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## Author Correction:

# Proof-of-principle experiment for laser-driven cold neutron source

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Correction to: *Scientific Reports* <https://doi.org/10.1038/s41598-020-77086-y>, published online 19 November 2020

The original version of this Article contained errors.

In Figure 3b, where

“Deutron”

now reads:

“Deuteron”

In addition, in Figure 4d, where the x-axis

“ $10^{-4}$ ,  $10^{-3}$ ,  $10^{-2}$ ,  $10^{-1}$ , 10,  $10^2$ ,  $10^3$ ”

now reads:

“ $10^{-4}$ ,  $10^{-3}$ ,  $10^{-2}$ ,  $10^{-1}$ , 1,  $10^1$ ,  $10^2$ ”

The original Figures 3 and 4 and accompanying legends appear below.

Finally, the Author Contributions section,

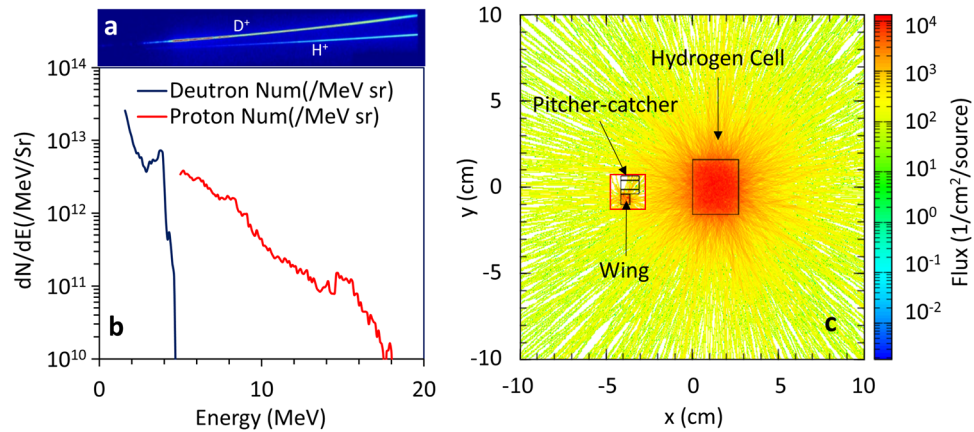
“The moderator and experiment was developed by S.R.M. with support from A.I. and funded by A.Y. to and led by S.R.M. S.R.M., A.Y., Z.L. and T.I. executed the experiment with support from, AI, KM, MNag, MNak, YAr, YAb, D.G., Y.H., T.M., S.S. and K.O. contributed both to the experimental setup and diagnostics. S.R.M. and Z.L., T.I. performed data analysis.”

now reads:

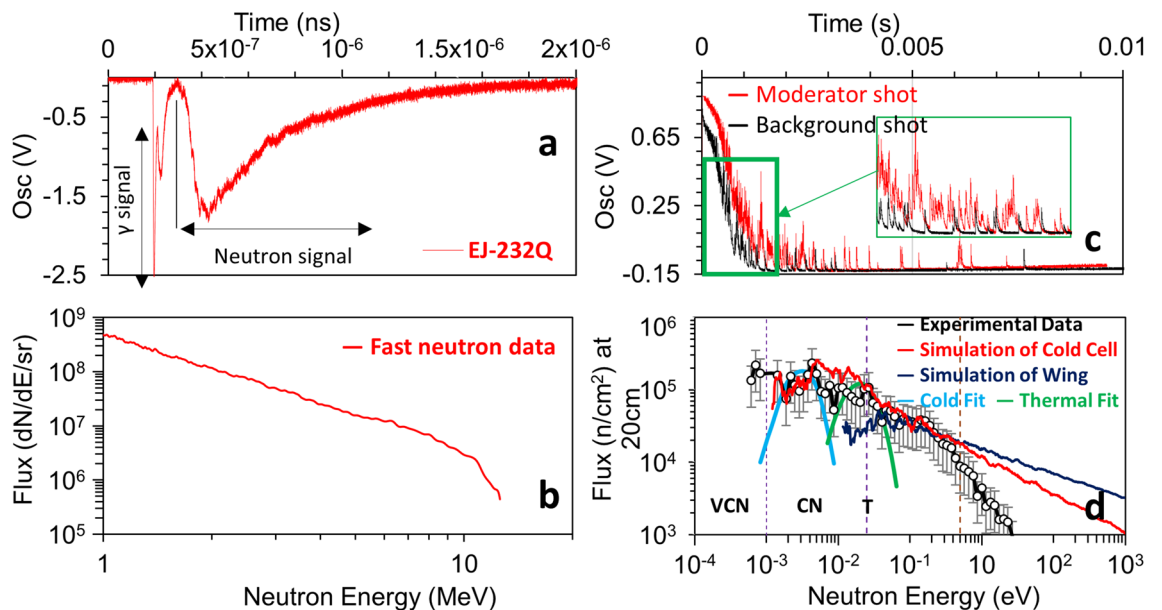
“The moderator and experiment were developed by S.R.M. with support from A.I. The experiment funded by A.Y. and led by S.R.M. S.R.M., A.Y., Z.L. and T.I. executed the experiment with support from A.I., K.M., M.Nag, M.Nak, Y.Ar., Y.Ab., D.G., Y.H., T.M., S.S. and K. contributed both to the experimental setup and diagnostics. S.R.M., Z.L. and T.I. performed the data analysis. The manuscript was prepared by S.R.M., D.N., S.F., K.M., H.N., S.K. and R.K. were involved in discussions and preparation.”

The original Article has been corrected.

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**Figure 3.** Ion-driver spectrum with corresponding neutron simulation. (a) Shows a typical proton and deuteron raw data obtained using  $5\mu m \times 5\mu m$  Au foil with TP, with respected spectra shown in (b). (c) shows the PHITS Monte-Carlo simulation performed for the cold neutrons ( $\leq 25$  meV  $\leq 25$  meV) in the hydrogen moderator, confirming an isotropic nature of the moderated neutrons.



**Figure 4.** Experimental results. (a) is the raw signal recorded using EJ-232Q plastic scintillator and the corresponding spectrum shown in (b), which was calculated by taking into account the detector distance, efficiency and the transmission. (c) demonstrating the neutron spikes generated by nuclear reaction of  ${}^3\text{He}(n,p){}^3\text{H}$  in the proportional counter for a typical moderator shot (with hydrogen) and no moderator shot (without hydrogen). The background-subtracted data at 20 cm exit surface of the moderator showing a good agreement with the Monte-Carlo simulation results as shown in (d). The broadened peak of neutrons extended its tail reaching 0.8 meV and has been confirmed using two Maxwellian numerically calculated fits for the cold and thermal temperature. The navy blue line is showing the contribution of the wing moderator which is barely reaching the thermal peak.

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