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ภาคผนวก

สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ตารางที่ 6 แสดงระยะที่จุดอ้างอิงเคลื่อนที่ไปตามระนาบอ้างอิงระหว่างก่อนและหลังจัด
ฟันจากการซ้อนทับภาพรังสี 4 เทคนิค

เทคนิค	ระยะที่เคลื่อนไป	ตาม	แนว	แกน	x	ตาม	แนว	แกน	y
ANS	ตัวอย่างที่	IE	IA	MBC	MBA	IE	IA	MBC	MBA
	1	-2.8	1.25	5.45	3.55	-0.5	2	-1.3	-0.75
	2	-2.5	3.9	5.5	-0.65	-2.45	1.05	-0.75	-0.75
	3	-2.75	1	3.2	3.3	-2.1	1.2	-3.75	-1.4
	4	-3.8	0.75	2.65	2.2	-3.4	-0.7	-3.5	-3.5
	5	2.9	1.8	2.5	2.45	1.95	1.65	0.85	1.15
	6	-3.4	0	4.45	1.15	-1.2	0.75	-2.75	-1.45
	7	-4.65	-0.45	5.4	4.4	-0.5	2.5	-2	-1.45
	8	-8.95	-2.3	2.3	-1.5	-3.25	1.25	-3.35	-1.85
	9	-2.7	-1.3	2.7	2.7	1.35	1.8	0	0.55
	10	-1.6	2.25	7.3	1.7	-1.1	1.05	-1.7	-1.1
	11	-3.2	1.25	4.75	2.15	-0.7	1.8	-0.55	-0.85
	12	-7.35	-2.25	1	-1.2	-3.7	0.45	-1.2	-1.6
	13	-3.55	2.95	8.25	3.2	-5.65	0	-2.05	-2.05
	14	-6.35	-1	2.4	2.5	-5.1	-2.3	-5.25	-4.5
	15	4.75	2.2	5.05	2.2	1.65	-1	-1.45	-1.45
	16	-8.1	0.4	5.55	0.7	-6.4	1.35	-2.75	-0.9
	17	-3.9	-1.75	6.85	3.1	-0.75	1.05	0	-0.8
	18	-5.9	0.9	3.35	2.55	-1.1	3.2	-0.55	-0.5
	19	-2.75	0.65	10.1	4.1	-1.65	1.15	-0.65	-1.65
	20	-4.4	1.15	7.2	4.9	-3	0.7	-2.4	-2.35
	21	-5.35	2.7	7.15	2.7	-4.8	1	-2.4	-2
	22	-3.7	-2.15	7.75	3.85	-0.75	0.5	-5.4	-3.8
	23	-4.85	0	7.2	3.4	0	3.15	-2.5	-3.25
	24	-4.5	1.8	1.35	-5.1	-2.8	0.9	-0.8	-0.4
	25	-6.7	-1.7	2.2	0.75	-0.75	2.05	-1.85	-2.15
	26	-3.55	0	6.95	6.2	-2.75	0	-2.45	-2.85
	27	-6.55	-0.55	4.95	2.25	-3.35	1.2	-1.5	-1.5
	28	-4.5	0	5.35	1.8	-1.8	1.55	-1.6	-1.6
	29	-6.6	-0.75	0.35	0.5	-4.4	-0.5	-1	0
	30	0	0.7	8.5	6.05	-0.9	-0.85	-1.8	-0.95
	31	-4.6	-0.4	6.8	4.5	-1.65	2.15	-0.5	0
	32	-5	1.85	4.3	0	-4.3	0.55	-3.2	-5.65
	33	-4.3	3.45	8.45	6.9	-2.15	2.8	-1.15	-0.4
	34	-6.4	0	5.85	3.55	-2.9	2.25	-3.65	-2.9
	35	-3.25	-1	4.9	0.85	-0.95	1.6	-0.35	-0.7
	36	-5	2.3	7.7	1.65	-3.35	3.75	-0.65	-0.45
	37	-3.8	4.2	7.5	3.9	-6.45	-0.9	-3	-3
	38	0	1.05	3.3	0	-2.35	-1.55	-2.6	-2.6
	39	0	1.25	0.4	-2.4	-1.2	0	-3.4	-1.55
	40	-3.55	-0.65	1.25	-1.25	-2.9	0	-2.95	-1.45
	41	0	-1.15	2.5	0.35	-1.05	-1.9	-1.3	-2.75
	42	-1.25	0	0.45	-1.8	-1.8	-1.25	-2.3	-3.55
	43	3.4	-0.5	1.15	0.5	-1.85	-4.8	-3.35	-1.85
	44	0.45	1.55	1.25	0.85	-1.4	-0.55	-2.5	-1.35
	45	-3.05	0	0.8	0.8	-0.55	1	-1.35	-1.8
	46	3.7	2.15	0.8	-1.6	3	2.15	2.15	1.25
	47	-1.5	-0.3	1.6	0.7	-2.1	-0.85	-2.1	-1.8
	48	-3.5	-1.55	1.35	-2.25	-2.3	0	-1.9	-3.2
	49	1.9	1.3	0	-1.2	-2.45	-2.15	-3.3	-3
	50	-0.4	0	1	0.75	-1	-0.7	-3.4	-1.5
	51	-4.6	0	-0.85	-1.9	-1.1	2	-2.55	-1.3
	52	-1.5	1.2	0.85	0.7	-4	-1.3	-1.6	-3.05
	53	-0.95	0.4	4.1	1.25	-0.6	0	-2.2	-1.8
	54	-2.8	0	2.75	1.7	-0.95	1	-0.95	-2.7
	55	-3.25	0.4	1.1	-2.1	-3.3	0	-1.8	-1.75
	56	0.65	0.55	3.65	0	2.1	2.35	-0.55	-1.6
	57	0	0.75	5.55	4.1	1.4	1.7	-2.35	-0.55
	58	2.55	2.4	3.5	2.3	0.8	0.5	0.5	1.4
	59	0.5	0.5	0	-1.35	-3.4	-3.7	-1.5	-1.5
	60	1.95	2.4	5.5	1.55	1.4	1.25	0	0.85

เทคนิค 2	ระยะที่เคลื่อนไป	ตาม	แนว	แกน	x	ตาม	แนว	แกน	y
PTM	ตัวอย่างที่	IE	IA	MBC	MBA	IE	IA	MBC	MBA
	1	-3.05	1.35	5.1	2.8	-0.9	1.75	-1.9	-1.1
	2	-3.1	3.2	4.8	-1.1	-3.3	0.4	-0.5	-0.7
	3	-2.55	1.35	3.6	3.6	0	3.65	-1.5	0.8
	4	-1.35	3.1	5.2	5	-4.6	-1.85	-4.9	-4.7
	5	1.6	0.4	0.8	0.95	1.4	1.06	0	0.55
	6	2.25	5.75	10.35	7.25	-0.8	1.2	-2.45	-0.9
	7	-3.5	0.7	6.8	4.95	-1.8	0.85	-3.6	-2.8
	8	-2.8	3.15	8.25	4.15	-8.8	-4.05	-9.15	-7.3
	9	-3.2	-1.75	2.05	2.2	-1	-0.4	-2.55	-1.4
	10	-0.4	3.7	8.65	3.15	-2.6	-0.45	-2.7	-2
	11	-3.45	0.8	4.5	1.65	-0.45	2	0	-0.6
	12	-4.5	0.4	3.7	1.55	-5	-1.2	-2.5	-3.1
	13	-4.8	2.05	7.4	1.9	-7.15	-1.25	-2.9	-3.1
	14	-4.3	0.5	4.3	4.05	-4.05	-1.2	-3.8	-3
	15	5.9	4.2	6.8	4	0.7	-1.45	-2.05	-2.6
	16	-5.2	3.35	8.5	4.96	-6.7	1.15	-3.3	-0.9
	17	-4.5	-2	6.65	3.3	-1.8	0	-0.6	-2.1
	18	-4.75	1.5	4.5	3.2	-1.7	2.75	-1.15	-0.5
	19	-2.3	0.7	10.6	4	-4.65	-2.45	-4.2	-5.6
	20	-1.75	3.9	9.9	7.4	-4	-0.4	-3.5	-3.05
	21	-4.75	3	7.3	3.05	-3.8	1.9	-1.55	-1.25
	22	-0.6	0.6	10.75	6.5	-0.4	1	-4.5	-3.3
	23	-3.1	1.8	9.7	5.4	0	3.45	-2.7	-3.5
	24	-4.7	2.2	1.5	-4.6	-7.3	-3.6	-5.4	-4.55
	25	-4.6	0.55	5.05	3.85	-4.55	-1.1	-4.5	-5.1
	26	0	2.7	10.75	8.8	-1.65	0.35	-1.8	-2.95
	27	-4.35	1.35	6.9	3.8	-2.95	1.5	-1.3	-1.15
	28	-0.5	4.65	9.4	6.2	-3.65	-0.3	-2.5	-3.2
	29	-3.5	1.5	3.4	3.5	-5.9	-2.2	-2.7	-2.05
	30	0.3	1.5	8.75	6.8	-3	-3	-3.8	-2.75
	31	-3.3	1.5	8.4	6.15	-4.35	-1.15	-3	-3
	32	-6.05	0.85	2.7	-1	-6.3	-1.45	-5.3	-7.55
	33	-5.45	2.5	7.9	6.3	-5.9	-1.25	-4.9	-4.1
	34	-4.9	1	7	5.25	-3.1	1.9	-3.5	-2.7
	35	-3.25	-1	5.2	0.85	-2.6	0	-1.8	-2.4
	36	-5.6	1	7.05	0.5	-5.3	1.2	-3.15	-2.95
	37	-4	4.4	7.5	3.7	-9.2	-4	-6.4	-6
	38	3.7	4.7	7.3	4.1	-2.4	-2	-3.4	-2.7
	39	0.75	2.3	1.05	-1.05	-1.3	0	-3.5	-1.65
	40	-1.45	1.5	3.1	0.6	-2.5	0	-2.85	-7.5
	41	-0.3	-1.15	2.4	0.3	-4.7	-5.1	-4.45	-5.5
	42	0.7	1.7	2.3	0	-2.8	-2.05	-3.35	-4.2
	43	6.6	2.9	4	3.4	-2.75	-5.5	-3.95	-2.45
	44	1.5	2.45	2.3	1.85	-3.55	-2.55	-4.5	-3.2
	45	-1.55	1.15	2.25	1.65	1.5	2.8	0.6	-0.4
	46	4.5	3.05	1.5	-0.5	0.5	0	0.5	-0.6
	47	0	0.95	3.1	1.4	-3.05	-2.15	-3.2	-3.2
	48	-1.4	0.9	3.6	-0.35	-3.9	-2	-3.55	-4.9
	49	3.75	3.1	2.15	0	-4.9	-5.1	-6.1	-8
	50	0.8	1.35	1.85	1.85	-2.2	-1.6	-3.9	-2.3
	51	-5.3	-0.6	-1.6	-2.75	-3.35	-0.4	-4.8	-3.5
	52	2.35	4.7	5	3.9	-7.3	-4.8	-5.75	-7.5
	53	1.7	3.15	6.7	4.05	-3.6	-2.7	-4.6	-4.35
	54	-3	0	3	1.95	-4.35	-2.3	-4	-5.6
	55	-2.75	1.1	2.15	-1.5	-4.75	-1.9	-4.3	-4.4
	56	2.7	2.7	6.3	2.7	2.25	2.7	0	-1.5
	57	-0.65	0	5	3.25	0.6	1.1	-3	-1.05
	58	3	2.9	4.1	2.7	-0.7	-0.7	-0.4	0
	59	1.2	0.3	0	-1.3	-5.45	-5.85	-4.75	-4.05
	60	4.4	4.8	7.7	4.1	1.5	1.3	0	0.9

เทคนิค FIT	ระยะที่เคลื่อนไป ตัวอย่างที่	x				y			
		ตาม IE	แนว IA	แกน MBC	MBA	ตาม IE	แนว IA	แกน MBC	MBA
	1	-3.1	1.15	5.2	3.3	-0.85	1.9	-1.75	-0.75
	2	-3.2	3.2	4.65	-0.8	-2.5	0.65	0	0
	3	-3.5	0.65	2.5	3	-2.75	0.95	-3.65	-1.65
	4	-3.7	0.75	2.7	2.2	-3	0.5	-2.9	-2.45
	5	0	-0.9	-0.3	-0.4	0.75	0.6	-0.5	0
	6	-3.1	0	4.5	1.55	-1.25	0.9	-2.7	-1.65
	7	-4.1	-0.3	5.55	4.45	0	2.8	-1.4	-0.55
	8	-6	-0.6	5	0.4	-1.75	2.75	-2.35	-0.9
	9	-2.9	-0.85	2.4	2.6	0	0.6	-1.25	0
	10	-3.5	1.25	5.6	0.85	-3.15	-0.55	-2.1	-1.4
	11	-3.1	1.25	4.6	1.85	-0.75	1.65	-0.4	-0.95
	12	-5.25	-0.6	3.1	0.5	-1.65	2.1	0.35	-0.5
	13	-5	1.1	6.55	1.4	-4.45	0.5	-0.75	-1
	14	-3.05	1.1	4.85	4.85	-2.2	0	-3	-2
	15	3.1	1.3	3.55	1.5	-1.1	-2.05	-1.95	-2
	16	-7.2	0.8	6.6	1.8	-5.55	1.8	-2.25	-0.3
	17	-3.75	-1.8	6.8	3.3	-0.6	1	0	-1
	18	-6.2	0.4	2.9	1.9	-1.4	2.8	-0.6	-0.6
	19	-4.7	-2.8	7.7	0.95	0	1.8	-0.7	-1.85
	20	-5.7	-0.3	5.4	3.25	-2.8	1	-2.1	-1.9
	21	-5.3	1.85	6.9	1.65	-3.45	1.8	-1.3	-1.5
	22	-4.8	-3.3	6.65	2.1	0.6	1.5	-3.75	-2
	23	-7.7	-1.9	4.25	1.85	-0.35	3.25	-2	-2.45
	24	-4.5	1.5	0.9	-5.2	-2.85	0.6	-1.1	0
	25	-5.65	-1.25	3.25	1.25	-0.6	2	-1.85	-2.8
	26	-2.4	1.3	8.65	7	0.4	2.5	-0.2	-0.3
	27	-6.25	-0.65	5.05	1.7	-2.35	1.75	-0.85	-0.5
	28	-3.5	0.9	6.3	2.4	-1.05	1.75	-0.65	-1
	29	-3.35	0.85	3.25	2.75	-2.15	1.45	0.4	0.55
	30	0	0.4	8.5	5.7	-0.9	-0.9	-2.3	-1.8
	31	-4.6	-1.15	6.85	3.65	-0.6	2.5	0	0
	32	-7.6	0	1.45	-1.45	-3.4	1.7	-1.35	-3.55
	33	-6.4	2.3	6.95	6.4	-4.2	0.85	-1.9	-1
	34	-6.05	0.45	6.05	4.4	-1.55	3.3	-2.45	-1.6
	35	-3.3	-1.4	4.55	0.3	0.45	2.75	0.5	0.4
	36	-6.8	0.8	6.15	0	-2.25	4.35	0	0.4
	37	-5.7	1.85	5.5	1.25	-6	-0.75	-3.15	-3.3
	38	1.35	2.6	5	2	-2.2	-1.45	-2.7	-2.25
	39	1.6	3.4	1.55	-0.4	-1.3	0	-3.5	-1.5
	40	-3.4	0	1.6	-0.85	-2.5	0.35	-2.5	-1.05
	41	1.2	0	4.1	1.05	0.45	-0.9	-1	-2.4
	42	0	0.3	1.4	-1.4	0	0.55	-1.45	-2.4
	43	3.85	0	1.5	0.75	-0.3	-3	-2.1	-0.85
	44	0.5	1.5	1.5	0.9	-0.9	-0.4	-2.1	-0.8
	45	-4.3	-1.2	-0.6	-0.4	-0.55	1	-1.05	-1.35
	46	2.6	2	0	-2	0.6	0	1	0
	47	-1.5	-0.6	0.9	0	0	0.45	-0.95	-1.05
	48	-4.45	-2.4	0.95	-3.1	-0.45	1.15	0	-1.55
	49	3.45	2.5	1.4	0	-1.65	-1.9	-3.2	-3.2
	50	-0.5	0	0.8	0.9	-0.4	0	-2.5	-1.1
	51	-5.6	-0.6	-1.9	-2.5	-1	1.9	-2.5	-1.25
	52	-0.5	1.5	1.85	1.05	-2.25	0	-0.7	-2.5
	53	-0.4	1.1	4.25	2	-2.1	-1.35	-2.9	-1.95
	54	-2.4	0.6	2.7	1.9	-0.25	1.8	0	-1.55
	55	-2.3	1	2.55	-1.25	-1.6	1	-1.4	-1.7
	56	0.65	1	4.15	1	1.2	2.2	0	-1.5
	57	-1.5	-0.5	4.1	2.7	0.65	1.25	-2	-0.75
	58	2.25	2	3.15	1.6	0.5	0	0	0.9
	59	0.8	0.8	0	-0.8	-3.1	-3.3	-1.4	-0.55
	60	1.8	2	5.05	1.5	0.5	0.5	-0.5	0.4

เทคนิค4	ระยะที่เคลื่อนไป	ตาม	แนว	แกน	x	ตาม	แนว	แกน	y
ZYM	ตัวอย่างที่	IE	IA	MBC	MBA	IE	IA	MBC	MBA
	1	-4.3	0	4	1.5	-0.4	2.5	-1.35	-0.3
	2	-3.1	3.15	4.7	-0.8	-2.4	0.65	0	0
	3	-6.8	-1	-0.4	1	-4.3	-0.3	-3.5	-1.6
	4	-0.65	3.15	6.05	5	-2.75	0	-3.7	-3.4
	5	-2.25	-1.65	-2.1	-1.05	-3	-2.4	-1.9	-1.3
	6	4.4	4.8	12.25	6.9	1.75	2.05	-2.7	-1.7
	7	-5.9	-1.65	4.1	2.85	-0.95	2.1	-2.25	-1.5
	8	1.35	4.95	12.75	6.05	-1.4	1.55	-4.8	-3.3
	9	-6.9	-3.15	-0.85	0.5	-3.1	-1.35	-2	-0.45
	10	-2.1	1	6.9	0.3	-0.55	0.55	-2.1	-1.7
	11	-3.35	0.4	4.35	1.2	-0.85	0.85	-1.1	-1.5
	12	-2.4	1	6.05	1.8	-0.5	2	-0.5	-1.8
	13	-9.35	-1.3	2.8	-0.9	-9	-2.8	-4.1	-3.5
	14	-1.9	1.7	6.1	5.2	-1.65	0.4	-3.15	-2.2
	15	1.8	0.4	2.2	0.5	-3.65	-5	-4.9	-4.35
	16	-10.8	-0.9	3.3	0	-9.2	-0.6	-4	-1.2
	17	-1.35	0	9.5	5.2	-0.85	0	-1	-2.1
	18	-6.35	0.4	2.4	2.1	-4.1	0.3	-3.35	-3.15
	19	-3.5	-0.2	8.9	3.2	-2.4	0.2	-1.45	-2.5
	20	-5.8	0.65	5.2	4.25	-5.05	-0.9	-3.45	-3.25
	21	-7	1	5.5	1.2	-5	0.8	-2.3	-2.35
	22	-1	0	9.85	5.35	-0.6	0.6	-4.7	-3.85
	23	-9.4	-2.5	2.8	1.65	-3.8	0.4	-4.3	-4.6
	24	-1.3	2.1	4.55	-3.9	0	2.4	-1.65	-1.9
	25	-8.1	-3.05	1.2	0	-2.3	0.8	-3.05	-3.15
	26	0	2.45	10.65	8.6	-1.5	0	-1.65	-2.8
	27	-8	-0.55	3.15	2	-5.2	0	-1.1	-0.8
	28	-3.2	1.8	6.5	3.3	-3.35	0	-2.15	-2.5
	29	-1.3	2.65	5	4.6	-2.3	1.2	0	0.4
	30	0	0.5	8.15	5.65	-2.05	-2.05	-3.35	-2.3
	31	-7.6	-1.25	4.35	3.55	-5.4	-0.5	-1.65	-1.2
	32	-13	-3.6	-2.9	-5.55	-8.35	-0.7	-2.4	-4.75
	33	-5.1	2.5	7.7	5.85	-2.3	2.05	-1.8	-0.65
	34	-8.1	-0.4	4.05	3.75	-4.15	1.1	-3.15	-2.45
	35	-6.55	-2.25	1.55	-0.4	-2.85	0.35	0	0
	36	-4.75	1.75	7.8	1.3	-2.3	4	-0.3	0
	37	-8.5	1.2	3.5	0.75	-9.3	-3.7	-5.1	-4.9
	38	-3.7	-0.65	0	-0.69	-6.8	-4.25	-3.9	-3.05
	39	0.4	1.8	0.35	-1.1	-2.25	-0.65	-4	-2
	40	2.3	3.25	8.05	2.25	1.45	2.4	-3	-1.7
	41	5.1	2.25	8.15	3.5	2.15	-0.95	-2.05	-3.55
	42	-3.85	-0.4	-1.65	-2.45	-3.3	-1.65	-1.4	-1.7
	43	-0.95	-1.95	-2.65	-0.6	-7.6	-7.7	-3.8	-1.9
	44	0	1.3	0.8	0.75	-3.05	-1.5	-3.65	-2.1
	45	0.7	2.35	4.25	3	0.55	1.15	-2.4	-2.85
	46	-1.75	-0.75	-4.7	-4.1	-3.55	-2.5	0	0
	47	-3.1	-0.9	0	0	-3.4	-1.45	-1.45	-1
	48	-4.6	2	0.5	-2.7	-2.4	0	-0.65	-2.15
	49	3.1	2.35	0.6	-0.45	-3.85	-3.5	-4	-4
	50	-1.7	-1.6	0	-1.1	-1.85	-1.85	-5	-3.45
	51	-5.5	-0.45	-1.5	-2.35	-2.55	0.6	-3.65	-2.1
	52	-7.65	-2.4	-4.85	-3	-10.35	-5.4	-3.6	-5.35
	53	6.15	4.9	11.3	6.1	2.75	1.3	-2	-2.3
	54	-3	0.3	2.8	1.8	-1.15	1.15	-0.6	-2.1
	55	-0.5	2.85	4.15	0	-3.1	0	-2.35	-2.9
	56	-0.8	0	2.3	0	0	1.1	-1.1	-2.25
	57	-4.4	-2.25	1.1	0.8	-0.8	0	-2.5	-0.8
	58	-3.3	-1.2	-2.35	-1.1	-5.7	-4.4	-2.55	-1.4
	59	3.7	2	2.1	0	-1.1	-2.5	-1.8	-1.5
	60	0.4	1.35	3.3	1.25	-2.2	-0.7	-1.75	-0.7

ตารางที่ 7 แสดงระยะที่จุดอ้างอิงเคลื่อนที่ไปตามระนาบอ้างอิงระหว่างก่อนและหลังจัด
ฟันในกลุ่มตัวอย่างที่สุ่มเลือก 10 ตัวอย่าง จากการศึกษาหัตถภาพรังสี 4 เทคนิคซ้ำ

เทคนิค1	ระยะที่เคลื่อนไป	ตาม	แนว	แกน	x	ตาม	แนว	แกน	y
ANS-RE	ตัวอย่างที่	IE	IA	MBC	MBA	IE	IA	MBC	MBA
	6	-3.4	0	4.2	0.9	-1	0.8	-2.5	-1.6
	12	-7	-1.7	1.1	-1.1	-3.7	0.3	-0.85	-1.8
	18	-5.8	0.3	3.1	2.4	-1.15	2.7	-0.9	0
	24	-3.85	1.75	1.15	-4.8	-2.9	0.7	-1.2	-0.55
	30	0	0.45	8	5.7	-1	-0.6	-1.4	-0.65
	36	-4.8	2	7.6	1.35	-3	3.3	-1.15	-0.5
	42	-1.3	0	0	-1.9	-2.1	-1.3	-1.8	-3
	48	-3.7	-1.35	1	-2.8	-2.1	0	-1.85	-3.25
	54	-2.4	0.4	3.1	2.1	-1.1	0.4	-1	-2.6
	60	1.8	2.2	5.3	1.8	1.8	1.5	0	0.5
เทคนิค2	6	2.15	5.15	10.05	7	-0.6	0.65	-2.6	-1
PTM-RE	12	-4.5	0	2.85	0.7	-4.7	-0.5	-1.6	-2.85
	18	-5	1.1	3.3	3.3	-1.8	2	-1.3	-0.9
	24	-4.2	2.1	1.4	-4.4	-7.35	-3.45	-5.85	-4.7
	30	0	0.9	8.3	6.5	-2.95	-2.7	-3.85	-3
	36	-6	0.8	6.9	0.2	-5.65	1	-3.25	-3.1
	42	0.35	1.85	1.85	0	-2.3	-1.7	-2.7	-3.65
	48	-1.4	0.65	3.5	0	-3.5	-1.75	-3	-4.5
	54	-3.1	0	2.1	1.75	-4.5	-2.65	-4.3	-6
	60	4	4.65	7.8	4.1	1.45	1.25	-0.3	0.3
เทคนิค3	6	-2.8	0.45	4.7	2.45	-3.05	-0.45	-3.6	-1.9
FIT-RE	12	-4.95	-0.85	2.8	-0.3	-1.2	2.4	0.5	-0.6
	18	-6.35	0.5	2.4	2.65	-2.4	1.85	-1.15	-0.6
	24	-6.05	0.5	-0.3	-6.55	-3.25	0.55	-1.05	0
	30	-0.3	0.55	8.45	6.15	-0.85	-0.85	-1.7	-1.7
	36	-7.1	0	5.35	0	-3.2	4.1	0	0
	42	-1.4	-0.3	0	-2.25	-0.4	-0.4	-2	-2.5
	48	-3.6	-1.75	0.8	-2.8	-0.8	0.8	-0.4	-1.95
	54	-1.95	1.05	3.6	2.9	-0.8	0.8	0	-1.8
	60	1.65	1.75	4.9	1.35	1.15	0.85	0	0.3
เทคนิค4	6	3.85	4.85	11.7	5.95	1.7	2.1	-2.6	-2
ZYM-RE	12	-2.6	0.3	4.8	1.15	-1.5	1.15	-0.6	-2.1
	18	-5.85	0.4	3.25	2.8	-3	1.2	-2	-1.5
	24	-1.45	2.15	4.5	-3.6	-0.3	2.05	-1.85	-1.8
	30	0	0.45	8.5	5.85	-1.8	-2.45	-3.15	-2.7
	36	-4.95	1.75	7.75	1.35	-2.7	3.8	-0.8	-0.4
	42	-3.3	-0.65	-1.8	-2.35	-3.75	-1.7	-1.95	-2.35
	48	-3.65	-1.35	1.1	-2.4	-1.8	0.5	-0.5	-2.25
	54	-3.7	-0.4	1.7	0.9	-2	0	-1.3	-2.9
	60	0.5	1.75	3.85	1.3	-1.95	-1.15	-1.35	-0.4

ประวัติผู้เขียน

นาย ภัคดี ภูพัฒน์ เกิดเมื่อวันที่ 23 ตุลาคม พ.ศ. 2513 ที่รัฐมิชิแกน ประเทศสหรัฐอเมริกา สำเร็จการศึกษาประถมและมัธยมต้นจากโรงเรียนพระมหาไถ่ศึกษา สำเร็จการศึกษามัธยมปลายจากโรงเรียนเตรียมอุดมศึกษา สำเร็จ การศึกษาปริญญาตรี ทันตแพทยศาสตรบัณฑิต จากคณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ปีการศึกษา 2536 และเข้ารับราชการที่ฝ่ายทันตสาธารณสุข โรงพยาบาลด่านช้าง อำเภอด่านช้าง จังหวัดสุพรรณบุรี เป็นเวลา 1 ปี จึงได้ลาออกศึกษาต่อในหลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาวิชาทันตกรรมจัดฟัน ภาควิชาทันตกรรมจัดฟัน คณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เมื่อ พ.ศ.2538



สถาบันวิทย์บริการ
จุฬาลงกรณ์มหาวิทยาลัย