

S1: Cutting force produced in different types of bones by RUBD and CSBD

S.no	Parameters			Average force (N)					
	R _s (rpm)	F _r (mm/min)	D _d (mm)	Femur		Tibia		Fibula	
				RUBD	CSBD	RUBD	CSBD	RUBD	CSBD
1.	1000	30	3.5	57.49	78.67	53.57	68.88	35.42	49.26
2.	2000	30	3.5	47.95	68.25	42.33	59.30	30.28	45.85
3.	3000	30	3.5	35.63	54.85	30.73	44.27	23.42	34.38
4.	2000	10	3.5	31.95	48.86	27.01	42.61	21.42	32.68
5.	2000	50	3.5	57.71	70.80	51.74	62.42	38.46	49.65
6.	2000	30	3	41.00	59.93	33.19	51.97	26.38	41.44
7.	2000	30	4	53.55	73.26	46.83	63.63	36.85	48.46

S2: Temperature rise at **0.5mm** distance for RUBD and CSBD for femur, tibia and fibula bone

S.no	Parameters			Change in temperature (°C)					
	R _s	F _r	D _d	Femur		Tibia		Fibula	
				RUBD	CSBD	RUBD	CSBD	RUBD	CSBD
1.	1000	30	3.5	12.4	35.4	10.8	31.5	8.6	22.4
2.	2000	30	3.5	18.5	40.4	15.5	37.6	13.7	25.8
3.	3000	30	3.5	25.6	52.6	22.4	40.2	16.8	31.2
4.	2000	10	3.5	15.7	38.5	12.2	33.2	10.2	21.3
5.	2000	50	3.5	11.8	33.6	9.4	25.8	7.5	14.5
6.	2000	30	3	15.4	37.5	12	33.4	11	23.4
7.	2000	30	4	20.8	44.6	18.1	42.8	15.1	32.4

S3: Temperature rise at **1.0mm** distance for RUBD and CSBD for femur, tibia and fibula bone.

S.no	Parameters			Change in temperature (°C)					
	R _s	F _r	D _d	Femur		Tibia		Fibula	
				RUBD	CSBD	RUBD	CSBD	RUBD	CSBD
1.	1000	30	3.5	9.2	28.7	6.5	23.8	4.0	15.4
2.	2000	30	3.5	13.5	34.2	11.5	29.2	8.3	19.4
3.	3000	30	3.5	20.4	44.5	16.8	31.8	11.2	22.8
4.	2000	10	3.5	12.3	31.6	8.4	25.9	5.5	14.5
5.	2000	50	3.5	9.4	27.6	7.8	19.5	5.5	9.7
6.	2000	30	3	11.2	31.2	7.1	26.2	6.4	16.0
7.	2000	30	4	15.6	36.8	12.8	35.5	10.1	23.1