

## Table Captions

Table 1. Limiting current densities of Nafion 117 in aqueous solutions (0.1 N)

Table 2. Electrolyte surface electrolyte resistances of the three modified membranes (MM) with carbon powder (CP) extracted from Nyquist diagrams.

Table 3. Constituents of different MFCs

Table 4. Comparison between performances of MFCs.

Table 1

Limiting Current Density (mA/cm <sup>2</sup> )	H <sup>+</sup>	K <sup>+</sup>	Na <sup>+</sup>
Nafion 117	32.59	7.33	5.83
Nafion 117 modified with carbon powder	20.02	4.83	3.96
Nafion 117 used 10 month	26.23	6.01	4.92

Table 2

MM with CP	Re (ohm.cm <sup>-2</sup> )
One thin film	0.85
Two thin films	0.77
Three thin films	0.26

Table 3

Type of MCF	Bioanode	Cathode	Separator
MCF1	-Carbon felt -6.5 cm <sup>2</sup>	-Stainless Steel 316 -8 cm <sup>2</sup>	Nafion 117
MCF2	-Carbon felt -6.5 cm <sup>2</sup>	-Stainless Steel 316 -8 cm <sup>2</sup>	Nafion 117 modified with carbon powder KS6
MCF3	-Nafion 117 modified with carbon powder KS6 -6.5 cm <sup>2</sup>	-Stainless Steel 316 -8 cm <sup>2</sup>	Nafion 117
MCF4	-Nafion 117 modified with carbon powder KS6 -6.5 cm <sup>2</sup>	-Stainless Steel 316 -8 cm <sup>2</sup>	Nafion 117 modified with carbon powder KS6

Table 4

Type of MFC	Initial Current Density (mA/m <sup>2</sup> )	Maximum Current Density (mA/m <sup>2</sup> )	Power Density (mW/m <sup>2</sup> )
MFC 1	210	292	50
MFC 2	327	470	119
MFC 3	145	265	22
MFC4	209	379	45