

## LISTING OF CURRENTLY UNSOLVED TECHNOLOGICAL PROBLEMS (VERSION A)

Updated 22 January 2019

This is a list of some current technological problems that we know about. Probably a tiny fraction of the reality.

A few preliminary points :

The first thing is : Nothing here appears on the Wikipedia lists for biology, chemistry, physics or mathematics.

So far as we can see the Wiki lists have been composed by high level professors and don't have much to do with the immediacies of real life. For example a resolution of the problems of baryon asymmetry is not in the purview of your clever artisan. Things on the Wiki list, when understood, may lift us in the future to some higher technological level, but they are not to be resolved in a workshop.

Perhaps we should have called this Unsolved Technology Problems. Interestingly, nothing worthwhile comes up on Google for this combination.

The second thing is : We are guessing that an educated man or woman, with an experimentalist background could have a chance of finding a solution to some or all of these problems. We believe that awkward youths with a few tools can achieve a lot if the wind is blowing right.

The third thing is : There are a lot of problems where there is no organisational structure which allows free thinking on the subject and for which, consequently, funding is a difficulty.

Universities, which tout themselves as bastions of free speech, often restrict research activities to lines laid down by senior authoritarian professors. The economist Paul Samuelson (\*) encapsulated the thinking of scientists such as Max Planck when he said that "Science advances funeral by funeral"; by this he meant the deaths of older colleagues who preferred to luxuriate in their own previous work rather than look at new suggestions. Shamefully, through these sorts of geriatric sabotage, grants to younger innovators can be blocked and research papers rejected.

Some industrial research laboratories can sometimes offer a far more enlightened work environment.

(\*) <https://quoteinvestigator.com/2017/09/25/progress>

The fourth thing is : If you invent some new way of going on with a problem, DO NOT patent it without a lot of thought. Patents, by and large, are only of use to companies large enough to fight expensive legal battles.

Patent law was never very good and in 2019 offers no protection at all to a start up. Furthermore, since change in Patent Law seems to require many countries to agree on any proposed change, progress is unlikely.

The January 2019 List (A starter list off the top of our heads)

- (1) How birds manage their long distance migration and, similarly, how pigeons home.

*This is under active consideration at Tushino Ltd. A book has recently been published. See <http://www.3aaa3.com>*

- (2) How to control bed bugs *Cimex lectularius*.

*Originally a universal plague, they were almost wiped out by the use of pesticides. Now they have become immune and are invading civilised dwellings once more.*

- (3) How to stop marine weeds growing on undersea structures and ships' hulls

*Tushino Ltd is currently resurrecting work which previously passed sea trials and was then discontinued for management reasons. A partner will be sought.*

- (4) Artificial muscles

*Making machinery activation more like the animal world. Some progress has been made, but there is a long way to go.*

- (5) Uses for old car tyres

*Still a problematic waste source after more than 100 years. Ground rubber as an aggregate component seems to be the most important route. A corollary – devise a recyclable tyre.*

- (6) Making the sea more transparent so that naval submarines become useless.

*Naval technology advances slower than you would expect. A row of 2019 warships hardly look much different from 1945, whereas aircraft and cars are vastly different even to the casual eye. Oh for a Charles Parsons and a latter day Turbinia.*

- (7) A different way of flying.

*Star Wars had the right picture but you don't necessarily have to have antigravity. If you had a horizontal plate and reacted the nitrogen away from the top surface faster than it could be replaced, then you would have lift.*

- (8) Desalination and de-contamination of water.

*Again a long standing problem which needs an idea from a smart kid.*

- (9) Stop mosquitoes homing in and biting

*Everybody hates mosquitoes.*

- (10) Control of slugs without killing them

*Become a God to horticulturalists*

- (11) Comminution of ores and rocks.

*Grinding up rocks and metalliferous ores takes up between 1% and 4% of the World's energy supply.*

(12) Separation of gases

*Still a tedious matter.*

(13) Long term storage of low energy heat.

*Save it up in the summer, use it in the winter. You would think it was unobjectionably simple, a sort of Victorian ice house in reverse. Seems not.*

(14) Extraction of water from nearly, but not quite, dry air

*Sahara, the Atacama Desert. Slow modification of local climate.*

(15) Non plastic packaging.

*David Attenborough, in one program (Blue Planet II), pretty well dealt a death blow to the plastics packaging industry. It's not dead yet, but it is mortally wounded, something along the lines of the market for tobacco.*

*We can't go back to brown paper bags.*

*What about Aluminium ? There's plenty of it and it can be endlessly recycled. It cost about \$2 per kg whereas PVC costs about £1 per kg*

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We'd like to get this list to be at least 50 items long. We know there are all sorts of industries that have un-expressed, unpublicised, problems. We don't know where they *could* express them. Send them in to our contact man.

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