1995 / Ercit et al., 2003; Groat et al., 2003

132.	North Idaho pematite belt / southern part of the Omineca fold belt (between Bitterroot and Kaniksu plutons), USA	63.6 ± 0.6	z, g (-)	5	MSRM, RM	Foster & Fanning, 1997 / Stoll, 1950
133.	Challis pegmatite belt / Challis volcanic field, USA	46.6 ± 1.6	K/Ar, bt, g (+)	4	MI	Larson & Geist, 1995 / Menzies, 1999
134.	Ruby Mountains / Harrison Pass batholith of the Basin and Range province, USA	36 ± 1	z, g (+)	1	RM, RMMI	Wright & Snoke, 1993 / Olson & Hinrichs, 1960
135.	Central Rhodope fields / Rhodope fold belt, Bulgaria	35.31 ± 0.25	kf (Rb/Sr), p	3	MI	Peytcheva et al., 2004 / Peytcheva et al., 1994
136.	Alpe Rosso / Alpine Penninic nappe, Italy	32.7 ± 3.2	m, p	2	RM	Guastoni & Mazzoli., 2007 / Guastoni et al., 2008
137.	Mount Antero / Colorado mineral belt, USA	29.59 ± 0.13	ms+bt ( <sup>40</sup> Ar/ <sup>39</sup> Ar), g(+)	3	MI	McIntosh, & Chapin, 2004 / Switzer, 1939
138.	Afghan pegmatite belt / Hindu Kush belr, Afghanistan	ca. 30	mean value from several K/Ar dating results	16	RM, RMMI	Debon et al., 1987 / Rossovskiy, 1981
139.	Pamir pegmatite province / Pamir orogen, Tajikistan	16.1 ± 1.1 18 ± 1 17 ± 1.8	z, g (+) wr+mus (Rb/Sr), g (+) unspecified Rb/Sr, p	7	RM, RMMI, MI	Vladimirov et al., 2000; Zagorsky et al., 1999 / Rossovskiy & Konovalenko, 1976; Zagorsky et al., 1999
140.	Gilgit-Dassu district / Himalaya Syntaxis, Pakistan	9.45 ± 0.06 9.39 ± 0.13 9.13 ± 0.04 5.27 ± 0.07	z, g (+) z, g (+) ms ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p m, g (+)	7	MI	Schneider et al., 1999; Fraser et al., 2001; Laurs et al., 1996 / Laurs et al., 1996; Laurs et al., 1998
141.	Elba / Cappane pluton of Elba island, Italy	4.63 ± 0.12 6.87±0.30	lp ( <sup>40</sup> Ar/ <sup>39</sup> Ar), p wr+ab+kfs+bt (Rb/Sr), g (+)	1	MI	Dini et al., 2002 / Pezzotta, 2000

## References

- Abeysinghe, P. B., Flint, D. J., Luckett, J., McGuinness, S. A., Pagel, J., Townsend, D. B., & Vanderhor, F., 2002. Geology and mineral resources of the Southern Cross – Esperance Region of Western Australia. *Western Australia Geological Survey, Record 2002/3*, 119p.
- Akintola, O.F. & Adekeye, J.I.D., 2008. Mineralization controls and petrogenesis of the rare metal pegmatites of Nasarawa area, central Nigeria. *Earth Sciences Research Journal*, **12**(1), 44-61.
- Aleinikoff, J.N., Horton, J.W., Jr., Drake, A.A., Jr., & Fanning, C.M., 2002. SHRIMP and conventional U-Pb ages of Ordovician granites and tonalites in the central Appalachian Piedmont: Implications for Paleozoic tectonic events. *American Journal of Science*, **302**, 50–75.
- Almeida, A., Leterrier, J., Noronha, F. & Bertrand, J., 1998. U–Pb zircon and monazite geochronology of the Hercynian two-mica granite composite pluton of Cabeceiras de Basto (northern Portugal). *Comptes Rendus de l'Académie des Sciences, Paris, Sciences de la terre et des planètes*, **326**, 779–785.
- Andersen, T., 1997. Radiogenic isotope systematics of the Herefoss granite, South Norway: an indicator of Sveconorwegian (Grenvillian) crustal evolution in the Baltic Shield. *Chemical Geology*, **135**, 139–158.
- Anderson, J.A.C., Williams, I.S., Price, R.C. & Fleming, P.D., 1996. U–Pb zircon ages from the Koetong Adamellite: implications for granite genesis and local basement in NE Victoria. *Geological Society of Australia Abstracts*, **42**, 1–2.
- Annesley, I.R. & Madore, C., 1999. Leucogranites and pegmatites of the sub-Athabasca basement, Saskatchewan: U protore? In Stanley, C.J. et al. (eds) *Mineral Deposits: Processes to Processing*. Balkema, Rotterdam, 297-300.
- Annesley, I.R., Madore C., Kamo, S., Andrade, N., Portella, P. , 2000. Petrochemistry and U-Pb geochronology of peraluminous leucogranite from Cigar Lake, Hearne Province, northern Saskatchewan. *CSEG Conference “GeoCanada 2000 - The Millennium Geoscience Summit”*, Abstracts on CD, 893.pdf.
- Ansdell, K.M., & Norman, A.R., 1995. U–Pb geochronology and tectonic development of the southern flank of the Kiseynew domain, Trans-Hudson orogen, Canada. *Precambrian Research*, **72**. 147–167.
- Aurischio, C., De Vito, C., Ferrini, V. & Orlandi, P., 2001. Nb-Ta oxide minerals from miarolitic pegmatites of the Baveno pink granite, NW Italy. *Mineralogical Magazine*, **65**, 509-522.
- Ávila, C.A., 2000. Geologia, petrografia e geocronologia de corpos plutônicos Paleoproterozóicos da borda meridional do cráton São Francisco, Região de São João del Rei, Minas Gerais. Unpublished PhD Thesis, IG, Federal University of Rio de Janeiro, 401p.
- Baadsgaard, H., Chaplin, C. & Griffin, W.L., 1984. Geochronology of the Gloserheia pegmatite, Froland, southern Norway. *Norsk Geologisk Tidsskrift*, **64** (2), 111-119.
- Baadsgard, H. & Černý, P., 1993. Geochronological studies in the Winnipeg River pegmatite populations, southeastern Manitoba. *Geological Association of Canada–Mineralogical Association of Canada Annual Meeting: Program and Abstracts*, **18**, A5.
- Baker, E.H. & Jones, J.V. III, 2008. Age and deformational characteristics of the Paleoproterozoic Denny Creek granodiorite, Collegiate Peaks wilderness area, Colorado. *Cordilleran Section (104th Annual) and Rocky Mountain Section (60th Annual) Joint Meeting (19–21 March 2008)*. CD with abstracts, paper 16-28.

- Barash, I.G., Sal'nikova, E.B., Reznitsky, L.Z., Kotov, A.B., Kovach, V.P., Yakovleva, S.Z. & Fedoseenko, A.M. Age relations between metamorphism of the Slyudyanka granulite and the Khamar Daban zoned metamorphic complexes: Evidence from U-Pb geochronological data. *Doklady Earth Sciences*, **409** (6), 905-908.
- Barnes, R.G., 1988. Metallogenic studies of the Broken Hill and Eurioiwie Blocks. *Geological Survey of New South Wales Bulletin*, **32**(1, 2), 250 p.
- Barton, A., 2006. Independent expert report on the Queensland and Victoria projects. *IMC Report No 01080 to Queensland Gold and Minerals Limited*, 134 p. (available on [www.qgm.com.au](http://www.qgm.com.au)).
- Batieva I.D., Bel'kov I.V., Vetrin V.R., Vinogradovf A.N., Vinogradova G.V. & Dubrovskiy M.I., 1978. Precambrian granitoids of the northeastern Baltic shield. Leningrad, "Nauka", 264 p. (in Russian).
- Baumgartner R., Romer R.L., Moritz R., Sallet R. & Chiaradia M., 2006. Columbite-tantalite-bearing granitic pegmatites from the Serido Belt, northeastern Brazil: genetic constraints from U–Pb dating and Pb isotopes. *Canadian Mineralogist*, **44**, 69-86.
- Baur, N., Kröner, A., Liew, T.C., Todt, W.I.S. & Hofman, A.W., 1991. U-Pb isotopic systematics of zircons from prograde and retrograde transition zones in high-grade orthogneisses, Sri Lanka. *Journal of Geology*, **99**, 527–545.
- Beal, K., Lentz, D.R., Hall, D., Dunning, G. & Thorne, K.G., 2007. The Zealand Station beryl (aquamarine) deposit, west-central NB: mineralogic, geochronologic, and petrogenetic constraints. *International Symposium on Granitic Pegmatites: The State of the Art, May 2007, Porto, Portugal*. Abstracts. [[www.fc.up.pt/peg2007/files/beal.pdf](http://www.fc.up.pt/peg2007/files/beal.pdf)].
- Berger A., Gnos, E., Schreurs, G., Fernandez, A., Rakotondrazafy, M., 2006. Late Neoproterozoic, Ordovician and Carboniferous events recorded in monazites from southern-central Madagascar. *Precambrian Research*, **144**, 278–296.
- Berning, J., 1986. The Rössing uranium deposit, South West Africa/Namibia. In Anhaeusser, C.R. & Maske, S. (eds.) *Mineral deposits of Southern Africa*, v.II. Geological Society of South Africa Special Publication, Johannesburg, 1819-1832.
- Besairie, H., 1966. Gîtes minéraux de Madagascar. *Annales Géologiques de Madagascar*, **34**, Tananarive, 822 p.
- Beurlen H., Barreto S., Martin R., Melgarejo J., Rhede D., Da Silva, M.R.R. & Souza Neto, J., 2007. The Borborema pegmatitic province in northeast Brazil. *International Symposium on Granitic Pegmatites: The State of the Art, May 2007, Porto, Portugal*. Abstracts. [[www.fc.up.pt/peg2007/files/beurlen.pdf](http://www.fc.up.pt/peg2007/files/beurlen.pdf)].
- Bibikova E.V., Bogdanova S.V., Glebovitsky V.A., Claesson S. & Skiold T., 2004. Evolution of the Belomorian belt: NORDSIM U–Pb zircon dating of the Chupa paragneisses, magmatism, and metamorphic stages. *Petrology*, **12**, 195-210.
- Bilal, E., Correia-Neves, J.M., Fuzikawa, K., Horn, A.H., Marciano, V.R.P.R.O., Fernandes, M.L.S., Moutte, J, Mello, F.M. & Nasraoui, M., 2000. Pegmatites in southeastern Brazil. *Revista Brasileira de Geociencias*, **30**, 234–237.
- Bingen, B., Stein, H.J., Bogaerts, M., Bolle, O. & Mansfeld, J., 2006. Molybdenite Re-Os dating constrains gravitational collapse of the Sveconorwegian orogen, SW Scandinavia. *Lithos*, **87**, 328-346.
- Black, L.P. & McCulloch, M.T., 1990. Isotopic evidence for the dependence of recurrent felsic magmatism on new crust formation: An example from the Georgetown region of Northeastern Australia. *Geochemica et Cosmochimica Acta*, **54**, 49-60.
- Bloem, E.J.M., McNaughton, N.J., Groves, D.I., Ridley, J.R., 1995. An indirect lead isotope age determination of gold mineralization at the Corinthia mine, Yilgarn Block, Western Australia. *Australia Journal of Earth Sciences*, **42**, 447–451.

- Boelema, R. & Hira, H.G., 1998. Pegmatite deposits. In Wilson, M.G.C. & Anhaeusser, C.R. (eds) *The mineral resources of South Africa*. Handbook, Council for Geoscience, 16, p. 509-521.
- Boily, M., William-Jones, A.E., Mulja, T. & Pilote, P., 1990. Rare-element granitic pegmatites in the Abitibi greenstone belt: a case study of the Preissac-Lacorne batholith. In Rive, M., Verpaelst, P., Gagnon, Y., Lulin, J.M., Riverin, G. & Simard, A. (eds). *The northwestern Quebec polymetallic belt*. Canadian Institute of Mining and Metallurgy, Special Volume **43**, 299-311.
- Bouladon, J., Journavsky, G. & Morin, P., 1950. Etude préliminaire des pegmatites à muscovite, béryl et tantalite de la région de Tazenakht. *Notes et Mém. Serv. Géol. Maroc*, **3**, 207-235.
- Breaks, F.W., Tindle, A.G. & Smith S.R., 1999. Rare-metal mineralisation associated with the Berens River—Sachigo Subprovincial boundary, northwestern Ontario: Discovery of a new zone of complex-type, petalite subtype pegmatite and implications for future exploration. *Ontario Geological Survey Summary of Field Work and Other Activities 1998*, 168–182.
- Briqueu, L., Lancelot, J.R., Valois, J.-P. & Walgenwitz, F., 1980. Géochronologie U–Pb et genèse d'un type de minéralisation uranifère: les alaskite de Goanikontes (Namibia) et leur encaissant. *Bulletin Centrale de Recherche Exploration–Production*, Elf Aquitaine, **4**, 759–811.
- Brooks, J. H. & C. H. Shipway, 1960. Mica Creek pegmatites, Mount Isa, north-western Queensland. *Queensland Gov. Mining J.*, 61, 511-522.
- Broughton, P.L., 1973. Precious topaz deposits of the Llano Uplift area, central Texas. *Rocks and Minerals*, 48(3), 147-156.
- Bucci, L.A., McNaughton, N.J., Fletcher, I.R., Groves, D.I., Hagemann, S.G. & Stein, H.J., 2004. Timing and duration of high-temperature gold mineralization and spatially associated granitoid magmatism at Chalice, Yilgarn Craton, Western Australia. *Economic Geology*, **99**, 1123–1144.
- Budd, A.R., Wyborn, L.A.I. & Bastrakova, I.V., 2001. The metallogenic potential of Australian Proterozoic granites. *Geoscience Australia*, Record 2001/12, 152 p.
- Bulambo, M., De Waele, B., Kampunzu, A.B., Tembo, F., 2004. SHRIMP U-Pb geochronology of the Choma-Kalomo block (Zambia) and geological implications. *20th Colloquium of African Geology*, 2004, Orleans, France – 2-7 June 2004, Abstracts volume, 96.
- Burton, G.R., 2000. Metallogenic studies of the Broken Hill and Eurioiwie Blocks, New South Wales. Mineral deposits of the Eurioiwie Block (including the northernmost Broken Hill Block and Poolamacca Inlier). *Geological Survey of New South Wales Bulletin*, **32**(4), 106 p.
- Buzkova, N.G. & Shergina, Yu.P., 1999. New isotope geochronological data on age of the Adun-Cholon massif rocks. *Regional'naya Geologiya i Metallogeniya (Regional geology and metallogeny)*, **9**, 41-43. (in Russian).
- Camacho, A. & Fanning, C.M., 1995. Some isotopic constraints on the evolution of the granulite and upper amphibolite facies terranes in the eastern Musgrave Block, central Australia. *Precambrian Research*, **71**, 155-181.
- Cameron, E.N., Jahns, R.H., McNair, A.H. & Page, L.R., 1949. Internal structure of granitic pegmatites. *Economic Geology*. Monograph 2, 115p.
- Cameron, E.N., Larabee, D.M., McNair, A.H., Page, J.J., Stewart, G.W. & Shainin, V.E., 1954. Pegmatite investigations 1942–45 New England. *United States Geological Survey Professional Paper*, **255**, 352 p.
- Célérier, J., Harrison, T.M. & Hermann, J., 2006. Ar diffusion in muscovite. *Goldschmidt Conference Abstract*. doi:10.1016/j.gca.2006.06.093.
- Černý, P., 1990. Distribution, affiliation and derivation of rare-element granitic pegmatites in the Canadian shield. *Geologische Rundschau*, **79**, 183-226.



- Černý, P., 1991. Fertile granites of Precambrian rare-element pegmatite fields: is geochemistry controlled by tectonic setting or source lithologies? *Precambrian Research*, **51**, 429–468.
- Černý, P., 2005. The Tanco rare-element pegmatite deposit, Manitoba: regional context, internal anatomy, and global comparisons. In Linnen, R.L. & Samson, I.M. (eds.) *Rare-Element Geochemistry and Mineral Deposits*. Geological Association of Canada, Short Course Notes, **17**, 127–158.
- Chakoumakos, B.C. & Lumpkin, G.R., 1990. Pressure-temperature constraints on the crystallization of the Harding pegmatite, Taos County, New Mexico. *Canadian Mineralogist*, **28**, 287–298.
- Chalokwu, C.I., Ghazi, M.A. & Foord, E.E., 1997. Geochemical characteristics and K–Ar ages of rare-metal bearing pegmatites from the Birimian of southeastern Ghana. *Journal of African Earth Sciences*, **24**, 1–9.
- Chamberlain, K.R. & Bowring, S.A., 2000. Apatite-feldspar U–Pb thermochronometer: A reliable, mid-range (~450°C), diffusion-controlled system. *Chemical Geology*, **172**, 73–200.
- Cheilletz, A., Bertrand, J.M.L., Charoy, B., Moulahoum, O., Bouabssa, L., Farrar, E., Zimmerman, J.L., Dautel, D., Archibald, D.A. & Boullier, A.M., 1992. Géochimie et géochronologie Rb–Sr, K–Ar et  $^{40}\text{Ar}/^{39}\text{Ar}$  des complexes granitiques panafricains de la région de Tamanrasset (Algérie): relations avec les minéralisations Sn–W associées et l'évolution tectonique du Hoggar central. *Bulletin Société Géologique France*, **163**, 733–750.
- Connors, K.A. & Page, R.W., 1995. Relationships between magmatism, metamorphism and deformation in the western Mount Isa Inlier, Australia. *Precambrian Research*, **71**, 131–153.
- Cronwright, M.S., August, R. & Roberts, M., 2005. Application of the CHIME dating technique for a geochronological investigation of monazites from the Somipe pegmatite, Alto Ligonha pegmatite Belt, northern Mozambique. *Unpublished Report, Council for Geoscience*, 2005–0157, 43p.
- Crooks, A.F. & Abbott, P.J., 2004. Beryl in South Australia. *South Australia Department of Primary Industries and Resources*, Report Book, 2004/25, 15 p.
- Da Silva, M.R.R., Höll, R., Beurlen, H., 1995. Borborema pegmatitic province: geological and geochemical characteristics. *Journal of South America Earth Sciences*, **8**, 355–364.
- Daly J.S., Balagansky V.V., Timmerman M.J. & Whitehouse M.J., 2006. The Lapland-Kola orogen: Palaeoproterozoic collision and accretion of the northern Fennoscandian lithosphere. In Gee D.G. & Stephenson R.A. (eds) *European Lithosphere Dynamics*. Geological Society, London, Memoirs, **32**, 579–598.
- Datta, A.K., 1973. Internal structure, petrology and mineralogy of calc-alkaline pegmatites in parts of Rajasthan. *Geological Survey of India Memoirs*, **110**. 1–112.
- Debon, F., Afzali, H., Le Fort, P. & Sonet, J., 1987, Major intrusive stages in Afghanistan: Typology, age, and geodynamic setting. *Geologische Rundschau*, **76**, 245–264.
- Devaraju T.C., Rajshekar N., Srikantappa C., Khandali S.D. & Subba Rao G., 1990. Lithium pegmatites of Amareshwar, Raichur district, Karnataka, India. In Naqvi S.M. (ed.) *Precambrian Continental Crust and its Economic Resources*. Development in Precambrian Geology, **8**, Elsevier, Amsterdam, 653–669.
- Dias, M.B. & Wilson, W.E., 2000. Famous mineral localities: the Alto Ligonha pegmatites, Mozambique. *Mineralogical Record*, **31**, 459–497.

- Diehl, M., 1993. Pegmatites of the Cape Cross-Uis pegmatite belt, Namibia: geology, mineralisation, rubidium-strontium characteristics and petrogenesis. *Journal of African Earth Sciences*, **17**, 167-181.
- Dini, A., Innocenti, F., Rocchi, S., Tonarini, S. & Westerman, D.S., 2002. The magmatic evolution of the Late Miocene laccolith–pluton–dyke granitic complex of Elba Island, Italy. *Geological Magazine*, **139**, 257–279.
- Dissanayake, C.B, Chandrajith, R., Tobschall H.J., 2000. The geology, mineralogy and rare element geochemistry of the gem deposits of Sri Lanka. *Geological Society of Finland Bulletin*, **72**, 5-20.
- Dobmeier, C., Lutke, S., Hammerschmidt, K., Mezger, K., 2006. Emplacement and deformation of the Vinukonda meta-granite (Eastern Ghats, India) – Implications for the geological evolution of peninsular India and for Rodinia reconstructions. *Precambrian Research*, **146**, 165–178.
- Dorais, M. J., Lira, R., Chen, Y. & Tingey, D., 1997. Origin of biotite-apatite-rich enclaves, Achala Batholith, Argentina. *Contributions to Mineralogy and Petrology*, **130**, 31–46.
- Ducharme, Y., Stevenson, R.K. & Machado, N., 1997. Sm/Nd geochemistry and U-Pb geochronology of the Preissac and Lamotte leucogranites, Abitibi Subprovince. *Canadian Journal of Earth Sciences*, **34**, 1059-1071.
- Dyachkov, B.A. & Mairorova, N.P., 1996. The rare metal deposits of the Kalba region in east Kazakhstan. In Shatov, V., Seltmann, R., Kremenetsky, A., Lehmann, V., Popov, V. & Ermolov, P. (eds) *Granite-related ore deposits of central Kazakhstan and adjacent Areas*. Glagol, St. Petersburg, 229-242.
- Easton, R.M. & Kamo, S.L., 2008. New U-Pb zircon ages reveal a long-lived magmatic history for the Harvey-Cardiff domain of the Composite Arc Belt of the Grenville Province in Ontario. *Geological Society of America, Abstracts with Program*, **40** (6), 228.
- Ehlmann, A.J., Walper, J.L. & Williams, J., 1964. A new, Barringer Hill-type, rare-earth pegmatite from the Central Mineral Region, Texas. *Economic Geology*, **59**, 1348-1360.
- Eliasson, T. & Schöberg, H., 1991. U-Pb dating of the post-kinematic Sveconorwegian (Grenvillian) Bohus granite, SW Sweden: evidence of restitic zircon. *Precambrian Research*, **51**, 337-350.
- Ercit, T.S., Groat, L.A. & Gault, R.A., 2003. Granitic pegmatites of the O’Grady batholith, NWT, Canada: A case study of the evolution of the elbaite subtype of rare-element granitic pegmatite. *Canadian Mineralogist*, **41**, 117–137.
- Ertl, A., Schuster, R., Prowatke, S., Brandstätter, F., Ludwig, T., Bernhardt, H.-J., Koller, F. & Hughes J.M., 2004. Mn-rich tourmaline and fluorapatite in a Variscan pegmatite from Eibenstein an der Thaya, Bohemian massif, Lower Austria. *European Journal of Mineralogy*, **16**, 551–560.
- Fetherston J.M. Tantalum in Western Australia. *Western Australia Geological Survey, Mineral Resources Bulletin*, **22**, 2004, 162 p.
- Fisher, J., 2002. Gem and rare-element pegmatites of Southern California. *Mineralogical Record*, **33**, 363-425.
- Foster, D.A. & Fanning, M.C., 1997. Geochronology of the northern Idaho batholith and the Bitterroot metamorphic core complex; magmatism preceding and contemporaneous with extension. *Geological Society of America Bulletin*, **109**, 379–394.
- Francis, C.A., 1987. Minerals of the Topsham, Maine, pegmatite district. *Rocks and Minerals*, **62**, 407 -415.
- Francis, C.A. & Lange, D.E., 1999. Barringer Hill, Llano County, Texas: a classic NYF pegmatite. *Canadian Mineralogist*, **37**, 818.
- Francis, C.A., Lange, D.E. & Peterson, R.C., 1999. Rare-element mineralogy of the J.C. Gole pegmatite, Murchison Township, Madawaska district. Ontario. *Canadian Mineralogist*, **37**, 814.



- Fraser, J.E., Searle, M.P., Parrish, R.R. & Noble, S.R., 2001. Chronology of deformation, metamorphism, and magmatism in the southern Karakoram Mountains. *Geological Society of America Bulletin*, **113**, 1443–1455.
- Friedman, R. & Martignole, J., 1995. Mesoproterozoic sedimentation, magmatism and metamorphism in the southern part of the Grenville Province (western Quebec): U–Pb geochronological constraints. *Canadian Journal of Earth Sciences*, **32**, 2103–2114.
- Friend, C.R.L. & Nutman, A.P., 2005. New pieces to the Archean jigsaw puzzle in the Nuuk region, southern West Greenland: steps in transforming a simple insight into a complex regional tectonothermal model. *Journal of the Geological Society, London*, **162**, 147–162.
- Galliski, M. A. 1994. La Provincia Pegmatítica Pampeana. I: Tipología y distribución de sus distritos económicos. *Revista de la Asociación Geológica Argentina*, **49**, 99-112.
- Galliski, M.A., Márquez-Zavalía, M.F., Cooper M.A. & Hawthorne, F.C., 2001. Bismutotantalite from north western Argentina: description and crystal structure. *Canadian Mineralogist*, **39**, 103-110.
- Ghosh, A.K., 2008. U-Pb Geochronologic Study of magmatic zircon in Paleoproterozoic granitic pegmatite and associated metapelites, Black Hills, South Dakota: Implications for gold petrogenesis and sedimentary provenance. 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM. *Geological Society of America Abstracts with Programs*, **40** (6), 145.
- Glodny, J., Grauert, B., Fiala, J., Vejnar, Z. & Krohe, A., 1998. Metapegmatites in the western Bohemian massif: ages of crystallization and metamorphic overprint, as constrained by U-Pb zircon, monazite, garnet, columbite and Rb/Sr muscovite data. *International Journal of Earth Sciences/Geologische Rundschau*, **87**, 124-134.
- Göd, R., 1989. The spodumene deposit at “Weinebene”, Koralpe, Austria. *Mineralium Deposita*, **24**, 270-278.
- Gordienko V.V., Zhukova I.A. & Krivovichev V.G., 1979. Pegmatites of the Kodaro-Udokan district near the Baikal-Amur railway line and their development perspectives. In: *Geology, petrology and mineral resources of Western Siberia*, v.1, 49-53. (in Russian).
- Gottfried, D., Senftle, F.E., & Waring, C.L., 1956. Age determination of zircon crystals from Ceylon. *American Mineralogist*, **41**, 749–765.
- Grauch, R.I. & Zarinski, K., 1976. Generalized descriptions of uranium-bearing veins, pegmatites, and disseminations in nonsedimentary rocks, eastern United States. *United States Geological Survey Open-File Report 76-582*, 114p.
- Griffin, T.J., Page, R.W., Sheppard, S., Tyler, I.M., 2000. Tectonic implications of Palaeoproterozoic post-collisional, high-K felsic igneous rocks from the Kimberley region of northwestern Australia. *Precambrian Research*, **101**, 1–23.
- Groat, L.A., Mulja, T., Mauthner, M., Ercit, T.S., Raudsepp, M., Gault, R.A. & Rollo, H.A., 2003. Geology and mineralogy of the Little Nahanni rare-element granitic pegmatites, Northwest Territories. *Canadian Mineralogist*, **41**, 139–160.
- Grosse P., Söllner F., Báez M.A., Toselli, A.J., Rossi, J.N., de la Rosa, J.D., 2008. Lower Carboniferous post-orogenic granites in central-eastern Sierra de Velasco, Sierras Pampeanas, Argentina: U–Pb monazite geochronology, geochemistry and Sr–Nd isotopes. *International Journal of Earth Sciences/Geologische Rundschau*, 10.1007/s00531-007-0297-5.
- Guastoni, A. & Mazzoli, C., 2007. Age determination by  $\mu$ -pixe analysis of cheralite-(Ce) from emerald-bearing pegmatites of Vigizzo Valley (Western Alps, Italy). *Mitteilungen der Osterreichischen Mineralogischen Gesellschaft*, **153**, 279–282.

- Guastoni, A., Diella, V. & Pezzotta, F., 2008. Vigezzite and associated oxides of Nb–Ta from emerald-bearing pegmatites of the Vigezzo valley, Western Alps, Italy. *Canadian Mineralogist*, **46**, 619–633.
- Handke M.J., 2001. Neoproterozoic magmatism in the Itremo region, Central Madagascar: Geochronology, geochemistry and petrogenesis. Unpublished PhD thesis. Washington University, St. Louis, Missouri.
- Hanson, S.L., Simmons, W.B., Webber, K.W. & Falster, A.U., 1992. Rare-earth-element mineralogy of granitic pegmatites in the Trout Creek Pass district, Chaffee County, Colorado. *Canadian Mineralogist*, **30**, 673–686.
- Harris, P.D., Robb, L.J. & Tomkinson, M.J., 1995. The nature and structural setting of rare-element pegmatites along the northern flank of the Barberton greenstone belt, South Africa. *South Africa Journal of Geology*, **98**(1), 82–94.
- Heede, H.-U., 1997. Isotopengeologische Untersuchungen an Gesteinen des ostalpinen Saualpenkristallins, Kärnten-Österreich. *Münstersche Forschungen Zur Geologie und Palä-ontologie*, **81**, 1–168.
- Hill, R.I., Chappell, B.W., & Campbell, I.H., 1992. Late Archaean granites of the southeastern Yilgarn block, Western Australia: Age, geochemistry, and origin. *Transactions of the Royal Society of Edinburgh*, **83**, 211–226.
- Hirdes, W. & Davis, D.W., 2002. U–Pb geochronology of Palaeoproterozoic rocks in the southern part of the Kedougou-Kenieba inlier, Senegal, West Africa: evidence for diachronous accretionary development of the Eburnean Province. *Precambrian Research*, **118**, 83–99.
- Horton, J.W., Jr. & Butler J.R., 1986. The Kings Mountain belt and spodumene Pegmatite District, Cherokee and York counties, South Carolina, and Cleveland County, North Carolina. *Centennial Field Guide Volume 6: Southeastern Section of the Geological Society of America*, 239–244.
- Hugo, P.J., 1970. The pegmatites of the Kenhardt and Gordonia districts, Cape Province. *Memoir of Geological Survey of South Africa*, **58**, 94p.
- Janeczek J., 2007. Intragranitic pegmatites of the Strzegom-Sobótka massif – an overview. In Kozłowski, A. & Wiszniewska, J. (eds.) *Granitoids in Poland*, Archivum Mineralogiae Monograph 1, 193–201.
- Johnson, S. P., Rivers, T. & De Waele, B., 2005. A review of the Mesoproterozoic to early Palaeozoic magmatic and tectonothermal history of south-central Africa: implications for Rodinia and Gondwana. *Journal of the Geological Society*, London, **162**, 433–450.
- Joklik, G.F., 2005. The mica-bearing pegmatites of the Harts Range, Central Australia. *Economic Geology*, **50**, 625–649.
- Jung, S., Hoernes, S. & Mezger, K., 2000. Geochronology and petrogenesis of Pan-African syn-tectonic S-type and post-tectonic A-type granite (Namibia): products of melting of crustal sources, fractional crystallization and wall rock entrainment. *Lithos*, **51**, 153–179.
- Kalinin P.V. About pegmatites of the Slyudyanskiy district in southern Cisbaikalia. Trudy MGRI (*Transactions of MGRI*), **31**, 81–101. (in Russian).
- Kamo, S. L. & Davis, D.W., 1994. Reassessment of Archaean crustal development in the Barberton Mountain Land, South Africa, based on U–Pb dating. *Tectonics*, **13** (1), 167–192.
- Karlstrom, K. E., Dallmeyer, R. D. & Grambling, J. A., 1997.  $^{40}\text{Ar}/^{39}\text{Ar}$  evidence for 1.4Ga regional metamorphism in New Mexico: implications for thermal evolution of lithosphere in Southwestern USA. *Journal of Geology*, **105**, 205–223.
- Kent, A.J.R., Cassidy, K.F. & Fanning, C.M.F., 1996. Gold mineralization synchronous with the final stages of cratonization, Yilgarn Craton, Western Australia: evidence from Sm–Nd and U–Pb ages of crosscutting post-gold dykes. *Geology*, **24**, 879–882.
- Kinny, P.D., 2000. U–Pb dating of rare metal (Sn–Ta–Li) mineralised pegmatites in Western Australia by SIMS analysis of tin and tantalum bearing ore minerals. *New Frontiers in Isotope Geology Conference, Lorne, Victoria, February 2000, Proceedings*, 113–116.

- Kolotukhina S.E., Grigor'eva L.A., Klapovskaya L.I., Pervukhina A.E. & Potemkin K.V., 1968. Geology of rare-element deposits of South America. Moscow, "Nauka", 279 p. (in Russian).
- Kontak, D.J., 2006. Nature and origin of an LCT-suite pegmatite with late-stage sodium enrichment, Brazil Lake, Yarmouth County, Nova Scotia. I. Geological setting and petrology. *Canadian Mineralogist*, **44**, 563–598.
- Kontak, D.J., Creaser, R., Heaman, L. & Archibald, D.A., 2005. U-Pb tantalite, Re-Os molybdenite, and  $^{40}\text{Ar}/^{39}\text{Ar}$  muscovite dating of the Brazil Lake pegmatite, Nova Scotia: a possible shear-zone related origin for an LCT-type pegmatite. *Atlantic Geology*, **41**, 17-30.
- Kostitsyn, Yu.A., 1996. K/Ar dates for the Kazakhstan granites: An overview. In: Shatov, V., Seltmann, R., Kremenetsky, A., Lehmann, V., Popov, V. & Ermolov, P. (eds) *Granite-related ore deposits of central Kazakhstan and adjacent areas*. Glagol, St. Petersburg, 287–299.
- Kovalenko, V.I., Sal'nikova, E.B., Antipin, V.S., Yarmolyuk, V.V., Kovach, V.P. & Kotov, A.B., 2000. Unusual association of Li-F granites and alkaline granitoids of the Suktui massif (eastern Transbaikalia): age and the sources of magmas. *Doklady Russian Academy of Sciences*, **372**(4), 536-540. (in Russian).
- Kovalenko, V.I., Yarmolyuk, V.V., Sal'nikova, E.B., Budnikov, S.V., Kovach, V.P., Kotov, A.B., Ponomarchuk, V.A., Kozlov, V.D. & Vladykin, N.V., 2003. Sources of igneous rocks and genesis of the Early Mesozoic tectonomagmatic area of the Mongolia–Transbaikalia magmatic region: 1. Geology and isotope geochronology. *Petrology*, **11**, 147-160.
- Kozlov, V.D., Spiridonov, A.M., Bydnikov, S.V. & Ponomarchuk, V.A., 2008. Mesozoic granitoid magmatism of the Daurian dome, eastern Transbaikalia: Problems of formation classification and ore potential. *Granites and Earth Evolution: geodynamic position, petrogenesis and ore content of granitoid batholiths*. International geological conference, Ulan-Ude, Russia, 26-29 August 2008. Abstracts on: [<http://geo.stbur.ru/info/granites/st/st110.html>].
- Kozłowski, A. & Sachanbiński M., 2007. Karkonosze intragranitic pegmatites and their minerals. Kozłowski, A. & Wiszniewska, J. (eds.) *Granitoids in Poland*, Archivum Mineralogiae Monograph 1, 155-178.
- Krogstad, E.J. & Walker, R.J., 1994. High closure temperatures of the U-Pb system in large apatites from the Tim Mountain pegmatite, Black Hills, South Dakota, USA. *Geochimica et Cosmochimica Acta*, **58**, 3845-3853.
- Kröner, A., Hegner, E., Collins, A.S., Windley, B.F., Brewer, T.S. & Razakamanana, T., 2000. Age and magmatic history of the Antananarivo block, central Madagascar, as derived from zircon geochronology and Nd isotopic systematics. *American Journal of Science*, **300**, 251–288.
- Kudryashov N. M., Gavrilenko B., Apanasevich E. 2004. Time of formation of rare metal pegmatites in the Kolmozero-Voron'ya Greenstone Belt (Kola region of the Baltic Shield): U-Pb, Pb-Pb tantalite, columbite and tourmaline dating. *32nd IGC, Florence 2004*, Abstracts, 237-23.
- Küster, D., 1990. Rare-metal pegmatites of Wamba, central Nigeria--their formation in relationship to late Pan-African granites. *Mineralium Deposita*, **25**, 25-33.
- Küster, D., 1995. Rb–Sr isotope systematics of muscovite from Pan-African granitic pegmatites of western and northeastern Africa. *Mineralogy & Petrology*, **55**, 71–83.
- Küster D., 2008. Granitoid-hosted Ta mineralization in the Arabian–Nubian Shield: Ore deposit types, tectono-metallogenic setting and petrogenetic framework. *Ore Geology Reviews*, doi:10.1016/j.oregeorev.2008.09.008

- Küster, D., Romer, R.L., Tolessa, D., Zerihun, D. & Bheemalingeswara, K., 2007. Geochemical evolution and age of the Kenticha tantalum pegmatite, southern Ethiopia. *International Symposium on Granitic Pegmatites: The State of the Art, May 2007, Porto, Portugal*. Abstracts, [www.fc.up.pt/peg2007/files/kuster.pdf].
- Larin, A.M., Kotov, A.B., Sal'nikova, E.B., Kovach, V.P., Makar'ev, L.B., Timashkov, A.N., Berezhnaya, N.G. & Yakovleva, S.Z., 2000. New data on the age of granites of the Kodar and Tukuringra Complexes, Eastern Siberia: geodynamic constrains. *Petrology*, **8**, 238–243.
- Larsen, R.B., 2002. The distribution of rare-earth elements in K-feldspar as an indicator of petrogenetic processes in granitic pegmatites: Examples from two pegmatite fields in southern Norway. *Canadian Mineralogist*, **40**, 137–151.
- Larson, P.B. & Geist, D.J., 1995. On the origin of low-<sup>18</sup>O magmas: evidence from the Casto pluton, Idaho. *Geology*, **23**, 909–912.
- Lauris, B.M., Dilles, J.H. & Snee, L.W., 1996. Emerald mineralization and metasomatism of amphibolite, Khaltaro granitic pegmatite hydrothermal vein system, Haramosh Mountains, northern Pakistan. *Canadian Mineralogist*, **34**, 1253–1286.
- Lauris, B.M., Dilles, J.H., Wairrach, Y., Kausar, A.B. & Snee L.W., 1998. Geological setting and petrogenesis of symmetrically zoned, miarolitic granitic pegmatites at Stak Nala, Nanga Parbat – Haramosh massif, northern Pakistan. *Canadian Mineralogist*, **36**, 1–47.
- Lentz, D.R. & Suzuki, K., 2000. A low F pegmatite-related Mo skarn from the southwestern Grenville province, Ontario, Canada: Phase equilibria and petrogenetic implications. *Economic Geology*, **95**, 1319–1337.
- Lentz, D.R. & Creaser, R.A., 2005. Re-Os model age constraints on the genesis of the Moss molybdenite pegmatite-aplite deposit, southwestern Grenville Province, Quyon, Quebec, Canada. *Exploration and Mining Geology*, **14**, 95–103.
- Letnikov, F.A. & Kostitsyn, Yu.A., 2002. Rb–Sr dating of anatectic granites of the Balkashino complex, Kokshetau block, northern Kazakhstan. *Doklady Earth Sciences*, **387A** (9), 1035–1037.
- Lima, A. & Roda-Robles, E. (eds.), 2007. Granitic pegmatites: The state of the art. Field trip guidebook, Porto – Portugal, 6th – 12th May, 2007. Universidade do Porto, Faculdade de Ciências, Departamento de Geologia, Memórias, **9**, 86p.
- Lindroos, A., Romer, R.L., Ehlers, C., Alviola, R., 1996. Late-orogenic Svecofennian deformation in SW Finland constrained by pegmatite emplacement ages. *Terra Nova*, **8**, 567–574.
- Lishmund S.R., 1982. Non-metallic and tin deposits of the Broken Hill district. *Geological Survey of New South Wales, Bulletin*, **28**, 186 p.
- London, D. & Burt, D.M., 1978. Lithium pegmatites of the White Picacho district, Maricopa and Yavapai Counties, Arizona. In Burt, D.M. & Pewe, T.L. (Eds.) *Guidebook to the geology of Central Arizona*. Arizona Bureau of Geology and Mineral Technology, Special Paper 2, 61–72.
- Lork, A. & Bahlburg, H., 1993. Precise U-Pb ages of monazites from the Faja Eruptiva de la Puna Oriental and the Cordillera Oriental, NW Argentina: *XII Congreso Geológico Argentino y II Congreso de Exploración de Hidrocarburos Actas*, IV, 1–6.
- Lork, A., Miller, H. & Kramm, U., 1989. U-Pb zircon and monazite ages of the La Angostura granite and the orogenic history of the northwest Argentina basement. *Journal of South America Earth Sciences*, **2**, 147–153.
- Lottermoser, B.G. & Lu, J., 1997. Petrogenesis of rare-element pegmatites in the Olary Block, South Australia, part 1. Mineralogy and chemical evolution. *Mineralogy and Petrology*, **59**, 1–19.
- Loveridge, W.D., 1986. U–Pb ages on zircon from rocks of the Lac de Morhiban map area, Quebec. *Geological Survey of Canada Current Research*. Part A, Paper 86-1A, 523–530.

- Ludwig, K.R. & Cooper, J.A., 1984. Geochronology of Precambrian granites and associated U-Ti-Th mineralization, northern Olary province, South Australia. *Contributions to Mineralogy and Petrology*, **86**, 298-308.
- Machowiak, K. & Armstrong, R., 2007. SHRIMP U-Pb zircon age of the Karkonosze granite. *Mineralogia Polonica Special Papers*, **31**, 193-196.
- Makrygina V.A., Makagon V.M., Zagorsky V.E., Smakin B.M., 1990. Granitic pegmatites. V.1: Mica-bearing pegmatites. Novosibirsk, "Nauka", 233p. (in Russian).
- Mao, J., Du, A., Seltmann, R. & Yu, J., 2003. Re-Os ages for the Shameika porphyry Mo deposit and the Lipovy Log rare metal pegmatite, Central Urals, Russia. *Mineralium Deposita*, **38**, 251-257.
- Mapes, R.W., 2002. Geochemistry and geochronology of Mid-Paleozoic granitic plutonism in the southern Appalachian Piedmont terrane, North Carolina-South Carolina-Georgia. Unpublished MS thesis, Vanderbilt University, Nashville, Tennessee, 162 p.
- Maphalala, R.M. & Kröner, A., 1993. Pb-Pb single zircon ages for the younger Archaean granitoids of Swaziland, Southern Africa. *Extended Abstracts of the 16th International Colloquium on African Geology, Mbabane, Swaziland*, 201-206.
- Maphalala, R.M. & Trumbull, R.B., 1998. A geochemical and Rb/Sr isotopic study of Archean pegmatite dykes in the Tin Belt of Swaziland. *South African Journal of Geology*, **101**, 53-65.
- Martin, Y.J., 1964. The Bikita tifeild. *Southern Rhodesia Geological Survey Bulletin*, **58**. 114-143.
- Matheis, G. & Caen-Vachette, M., 1983. Rb/Sr isotopic study of rare-metal bearing and barren pegmatites in the Pan-African reactivation zone of Nigeria. *Journal of African Earth Sciences*, **1**, 35-40.
- Maurice, C.S., 1940. The pegmatites of the Spruce Pine district, North Carolina. *Economic Geology*, **35**, 49-78.
- Mauthner, M., Mortenson, J.K., Groat, L.A. & Ercit, T.S., 1995. Geochronology of the Little Nahanni pegmatite group, Northwest Territories. *Canadian Journal of Earth Sciences*, **32**, 2090-2097.
- McIntosh, W.C. & Chapin, C.E., 2004. Geochronology of the central Colorado volcanic field. *New Mexico Bureau of Geology and Mineral Resources, Bulletin*, **160**, 205-237.
- Meert, J.G., Nédélec, A., Hall, C., Wingate, M.T.D. & Rakotondrazafy, M., 2001. Paleomagnetism, geochronology and tectonic implications of the Cambrian-age Carion granite, central Madagascar. *Tectonophysics*, **340**, 1-21.
- Meeves, H.C., Harrer, C.M., Salsbury, M.H., Konselman, A.S. & Shannon, S.S., Jr., 1966. Reconnaissance of beryllium-bearing pegmatite deposits in six western states: Arizona, Colorado, New Mexico, South Dakota, Utah, and Wyoming. US Department of Interior. *Bureau of Mines information circular*, **8298**, Washington, 34 p.
- Melcher, F., Sitnikova, M.A., Graupner, T., Martin, N., Oberthür, T., Henjes-Kunst, F., Gäbler, E., Gerdes, A., Brätz, H., Davis, D.W. & Dewaele, S., 2008. Fingerprinting of conflict minerals: columbite-tantalite ("coltan") ores. *SGA News*, **23**, 1 & 7-14.
- Mel'nikov, E.P., Keil'man, G.A., Sokolov, Yu.M. & Mel'nikova, N.I., 1975. Phylogenesis of muscovite pegmatites of the Urals. In Rodionov G.G. & Sokolov Yu.M. (eds.) *Muscovite pegmatites of the USSR*. Moscow, "Nauka", 214-218. (in Russian).
- Menzies, M.A., 1999. Granitic pegmatites of the Sawtooth batholith, Idaho. *Canadian Mineralogist*, **37**, 816-817.
- Menon, R.D., Santosh, M. & Yoshida, M., 1994. Gemstone mineralization in southern Kerala, India. *Journal of Geological Society of India*, **44**, 241-252.

- Miller, J.S., Santosh, M., Pressley, R.A., Clements, A.S. & Rogers, J.J.W., 1996. A Pan-African thermal event in southern India. *Journal of Southeast Asian Earth Sciences*, **14**, 127-136.
- Minnaar H. & Theart H.F.J., 2006. The exploitability of pegmatite deposits in the lower Orange River area (Vioolsdrif – Henkries – Steinkopf). *South African Journal of Geology*, **109**, 341-352.
- Montero, P., Bea, F., Gerdes A., Fershtater, G., Zin'kova ,E., Borodina, N., Osipova, T. & Smirnov, V., 2000. Single-zircon evaporation ages and Rb/Sr dating of four major Variscan batholiths of the Urals. A perspective on the timing of deformation and granite generation. *Tectonophysics*, **317**, 93–108.
- Morteani, G., Preinfalk, C., Spiegel, W. & Bonalumi, A., 1995. The Achala granitic complex and the pegmatites of the Sierras Pampeanas (Northwest Argentina): A study of differentiation. *Economic Geology*. **90**, 636–647.
- Morteani, G., Preinfalk, A. & Horn, A.H., 2000. Classification and mineralization potential of the pegmatites of the Eastern Brazilian Pegmatite Province. *Mineralium Deposita*. **35**, 638–655.
- Mortimer, G.E., Cooper, J.A. & James, P.R., 1987. U-Pb and Rb/Sr geochronology and geological evolution of the Harts Range ruby mine area of the Arunta Inlier, central Australia. *Lithos*, **20**, 445-467.
- Nalini, H.A. Jr., Bilal, E. & Correia-Neves, J.M., 2000. Syn-collisional peraluminous magmatism in the Rio Doce region: mineralogy, geochemistry and isotopic data of the Neoproterozoic Urucum Suite (Eastern Minas Gerais State, Brazil). *Revista Brasileira de Geociências*, **30**, 120–125.
- Neymark, L.A., Sokolov, Yu.M., Drubetskoy, E.R., Yakovleva, S.Z., Korikovskiy, S.P., Sez'ko, A.I. & Azhimova, A.I., 1990. Age of regional metamorphism and muscovite pegmatites generation in Mama-Bodaybo trough. *In Isotopic dating of endogenous ore formations*. Conference abstracts, 130-132. (in Russian).
- Noce, C.M., Macambira, M.B. & Pedrosa-Soares, A.C., 2000. Chronology of Late Proterozoic-Cambrian granitic magmatism in the Araçuaí belt, Eastern Brazil, based on single zircon evaporation dating. *Revista Brasileira de Geociências*, **30**, 25–29.
- Northrup, C. J., & Mawer, C. K., 1990. Syntectonic emplacement of the Harding pegmatite, Taos County, New Mexico. *In* Bauer, P.W., Lucas, S.G., Mawer, C.K. & McIntosh, W.C. (eds) *New Mexico Geological Society Fall Field Conference Guidebook 41: Tectonic development of the Southern Sangre de Cristo Mountains, New Mexico*. NMGS, 450 p.
- Norton, J.J. & Redden, J.A., 1990. Relations of zoned pegmatites to other pegmatites, granite, and metamorphic rocks in the southern Black Hills, South Dakota. *American Mineralogist*, **75**, 631-655.
- Novak, M., Černý, P., Kimbrough, D.L., Taylor, M. C. & Ercit T. S., 1998. U-Pb ages of monazite from granitic pegmatites in the Moldanubian Zone and their geological implications. POCEEL International Symposium, Praha, September 30-October 2. *Acta Universitatis Carolinae - Geologica*, **42**, 309–310.
- Novák, M., Povondra P. & Selway, J.B., 2004. Schorl-oxy-schorl to dravite-oxy-dravite tourmaline from granitic pegmatites; examples from the Moldanubicum, Czech Republic. *European Journal of Mineralogy*, **16**, 323–333.
- Olson, J.C. & Hinrichs, E.N., 1960. Beryl-bearing pegmatites in the Ruby Mountains and other areas in Nevada and northwestern Arizona: *U.S. Geological Survey Bulletin*, 1082D, 200p.



- Oppy I.D., Cayley R.A. & Caluzzi J., 1995. The geology and prospectivity of the Tallangatta 1:250 000 sheet. *Victorian Initiative for Minerals and Petroleum Report 10*. Department of Agriculture, Energy and Minerals, 161 p.
- Ovchinnikov, L.N. & Kuz'menko, M.V. (eds.), 1976. Fields of rare-metal granitic pegmatites: geochemical specialization and distribution patterns. Moscow, "Nauka", 332p.
- Page R.W., Griffin, T.J., Tyler, I.M. & Sheppard, S., 2001. Geochronological constraints on tectonic models for Australian Palaeoproterozoic high-K granites. *Journal of the Geological Society*, London, **158**, 535–545.
- Page, R.W., Stevens, B.P.J. & Gibson, G.M., 2005a. Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia. *Economic Geology*, **100**, 633-661.
- Page, R.W., Conor, C.H.H., Stevens, B.P.J., Gibson, G.M., Preiss, W.V. & Southgate, P.N., 2005b. Correlation of Olary and Broken Hill Domains, Curnamona Province: Possible relationship to Mt Isa and other North Australian Pb-Zn-Ag-bearing successions. *Economic Geology*, **100**, 663-676.
- Pandit, M.K., Carterb, L.M., Ashwal, L.D., Tucker, R.D., Torsvik, T.H., Jamtveit, B. & Bhushan, S.K., 2003. Age, petrogenesis and significance of 1 Ga granitoids and related rocks from the Sendra area, Aravalli Craton, NW India. *Journal of Asian Earth Sciences*, **22**, 363–381.
- Pankhurst, R.J., Rapela, C.W. & Fanning, C.M., 2000. Age and origin of coeval TTG, I- and S-type granites in the Famatinian belt of NW Argentina. *Transactions of the Royal Society of Edinburgh: Earth Sciences*, **91**, 151–168.
- Partington, G.A., McNaughton, N.J. & Williams, I.S., 1995. A review of the geology, mineralization, and geochronology of the Greenbushes pegmatite, Western Australia. *Economic Geology*, **90**, 616-635.
- Pasteels, P., Demaiffe, D. & Michot, J., 1979. U-Pb and Rb/Sr geochronology of the eastern part of the south Rogaland igneous complex, southern Norway. *Lithos*, **12**, 199-208.
- Pease, V., 2001. East European Craton margin source for the allochthonous Northern Terrane of Tajmyr, Arctic Siberia. *EOS Transactions, American Geophysical Union Fall Meeting Supplement*, **82**, 47.
- Peytcheva, I., Securanov, D., Arnaudova, R. & Arnaudov, V., 1994. Chamber pegmatites from Central Rhodopes, Bulgaria – mineral paragenesis, chemistry, age determination. *16-th IMA General Meeting at Pisa, Italy, 3-8 September 1994, Abstracts*, 326.
- Peytcheva, I., von Quadt, A., Ovtcharova, M., Handler, R., Neubauer, F., Salnikova, E., Kostitsyn, Y., Sarov, S. & Kolcheva, K., 2004. Metagranitoids from the eastern part of the Central Rhodopean Dome (Bulgaria): U–Pb, Rb–Sr and  $^{40}\text{Ar}/^{39}\text{Ar}$  timing of emplacement and exhumation and isotope-geochemical features. *Mineralogy & Petrology*, 2004, **82**, 1-31.
- Pezzotta, F., 2000. Internal structures, parageneses and classification of the miarolitic Li-bearing complex pegmatites of Elba Island (Italy). *Memorie della Società di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*, **30**, 29-43.
- Pezzotta, F., 2005. A first attempt to the petrogenesis and the classification of granitic pegmatites of the Itremo region (central Madagascar). *International meeting on crystallization processes in granitic pegmatites (Elba), Abstract*, [www.elba-pegmatites.org].
- Pezzotta, F., Diella, V. & Guastoni, A., 2005. Scandium silicates from the Baveno and Cuasso al Monte NYF-granites, Southern Alps (Italy): mineralogy and genetic inferences. *American Mineralogist*, **90**, 1442-1452.
- Poujol, M., 2001. U–Pb isotopic evidence for episodic granitoid emplacement in the Murchison greenstone belt, South Africa. *Journal of African Earth Sciences*, **33**, 155–163.

- Poujol, M. & Robb, L.J., 1999. New U–Pb Zr ages on gneisses and pegmatite from south of the Murchison greenstone belt, South Africa. *South Africa Journal of Geology*, **102**, 93–97.
- Premo, W., Morton, D.M., Snee, L., Naeser, N.D. & Fanning, C.M., 1998. Isotopic ages, cooling histories, and magmatic origins for Mesozoic tonalitic plutons from the N. Peninsular Ranges batholith, S. California. *Geological Society of America Abstracts with Programs*, **30**, no. 5, 59–60.
- Premo, W.R. & Fanning, C.M., 2000. SHRIMP U–Pb zircon ages for the Big Creek gneiss, Wyoming and the Boulder Creek batholith, Colorado: Implications for the timing of early Proterozoic accretion of the northern Colorado province. *Rocky Mountain Geology*, **35**, 31–50.
- Redden, J.A., Peterman Z.E., Zartman, R.E. & DeWitt, E., 1990. U–Th–Pb zircon and monazite ages and preliminary interpretation of the tectonic development of Precambrian rocks in the Black Hills. In J.F. Lewry & M.R. Stauffer (eds.) *The Early Proterozoic Trans-Hudson Orogen of North America*. Geological Association of Canada Special Paper, **37**, 229–251.
- Reid, A., Wilson, C.J.L., Shun, L., Pearson, N. & Belousova, E., 2007. Mesozoic plutons of the Yidun Arc, SW China: U/Pb geochronology and Hf isotopic signature. *Ore Geology Reviews*, **31**, 88–106.
- Reznitskii, L.Z., Kotov, A.B., Salnikova, E.B., Vasil'ev, E.P., Yakovleva, S.Z., Kovach, V.P. & Fedoseenko, A.M., 2000. The age and time span of formation of phlogopite and lazurite deposits in the southwestern Baikal Area: U–Pb geochronology. *Petrology*, **8**(1), 66–76.
- Rijks, H.R.P. & van der Veen, A.N., 1972. The geology of tin-bearing pegmatites of eastern part of Kamativi district, Rhodesia. *Mineralium Deposita*, **7**, 383–395.
- Roizenman, F.M., 1998. New promising mineral deposits of potassium and sodium feldspars in Russia (South Yakutia and Karelia). Paper I: Potassium feldspar raw materials in the Central Aldan mining district. *Izvestia VUZov, Geologiya i Razvedka (Geology and Exploration) brunch*, no.5, 60–68. (in Russian).
- Romer, R.L. & Lehman, B., 1995. U–Pb columbite age of Neoproterozoic Ta–Nb mineralization in Burundi. *Economic Geology*, **90**, 2303–2309.
- Romer, R.L. & Smeds, S.A., 1994. Implications of U–Pb ages of columbite–tantalites from granitic pegmatites for the Palaeoproterozoic accretion of 1.90–1.85 Ga magmatic arcs to the Baltic Shield. *Precambrian Research*, **67**, 141–158.
- Romer, R.L. & Smeds, S.-A., 1996. U–Pb columbite ages of pegmatites from Sveconorwegian terranes in southwestern Sweden. *Precambrian Research*, **76**, 15–30.
- Romer, R.L. & Smeds, S.A., 1997. U–Pb columbite chronology of post-kinematic Palaeoproterozoic pegmatites in Sweden. *Precambrian Research*, **82**, 85–99.
- Rossovskiy, L.N., 1981. Rare-metal pegmatites with precious stones and conditions of their formation (Hindu Kush). *International Geology Review*, **23**, 1312–1320.
- Rossovskiy L.N. & Konovalenko S.I., 1976. South Asian pegmatite belt. *Doklady Academy of Sciences of the USSR*, **229**, 89–91. (in Russian).
- Rougvie, J. R., Carlson, W. D., Connelly, J. N., Roback, R. C. & Copeland, P., 1996. Late thermal evolution of Proterozoic rocks in the northeastern Llano uplift, central Texas. *Geological Society of America Abstracts with Programs*, **28**(7), A376.
- Rougvie, J.R., Carlson, W.D., Copeland, P. & Connelly, J.N., 1999. Late thermal evolution of Proterozoic rocks in the northeastern Llano Uplift, central Texas. *Precambrian Research*, **94**, 49–72.



- Sal'ye, M.E. & Glebovitsky, V.A., 1976. Metallogenic specialization of the granitic pegmatites of eastern Baltic shield. Leningrad, "Nauka", 188 p. (in Russian).
- Scherer, E., Münker, C. & Mezger, K., 2001. Calibration of the lutetium-hafnium clock. *Science*, **293**, 683–687.
- Seacher, K., Steenfelt, A. & Garde, A.A., 2008. Pegmatites and their potential for mineral exploration in Greenland. *Geology and Ore*, **10**, 2-12.
- Serdyuk, S.S. (editor-in-chief), 2002. Krasnoyarsk region mineral resources. V.2: Cadastre of mineral deposits. KNIIG&MS, Krasnoyarsk. 582 p. (in Russian).
- Schaltegger, U. & Brack, P., 2007. Crustal-scale magmatic systems during intracontinental strike-slip tectonics: U, Pb and Hf isotopic constraints from Permian magmatic rocks of the Southern Alps. *International Journal of Earth Sciences*, **96**, 1131–1151.
- Shmakin, B.M., 1958. Archean granitoids of the Kuranakh phlogopite district on the Aldan shield. *Izvestia VUZov, Geologiya i Razvedka (Geology and Exploration) brunch*, no.10, 46-60. (in Russian).
- Sheppard, S., Rasmussen, B., Muhling, J.R., Farrell, T.R. & Fletcher, I.R., 2007. Grenvillian-aged orogenesis in the Palaeoproterozoic Gascoyne Complex, Western Australia: 1030–950 Ma reworking of the Proterozoic Capricorn Orogen. *Journal of Metamorphic Geology*, **25**, 477-494.
- Schneider, D.A., Edwards, M.A., Zeitler, P.K. & Coath, C.D., 1999. Mazeno Pass Pluton and Jutial Pluton, Pakistan Himalaya: age and implications for entrapment mechanisms of two granites in the Himalaya. *Contributions to Mineralogy and Petrology*, **136**, 273–284.
- Sinkankas, J., 1968. Classic mineral occurrences: I. Geology and mineralogy of the Rutherford pegmatites, Amelia, Virginia. *American Mineralogist*, **53**, 373-405.
- Smeds, S.-A. & Cerný, P., 1989. Pollucite from the Proterozoic petalite-bearing pegmatites of Utö, Stockholm archipelago. *Geologiska Foereningens i Stockholm Foerhandlingar*, **111**, 361-372.
- Solar, G.S., Pressley, R.A., Brown, M. & Tucker, R.D., 1998. Granite ascent in convergent orogenic belts: testing a model. *Geology*, **26**, 711-714.
- Smith, H. A., & Barreiro, B., 1990. Monazite U-Pb dating of staurolite grade metamorphism in pelitic schists. *Contributions to Mineralogy and Petrology*, **105**, 602–615.
- Smith, S.R., Foster, G.L., Romer, R.L., Tindle, A.G., Kelley, S.P., Noble S.R., Horstwood M., Breaks, F.W., 2004. U-Pb columbite-tantalite chronology of rare-element pegmatites using TIMS and Laser Ablation-Multi Collector-ICP-MS. *Contributions to Mineralogy and Petrology*, **147**, 549–564.
- Snee, L.W. & Foord, E.E., 1991.  $^{40}\text{Ar}/^{39}\text{Ar}$  thermochronology of granitic pegmatites and host rocks, San Diego County, California. *Geological Society of America Abstracts with Programs, San Diego, California*, **23**, 189.
- Söllner, F., Lammerer, B. & Weber-Diefenbach, K., 1991. Die Krustenentwicklung in der Kusternregion nördlich von Rio de Janeiro/Brasilien. *Munchner Geologische Hefte* 4, Munchen, 100 p.
- Söllner, F., Gerdes, A, Grosse, P. & Toselli, A.J., 2007. U-Pb age determinations by LA-ICP-MS on zircons of the Huaco granite, Serria de Velasco (NW-Argentina): A long term history of melt activity within an igneous body. *20th Colloquium on Latin American Earth Sciences, Kiel, Germany, Abstracts*, 57-58.
- Sosa, G.M., Augsburg, M.S., & Pedregosa, J., 2002. Columbite-group minerals from rare metal granitic pegmatites of the Sierra de San Luis, Argentina. *European Journal of Mineralogy*, **14**, 627–636.

- Stern, R.A. & Rayner, N., 2003. Ages of several xenotime megacrysts by ID-TIMS: potential reference materials for ion microprobe U-Pb geochronology. Radiogenic Age and Isotopic Studies: Report 16. *Geological Survey of Canada, Current Research*, 2003-F1, 7 p.
- Stoll, W.C., 1950. Mica and beryl pegmatites in Idaho and Montana. *USGS Professional Paper*, **229**, 64 p.
- Stuart-Smith, P.G., Camacho, A., Sims, J.P., Skirrow, R.G., Lyons P., Pieters P., Black L. & Miro, R., 1999. Uranium–lead dating of felsic magmatic cycles in the southern Sierras Pampeanas, Argentina: implications for the tectonic development of the proto-Andean Gondwana margin. In: Ramos, V.A. & Keppie, J.D. (eds) *Laurentia–Gondwana Connections before Pangea. Geological Society of America, Special Papers*, **336**, 87–114.
- Sweetapple, M.T. & Collins, P.L.F., 2002. Genetic framework for the classification and distribution of Archean rare metal pegmatites in the North Pilbara craton, Western Australia. *Economic Geology*, **97**, 873–895.
- Switzer, G., 1939. Granite pegmatites of the Mt Antero region, Colorado. *American Mineralogist*, **24**, 791-809.
- Syritso, L.F., Badanina,, E.V., Abushkevich, V.S. & Volkova, E.V., 2006. Ways of solving the problem of the origin and conditions of forming of the ore-bearing rare-metal granites. *12th Quadrennial IAGOD symposium: Understanding the genesis of ore deposits, Moscow, 21-24 August 2006*. Abstracts on CD-ROM, 049.pdf.
- Thomas, R.J., Chevallier, L.C., Gresse, P.G., Harmer, R.E, Eglinton, B.M., Armstrong, R.A., de Beer, C.H., Martini, J.E.J., de Kock, G.S., Macey, P. & Ingram, B., 2002. Precambrian evolution of the Sirwa Window, Anti-Atlas Orogen, Morocco. *Precambrian Research*, **118**, 1–57.
- Tindle, A.G. & Breaks, F.W. 1998. Oxide minerals of the Separation Rapids rare-element granitic pegmatite group, northwestern Ontario. *Canadian Mineralogist*, **36**, 609–635.
- Tomascak, P.B., Krogstad, E.J. & Walker, R.J., 1996. U-Pb monazite geochronology of granitic rocks from Maine: implications for late Paleozoic tectonics in the northern Appalachians. *Journal of Geology*, **104**, 185–195.
- Trumbull, R.B., 1993. A petrological and Rb/Sr isotopic study of an early Archean fertile granite-pegmatite system: the Sinceni Pluton in Swaziland. *Precambrian Research*, **61**, 89-116.
- Trumbull, R. B., 1995. Tin mineralization in the Archean Sinceni rare element pegmatite field, Kaapvaal Craton, Swaziland. *Economic Geology*, **90**, 648-657.
- Tubosun, I.A., Lancelot, J.R., Rahaman, M.A. & Ocan, O., 1984. U–Pb Panafrican ages of two charnockite-granite association from southwestern Nigeria. *Contributions to Mineralogy and Petrology*, **88**, 188–195.
- Turniak K, Tichomirowa M and Bombach K, 2005. Zircon Pb-evaporation ages of granitoids from the Strzegom-Sobótka Massif (SW Poland). *Mineralogical Society of Poland – Special Papers*, **25**, 241-245.
- Varlamoff, N., 1972. Central and West African rare-metal granitic pegmatites, related aplites, quartz veins and mineral deposits. *Mineralium Deposita*, **7**, 202-216.
- Vejnar, Z., 1968. The genesis of pegmatites and its relationship to the metamorphic and magmatic development of the West-Bohemian crystalline complexes. *Rozpravy Eeskoslovenské Akademie Vid Praha*, **78**, 1–64.
- Vernikovskiy, G.A., Sal'nikova, E.B., Kotov, A.B., Ponomarchuk, V.A., Kovach, V.P., Travin, A.V., Yakovleva, C.Z. & Berezhnaya, N.G., 1998. Age of post-collision granitoids of northern Taimyr: U-Pb, Sm/Nd, Rb/Sr and Ar-Ar data. *Doklady Russian Academy of Sciences*, **363**(3), 375-378. (in Russian).

- Vernikovskiy, V.A., Vernikovskaya, A.E., Kotov, A.B., Sal'nikova, E.B. & Kovach, V.P., 2003. Neoproterozoic accretionary and collisional events on the western margin of the Siberian Craton: New geological and geochronological evidence from the Yenisey Ridge. *Tectonophysics*, **375**, 147–168.
- Viana, R.R., Manttari I., Henjes-Kunst & Jordt-Evangelista, H., 2003. Age of pegmatites from eastern Brazil and implications of mica intergrowths on cooling rates and age calculations. *Journal of South American Earth Sciences*, **16**, 493-501.
- Vignola, P., Diella, V., Oppizzi, P., Tiepolo, M. & Weiss, S., 2008. Phosphate assemblages from the Brissago granitic pegmatite, western Southern Alps, Switzerland. *Canadian Mineralogist*, **46**; 635-650.
- Vladimirov, A.G., Borisenko, A.S., Rudnev, S.N., Chupin, V.P., Kruk, N.N., Titov, A.V., Borovikov, A.A., Pavlova, G.G., Averkin, Yu.A., Turkina, O.M., Vladimirov, V.G. & Mortsev, N.K., 2000. Ore-bearing granite plutons of the Southern Pamir, Tajikistan. *In* Lehmann, B., Seltman, R. & Kremenetsky, A.A. (eds.) *Ore-bearing granites of Russia and adjacent countries*, Moscow, IMGRE, 331-348.
- Vladimirov, A.G., Kozlov, M.S., Shokal'skii, S.P., Khalilov, V.A., Rudnev, S.N., Kruk, N.N., Vystavnoi, S.A., Borisov, S.M., Berezhnikov, Y.K., Metsner, A.N., Babin, G.A., Mamlin, A.N., Murzin, O.M., Nazarov, G.V. & Makarov, V.A., 2001. Major epochs of intrusive magmatism of Kuznetsk Alatau, Altai, and Kalba (from U-Pb isotope dates). *Russian Geology and Geophysics*, **42**, 1089–1109.
- Volkert R.A., Zartman R.E. & Moore P.B., 2005. U–Pb zircon geochronology of Mesoproterozoic postorogenic rocks and implications for post-Ottawan magmatism and metallogenesis, New Jersey Highlands and contiguous areas, USA. *Precambrian Research*, **139**, 1–19.
- Volobuyev, M.I., Zykov, S.I., Stupnikova N.I., Strizhov V.P. & Musatov, D.I., 1964. Geochronology of the Yenisei Ridge. *In Reports of soviet geologists at the 22-th IGC. Problem 3: Absolute geochronology*. “Nauka”, Moscow, 108-127. (in Russian).
- Von Knorring, O. & Condliffe, E., 1987. Mineralized pegmatites in Africa. *Geological Journal*, **22**, S2, 253-270.
- Walker, N.W., 1992. Middle Proterozoic geologic evolution of the Llano Uplift, Texas: Evidence from U-Pb zircon geochronometry. *Geological Society of America Bulletin*, **104**, 494–504.
- Wang, D.-H., Li, J.-K. & Fu, X.-F., 2005.  $^{40}\text{Ar}/^{39}\text{Ar}$  dating for the Jiajika pegmatite-type rare metal deposit in western Sichuan and its significance. *Geochimica*, **34** (6), 3-9 (in Chinese with a resume in English).
- Wang T., Tong Y., Jahn B., Zou T., Wang Y., Hong D. & Han B., 2007. SHRIMP U–Pb Zircon geochronology of the Altai no. 3 pegmatite, NW China, and its implications for the origin and tectonic setting of the pegmatite. *Ore Geology Reviews*, **32**, 325-336.
- Wiedenbeck, M. & Watkins, K.P., 1993. A time scale for granitoid emplacement in the Archean Murchison Province, Western Australia, by single zircon geochronology. *Precambrian Research*, **61**, 1–26.
- Westraat J.D., Kisters A.F.M., Poujol M. & Stevens G., 2005. Transcurrent shearing, granite sheeting and the incremental construction of the tabular 3.1 Ga Mpuluzi batholith. *Journal of the Geological Society, London*, **162**, 373-388.
- Witt, W. K., 1992. Heavy-metal characteristics, structural settings, and parental granites of pegmatites in Archaean rocks of the eastern Yilgarn Craton. *Western Australia Geological Survey*, Record 1992/10, 8–24.
- Worku, H., 1996. Geodynamic development of the Adola Belt (southern Ethiopia) in the Neoproterozoic and its control on gold mineralisation. Ph.D. Thesis, Berlin Technical University, 156 p.
- Wright, J.E. & Snoke, A.W., 1993. Tertiary magmatism and mylonitization in the Ruby– East Humboldt metamorphic core complex, northeastern Nevada: U-Pb geochronology and Sr, Nd, and Pb isotope geochemistry. *Geological Society of America Bulletin*, **105**, 935– 952.

- Zagorsky, V.E., Makagon, V.M., Shmakin, B.M., Makrygina, V.A. & Kuznetzova, L.G., 1997. Granitic pegmatites, v.2: Rare metal pegmatites. Novosibirsk, "Nauka", 285 p. (in Russian).
- Zagorsky, V.E., Peretyazhko, I.S. & Shmakin, B.M., 1999. Granitic pegmatites, v.3: Mirolitic pegmatites. Novosibirsk, "Nauka", 488 p. (in Russian).
- Zakharov, Yu.I., 1975. Muscovite and muscovite-rare-metal pegmatites of Timyr. *In* Muscovite pegmatites of the USSR. Moscow, "Nauka", 233-241. (in Russian).
- Zhao, J.-X. & Bennett, V.C., 1995. SHRIMP U-Pb zircon geochronology of granites in the Arunta Inlier, central Australia: implications for Proterozoic crustal evolution. *Precambrian Research*, **71**, 17-43.
- Zhu, Y.F., Zeng, Y.S. & Gu, L.B., 2006. Geochemistry of the rare metal-bearing pegmatite no. 3 vein and related granites in the Keketuohai region, Altay Mountains, northwest China. *Journal of Asian Earth Sciences*, **27**, 61-77.