has been replaced by a $[M^+(CH)^{-y}]_x$ anode (M = Li or Na). Such anodes permit high charging rates without dendrite formation and both $(CH)_x$ and $[M^+(CH)^{-y}]_x$ are stable in the electrolyte. The cell is of the type

$$[M^+(CH)^{-y}]_x \ / \ M^+A^-(THF) \ / \ TiS_2$$

the anode discharge reaction being

$$(CH^{-y})_x \rightarrow (CH)_x + (xy)e^- \qquad (7)$$

and the corresponding cathode reaction being identical to that given by equation (5), viz.,

$$(TiS_2)_x + (xy)e^- \rightarrow (TiS_2{}^{-y})_x$$

The overall discharge reaction can be represented by the equation

$$[M_y^+(CH^{-y})]_x + (TiS_2)_x \rightarrow [M_y^+(TiS_2{}^{-y})]_x + (CH)_x \qquad (8)$$

The charge reactions are the reverse of the above.

Such cells show very good retention of charge, discharge and recycling characteristics but their energy density is poor because the maximum value of y which can be obtained in the $LiClO_4$/THF electrolyte employed was ~ 0.1. However, since these studies were completed, very important information has been released by Allied Corporation (L. W. Shacklette et al., J. Electrochem. Soc., 132, 1529 (1985)) which shows that the value of y can be increased to ~ 0.18 by replacing the $LiClO_4$ by $LiBR_4$ (R = phenyl, n-butyl). In view of these recent findings it appears that this type of cell may have real potential technologically.

(C) Use of $(CH)_x$ as a Cathode (See in particular reprints 20, 26 and 27)

The discharge reactions occurring in a cell of the type

$$M \ / \ M^+A^-(THF) \ / \ (CH)_x$$

(where M = Li or Na and M^+A^- is a salt of M) are:

Anode: $(xy)M \rightarrow (xy)M^+ + (xy)e^-$ (9)

Cathode: $(CH)_x + (xy)e^- \rightarrow (CH^{-y})_x$ (10)