J Solid State Electrochem (2001) 6: 71–72
DOI 10.1007/s100080100228

ERRATUM

G. Patermarakis · K. Moussoutzanis · J. Chandrinos

Discovery by kinetic studies of the latent physicochemical processes and their mechanisms during the growth of porous anodic alumina films in sulfate electrolytes

Published online: 10 July 2001
© Springer-Verlag 2001

J Solid State Electrochem (2001) doi 10.1007/s100080000176

Unfortunately there were a few errors in the above-mentioned article:

The first sentence in the last paragraph of the Introduction should read: In the present work, suitable kinetic studies were made on the growth of films in different sulfate electrolytes like pure H_2SO_4, mixtures of $H_2SO_4 + Al_2(SO_4)_3$ and $Al(HSO_4)_3$, $NaHSO_4$ and $KHSO_4$ solutions.

In the last part of Eq. (4) a minus sign was not correctly reproduced. The correct version is as follows

$$\begin{aligned}\Delta P_{p,hc} &= j\kappa^{-1}\left(4^{-1}\pi n\right)^{-1} h_c (D_c - D_b)^{-1}\left(D_b^{-1} - D_c^{-1}\right) \\ &= 4j\kappa^{-1} h_c \left(n^{1/2} D_c - n^{1/2} D_b\right)^{-1} \\ &\quad \times \left[\left(n^{1/2} D_b\right)^{-1} - \left(n^{1/2} D_c\right)^{-1}\right] \qquad (4)\end{aligned}$$

On the horizontal axis of Fig. 6, the numerical values 0.53, 0.58 and 0.63 are rounded values and should have been deleted.

At the end of the first line in the section entitled "Interpretation of the variations of D_b with a_{H^+} and of E_a (or E_r) with D_b" the equation should read $j_{OH^-,t} = J_{OH^-} S_g^{-1} (2^{-1}\pi n D_b^2)^{-1}$, i.e., the first J after the equals sign should be capitalized.

There were also minor errors in Eq. 20 – the correct version is shown below

$$\begin{aligned}j_{OH^-,t} &= J_{OH^-} S_g^{-1}\left(2^{-1}\pi n D_b^2\right)^{-1} \\ &= \left[2^{-1} j S_g F_c^{-1} - 3 j S_g (6F_c)^{-1} D_b^2 D_c^{-2}\right] \\ &\quad \times S_g^{-1}\left(2^{-1}\pi n D_b^2\right)^{-1} \\ &= jF_c^{-1}\left(\pi n D_b^2\right)^{-1} - jF_c^{-1}\left(\pi n D_c^2\right)^{-1} \\ &= jF_c^{-1}\left(\pi n D_b^2\right)^{-1} - (3/4) jF_c^{-1}\pi^{-1} \qquad (20)\end{aligned}$$

The term 3/2 in Eqs. (23), (24) and (25) should read 3/4.

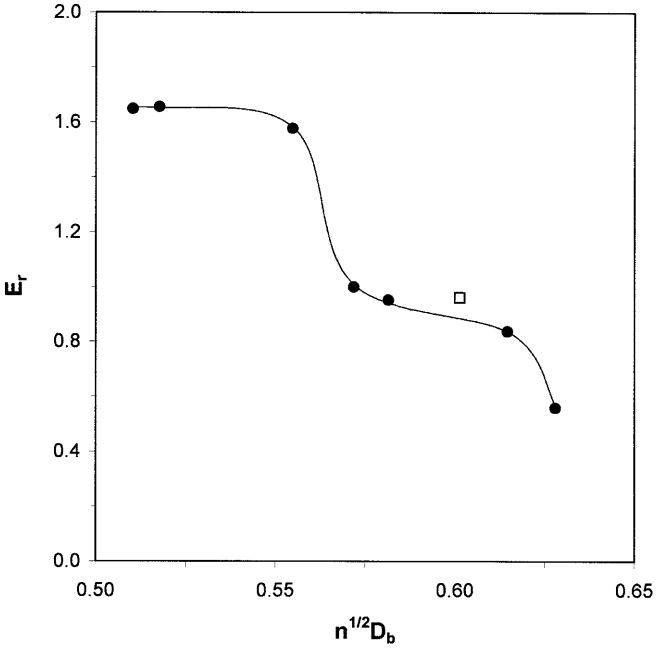

Fig. 6 Plot of E_r versus $n^{1/2}$ D_b. The experimental point deviating significantly from the plot (*open square*) is for the electrolyte H_2SO_4 (1.53 mol dm^{-3}) + $Al_2(SO_4)_3$ (0.75 mol dm^{-3}) (saturated)

The online version of the original article can be found at http://dx.doi.org/10.1007/s100080000176

G. Patermarakis (✉) · K. Moussoutzanis · J. Chandrinos
Laboratory of Physical Chemistry,
Section of Materials Science and Engineering,
Department of Chemical Engineering,
National Technical University of Athens,
Iroon Polytechniou 9, Zografou 157 80,
Athens, Greece
E-mail: kmous@orfeas.chemeng.ntua.gr
Tel.: +30-1-7723203
Fax: +30-1-7723184

$$(3/4)jF_c^{-1}\pi^{-1} = N_{2,m}v_2n_2F_cN^{-1}\exp[(-W_2N + n_2a_2F_cE_b)/RT] \quad (23)$$

$$\left(nD_b^2\right)^{-1} = {}^3\!/_4 + j^{-1}\pi F_c\lambda\theta_{OH^-}v_1n_1F_cN^{-1} \times \exp[(-W_1N + n_1a_1F_cE_b)/RT] \quad (24)$$

$$\left(nD_b^2\right)^{-1} \approx {}^3\!/_4 + \left\{j^{-1}\pi F_c\lambda v_1n_1F_cN^{-1} \times \exp[(-W_1N + n_1a_1F_cE_b)/RT]\right\} \times k_{eq}\theta_{Al3+}\left(k_wa_{H^+}^{-1} + b\right) \quad (25)$$