

SUPPLEMENTAL TABLE 1: Overview of PET/MR imaging systems described in literature

Short name	Company/university	Year	Usage*	MR field strength (T)	Scintillator†	Detector technology‡	Crystal rings	Blocks/ ring	Crystal block	Crystal size (mm ³)	Axial FOV (cm)	Transaxial FOV (cm)	Spatial resolution (mm)	Sensitivity (%)	Timing resolution (ns)	Energy resolution (%)	Reference	
1	"McPET I"	University of California Los Angeles, CA (US)	1997	P-R-Sim	0.2	LSO	MC-PMT/ fibers	1	48	16§	2x2x10	1.0	<3.8	2.1	N.A.	20	41%	(1)
2	"McPET II"	University of California Los Angeles, CA (US)	1997	P-R-Sim	0.2 and 9.4	LSO	MC-PMT/ fibers	1	72	24§	2x2x5	0.2	<5.4	2.1	N.A.	26	45%	(2)
3	Kings	Kings College London (UK)	2005	P-R-Sim	3	LSO	PSPMT/ fibers	1	8	1x4x4	2x3x5	0.3	5.6	1.4-3.2	0.95	20.9	70%	(3)
4	Split Magnet	University of Cambridge Cambridge (UK)	2006	P-R-Sim	1	LSO	PSPMT/ fibers	48	24	12x12	1.52x1.52x10	7.2	<14.7	1.6	3.6	3.6	27%	(4)
5	West Virginia	West Virginia University Morgantown, WV (US)	2007	P-R-Sim	3	LSO	PSPMT/ fibers	20	2	20x20	2.5x2.5x15	5.0	8.0	2.65	N.A.	N.A.	85%	(5)
6	Kobe City I	Kobe City College of Technology, Kobe (JP)	2009	P-R-Sim	0.15	MLS	PSPMT/ fibers	3	32	2x2x2	2.5x3.5x3.5	0.5	N.A.	2.8-3.0	0.25	6	29%/50%	(6)
7	Fieldcycled	Western Ontario London, ON (CA)	2009	P-R-Seq	0.30	BGO	PSPMT/ fibers	8	2	8x8	6.2x5.6x30	-5.0	N.A.	N.A.	N.A.	N.A.	N.A.	(7)
8	Kobe City II	Kobe City College of Technology, Kobe (JP)	2010	P-R-Sim	0.30	LGSO	PSPMT/ fibers	11	16	11x9x2	1.9x2.2x6/7	2.1	8.0	2.4-2.9	1.5	5	40%	(8)
9	Nagoya	Nagoya University Nagoya (JP)	2012	P-R-Sim	0.30	LGSO	PSPMT/ fibers	13	16	11x13x2	0.9x1.3x5/6	2.1	5.6	1.2	1.5	3.1	24%	(9)
10	"nanoScan"	Mediso Ltd. Budapest (HU)	2013	P-Co-Seq	1	LYSO	PSPMT	81	12	39x81	1.12x1.12x13	9.4	4.5/9.4/12.0	1.5-2.1	8.4	N.A.	N.A.	(10)
11	UCD	University of California Davis, CA (US)	2006	P-R-Sim	7	LSO	PSAPD/ fibers	8	16	8x8	1.43x1.43x6	1.2	3.5	1.1-1.7	0.35	2.5-7.5	25±5.5%	(11)
12	Tübingen I	University of Tübingen Tübingen (DE)	2007	P-R-Sim	7	LSO	APD	12	10	12x12	1.6x1.6x4.5	1.9	4.0	1.9	0.23	8	14.6%-29.9%	(12)
13	"ratCap"	Brookhaven National Laboratory, Upton, NY (US)	2011	P-R-Sim	9.4	LSO	APD	8	12	4x8	2.2x2.2x5	1.8	3.8	1.2	0.3	13.9	13%	(13)
14	Tübingen II	University of Tübingen Tübingen (DE)	2013	P-R-Sim	7	LSO	APD	45	16	15x15	1.5x1.5x10	7.2	7.2	>1.5	N.A.	N.A.	N.A.	(14)
15	Sogang I	Sogang University Seoul (KR)	2011	P-R-Sim	3	LYSO	SiPM	4	16	4x4	3x3x10	1.3	<7.0	2.8-4.1	0.65	1.5	17.6%	(15)
16	Seoul	Seoul National University, Seoul (KR)	2012	P-R-Sim	3	LGSO	SiPM	20	12	20x18	1.5x1.5x7	3.2	13.6	1.0-1.5	0.12	1.23	14%	(16)
17	RWTH	RWTH Aachen Aachen (DE)	2012	P-R-Sim	3	LYSO	SiPM/ digital	22	10	22x22	1.3x1.3x10	3.0	16.0	2.2	0.6	N.A.	12.9%	(17)
18	Eulji	Eulji University Gyeonggi (KR)	2012	P-R-Sim	3	LYSO	SiPM fibers/	6	12	6x6	2.47x2.74x20	N.A.	N.A.	N.A.	N.A.	2	18%	(18)
19	Kobe City III	Kobe City College of Technology, Kobe (JP)	2012	P-R-Sim	0.15	LGSO	SiPM phoswich	11	16	11x9x2	1.1x1.2x5/6	13.2	8.0	1.6	0.6	3.1	27%	(19)
20	Sogang II	Sogang University Seoul (KR)	2013	P-R-Sim	3	LYSO	SiPM	4	72	4x4	3x3x20	12.9	25.0	3.1-6.6	0.33	4.2	18.1%	(20)
22	"Ingenuity"	Koninklijke Philips NV Eindhoven (NL)	2011	C-Co-Seq	3	LYSO	PMT	44	28	23x44	4x4x22	18	60	4.6-5.3	0.7	0.52	11.6%	(21)
21	"brainPET"	Siemens AG München (DE)	2008	C-R-Sim	3 and 9.4	LSO	APD	72	32	12x12	2.5x2.5x20	19.3	32	1.8-6.4	7.2	4.9	17.1%	(22,23)
23	"mMR"	Siemens AG München (DE)	2012	C-Co-Sim	3	LSO	APD	64	56	8x8	4x4x20	25.8	59.4	4.3-6.6	1.5	2.93	14.5%	(24)
24	GE¶	GE Healthcare Waukesha, WI (US)	2014	C-Co-Sim	3	LYSO	SiPM	45	112	4x9	3.95x5.3x25	25	60	3.9	2.4	0.40	10.5%	(25)

*Code specifying the field (P: preclinical, C: clinical), the status (R: research, Co: commercial) and operation (Sim: simultaneous, Seq: sequential).

†Abbreviations: BGO: bismuth germanate; LGSO: lutetium gadolinium oxyorthosilicate; LSO: lutetium oxyorthosilicate; LYSO: lutetium yttrium oxyorthosilicate; MLS: mixed lutetium silicates.

‡Abbreviations: APD: avalanche photodiode; MC: multichannel; PMT: photomultiplier tube; PS: position sensitive; SiPM: silicon photomultiplier.

§Describes the number of crystals per MC-PMT.

|| A variant of the ratCap has recently been introduced commercially by MR Solutions Ltd.

¶This scanner has been presented at the RSNA and SNM conferences but is not yet commercially available.

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