Corrigendum

Corrigendum to "Mechanical characterization and modelling of Inconel 718 material behavior for machining process assessment" [Mater. Sci. Eng. A 682 (2017) 441–453]

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The authors regret any inconvenience that may have arisen due to the errors identified. There are 5 errors in total, all stemming from the fact that (i) the thermal softening parameter m has a negative value instead of positive one, and (ii) the strain hardening equation and its coefficients were incorrect.

1. The first error to correct is located in Table 8 (page 450), where the m parameter has a value of 0.00663 (positive), when it should be negative: − 0.00663. Therefore, the corrected Table 8 is:

2. Secondly, there is an error in the section where the strain rate hardening term is explained (section *4.3. Strain rate hardening*). In the paper, Eq. (6) (page 452) presents the strain rate hardening term as a function of three parameters (x, C and D):

$$\sigma_{\dot{\varepsilon}} = \left[1+C(T)\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right] = \left[1+(C + De^{-T/x})\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right] \quad (6)$$

The corrected Eq. (6) should read as follows:

$$\sigma_{\dot{\varepsilon}} = \left[1+C(T)\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right] = \left[1+(C\cdot D^T)\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right] \quad (6)$$

As a result of the modification in the strain rate hardening equation some further aspects of the paper also need to be corrected:

Table 8
Modified thermal softening term model parameters for the characterized Inconel 718.

	m	B
Proposed thermal Softening term, σ_T	−0.00663	832.27

2.1. In Table 10 (page 452) the equation for the strain rate hardening needs to be replaced with the proposed new one (Eq. (6)).

There is also a formatting problem with the numbering in the same table (Table 10): it should read (i), (ii), (iii), i.e.:

(i) Strain hardening/softening
(ii) Thermal softening
(iii) Strain rate hardening, so we also propose to change it.

Consequently, the final version of Table 10 is:

2.2. Table 9 (page 451) should be modified to include the new values of the two parameters of the strain rate hardening equation (C

Table 9
Modified strain rate hardening term model parameters for the characterized Inconel 718.

	C	D
Proposed Strain rate Hardening term, $\sigma_{\dot{\varepsilon}}$	0.00216	1.00391

Table 10
Formulation of the proposed coupled constitutive law.

Proposed model	$\sigma = \sigma_\varepsilon(\varepsilon)\cdot\sigma_T(T)\cdot\sigma_{\dot{\varepsilon}}(\dot{\varepsilon}, T)$
(i) Strain hardening/ softening	$\sigma_\varepsilon(\varepsilon) = \sigma_s + (\sigma_0 - \sigma_s + A\varepsilon^n)\exp(-r\varepsilon)$
(ii) Thermal softening	$\sigma_T(T) = \frac{1}{1+e^{-m(T-B)}}$
(iii) Strain rate hardening	$\sigma_{\dot{\varepsilon}}(\dot{\varepsilon},T) = \left[1 + C(T)\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right] = \left[1+(C\cdot D^T)\ln\left(\frac{\dot{\varepsilon}}{\dot{\varepsilon}_0}\right)\right]$

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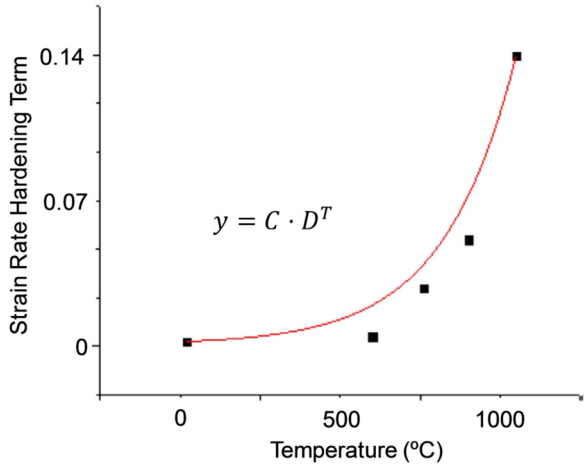

Fig. 20. Proposed strain rate hardening term for the characterized Inconel 718.

and D), and the x parameter should be removed. The C parameter has the value of 0.00216 and D 1.00391. Thus, the final version of the table is:

2.3. Fig. 20 (page 451) also needs modification due to the change of Eq. (6). The corrected figure is:

2.4. The text explaining the strain rate hardening term in section *4.3. Strain rate hardening* (page 452) need should be corrected to read as follows:

"As shown in Fig. 20, the Johnson-Cook strain-rate sensitivity parameter C increased exponentially with increasing temperature. Therefore, to consider the coupling between the temperature and the strain rate an exponential function is proposed (Figs. 20, 6). Strain rate sensitivity parameters C and D (Table 9) have been identified from all the temperature-strain rate testing configurations (Table 3)."

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The authors also regret the omission of their Acknowledgement Statement, which should read as follows:

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