Response to REVIEWS ON THE MANUSCRIPT [6]

Reviewer 1:

Figure 2 is a little strange because ε is a function of the force, at least I think this should be pointed out.
The x-axis includes ε, which is dependent on F but changes in a smaller order of magnitude than $cos\theta$ and thus this is indeed an force/angle relation. This is now pointed out.

In figure 4, presumably the angle is kept constant at some value. What angle?
The same goes for Figure 5.
Both measurement were done at a constant angle 90° and this information is added in the figure description.

Finally, the formula layout is not very elegant, I suggest using the equation editor in Word or making the equations separately (with better resolution) and paste them as pictures.
There was an error with the pdf version of the article which made the formulas unclear since they were created in a newer Word equation editor. I have printed a new correct version of the improved article.

Reviewer 2:

In abstract, if you mention verification of theoretical predictions. Specify briefly those predictions and the verification. The weakest aspect of the paper is simplicity of the proposed theoretical approach, and formatting of equations, which make them hard to read. Other parameters than angle and temperature are neglected. Equations are unclear; should be re-written or putted in better quality (resolution). The should be placed in a separate line, not inside the text. There are a number of spelling errors (spell check strongly suggested).
Theoretical model just gives an explanation of the regressions obtained by measurements.
Equations formatting was commented already and I have tried to remove the equations from the text to separate lines in most cases.
Some spelling mistakes were corrected.

Additional Questions:

− What are the limitations of using Hooke's law?
Within the elastic limit of a solid material, the deformation produced by a force of any kind is proportional to the force. Hook's diagram of plastic materials (such as these referred to as backing) shows that there is a small part of strain possible after elastic limit before failure and since the tape never tore I find the use of Hook's law is appropriate.

− What is a slip-stick problem?
Slip-stick is caused by the surfaces alternating between sticking to each other and sliding over each other, with a corresponding change in the force of friction. Static friction coefficient between two surfaces is usually larger than the kinetic friction coefficient. If an applied force is large enough to overcome the static friction, then the reduction of the friction to the kinetic friction can cause a sudden jump in the velocity of the movement. Problem statement is to find the minimum force necessary and this is the force found in the solution. There were some more sudden movements and I have observed the occurrence of this phenomenon, but on average the

velocity was not increasing so. I did not do a more profound analysis of the detaching process to see how it changes over time and for it a different setup would be more suitable. I mention this in the Adhesion, cohesion and rupture.

Recommendation:
− Change the "Introduction" to "abstract"
− Put the equations and images in better quality
− Some graph descriptions jumped to another page (see to it, page 3)
− The equation in the Temperature section for free energy is not formatted
(there is an empty box in it)
− answer additional questions

Recommendations are accepted.

Reviewer 3:

In the Adhesion, cohesion and rupture section, I miss a description of the adhesive/cohesive rupture phenomena. Furthermore, in the Model, the author does not say which one of the two modes he actually investigates (although he looks at energy needed for tape elongation). The Model section actually starts with a discussion of thread formation, which is then never built on. Is the thread-forming the main phenomenon, or is it the "adhesive energy per surface", which the author get as a fit parameter in their Figure 2.3.
Adhesive energy per surface and thread forming analysis are not contradictory, but two parts of the same model, a macroscopic and a microscopic one.

The formula for F quickly introduced in the Model section needs more explanation.
The work done by the peel-off force goes for tape elongation, plus the work required for peeling. Even though the tape does not shear, it does elongate (that's why there's the backing characteristic). That is why I believe the formula is wrong. It should be total work done by pulling = surface energy (peeled off) + energy stored in the tape elongation
F (x(1+epsilon)-x cos theta) = G b x + E bh epsilon^2 / 2x
The total work comes from e.g. imagining a weight attached to the end of the tape, moving down the amount
(1+epsilon)-x cos theta
Now epsilon also needs to be experimentally measured, while E and G are fitted parameters ...
It indeed gives a F = ... / (... - cos theta) dependence, so the author are not fitting something bad.
In the Experimental setup section, the discussion of "other tapes" is not complete, as it is quite possible that other tapes would not just show a "tape property". They could have a qualitatively different behavior of F(angle), or different velocity-dependences.
The Angle section contains the main results: fits of the const./(const. - cos theta) dependence of the peel-off force.
This formula was (quickly) introduced in the Model section, Both of the constants are obtained as fits - and as I commented for the Model section, this is not in the end completely wrong.
The x-axis description in the figures though has a +cos in them, I don't know why.
There were some important equations written incorrectly such as the one including $+cos\theta$ remark and they are now reviewed and corrected. The correct figure axis has $-cos\theta$ and this was an accidental mistake.

There are simply too many extra parameters (empirical n, critical temperature, etc.) that we could almost "fit anything" through the data. The fits for Force (temperature) thus don't hold much meaning for

me. The formulae (say the one for U) even has some unreadable symbols in it, so I could not check anything there.
In this fit there are two free parameters and one of them - T_c can be used to see that this equation is meaningful. These temperatures were in 80°-100°C range and they agreed with the factory instructions of tape use temperature limits to the extent $\pm$5°. I am personally very sorry that I did not have more space to explain the formulae and expression derivation which exist partly in my presentation appendix.

Thank you for the reviews and proposed suggestions.

Nives Bonačić.