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Short Communication

Roads and Cleaning Roads Apply to Climate

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Vapors from non-natural coatings are alien to natural fumes. For example, when washing asphalt and concrete roads. Water, beating with great pressure from the nozzles of the watering machine, is destroyed in its molecular structure. Secondly, it then evaporates partly from this coating, partly flows into sewage or storm drains, and also escapes into the atmosphere from treatment facilities without fulfilling its natural duties. The main function of water on earth is to provide biota with mineral and organic substances that dissolve after precipitation from the atmosphere. More details at https://www.actascientific.com/ASMI/pdf/ASMI-SI-01-0009.pdf.

The problems of road cleaning and tidying are almost the same throughout the world. http://www.cominvest-akmt.ru/download/publications/kom2.pdf : "... The main task of summer cleaning is to remove contaminants that accumulate on the surface of the carriageway, sidewalks, public transport stops and elements of the arrangement of roads and streets that They are a source of dusty air, littering urban areas, and also worsen aesthetic perception. In addition to environmental degradation, the presence of a layer of pollution on the roadway can also affect road safety by deteriorating the coefficient of adhesion of the wheel to the road surface. When this layer is moistened, for example, during rain, and the contaminants are converted into gel and plastic formations, the coefficient of adhesion decreases especially sharply. With the growth of the area of cities, the expansion of the road network, the issue of its quality maintenance to reduce the environmental load on the environment is becoming increasingly relevant. Every day in the summer, in such a large metropolis as Moscow, about 2,000 water-jetting and cleaning machines take to the streets. The area of the road network in Moscow is 87.9 million m2 ...".

The controversial point in this quote is the reduction of the environmental load on the environment. Quite the opposite: an increase in water flow affects the climate. It is known that each hectare of soil contains 20 tons of underground living creatures - https://present5.com/osnovnye-sredy-zhizni-tipy-sred-obitaniya-vodnaya/ - each unit that could absorb water and slowly exhale and evaporate organic vapors - The basis of the natural hydrological cycle.

Each of the watering machines makes several flights per day. There are hundreds of large cities in the world. Thousands of smaller cities and towns performing the same tasks. Water washing the roads should be fresh and clean so that nozzles do not clog and pumps work. Water from asphalt evaporates many times faster and more - replenishes artificial fumes - affecting the climate.

Figure 1

In conditions of growing shortage of fresh water and climate change, it is urgent to reconsider your attitude to it.

Typically, when a rubber tire moves along a road, the liquid and mud phase rises and attacks the mudguard. From it, the slurry drains and is evenly distributed around the same place. When hun-

dreds of wheels move, this slurry is mixed with garbage, all this is crushed into fine pulp, gradually dries and turns into dust. Thousands of water-jetting machines wash away this dust. And maybe it doesn't wash off, but supposedly it washes off. On this randomly found image, all the dirt is soaked, it shifts a little and ... remains on the road. It can be seen that the first two cars in the course shift the slurry to the right, and all the others only moisten. Dusting will stop, and then, all the dirt, as it dries, rises into the air with finer dust, hundreds of wheels. This principle of removing dirt from the road depends on the skill of the drivers and the characteristics of the cars.

A lot of inventions are gathering dust in patent archives to reduce useless costs. For example: https://actascientific.com/ASAG/pdf/ASAG-02-0210.pdf.

The essence of this innovation is a simple action that is performed by each or most of the units of transport.

To do this, behind one or all wheels, it is necessary to turn the mudguard around the vertical axis by 10-45 degrees to the right side for right-hand traffic. Then, all or almost all of the slurry will be reflected and, ricochet from the mudguard, shift to the right. Not far, a centimeter by 2 - 3, maybe 10 - 20, depending on speed, consistency, temperature, wind, along the entire path of movement. The main thing here is most moving cars. This can be most accurately determined by the movement of all buses or trolleybuses of one particular route. Since the movement of the wheels of each machine cannot move along the same trajectory, the entire slurry will gradually shift to the right curb and even to it. Regardless of the desires of drivers and device designs. The road surface becomes clean without a special wash. Such a clean and almost dry track - a triangle - we see behind each wheel. It is not necessary to equip all 4 or 6 wheels. Enough 2 or even 1 wheel, but on all or most cars.

So everything what falls from the sky, turn into a means of washing roads, depending on the intensity of movement. Especially important is the cleaning of roads on mountain roads during snowfalls. The snow crushed by the wheels does not immediately melt, turns into a creamy slurry and gradually goes to the side of the road. The road remains dry and clean in winter.

To verify, test such a cleaning method, real experience is needed. It seems to be the most rational in urban conditions, on trolleybus or bus routes. The turned mudguards of all buses of one route will quickly show the impact of the new device on the road. The reconstruction process will follow a chain reaction to all the routes of the city, the mayor of which will decide to conduct a single experience.

The city, which will carry out such modernization, will liquidate almost the entire industry of road maintenance equipment, leaving only machines for cleaning borders. In Moscow alone, 2,000 watering machines disappear. In addition, machines for dispersing sand and salt, all road equipment with bulldozer and brush dumps become unnecessary. Significant production facilities of institutes, factories, offices with all equipment and staff are being freed. But most importantly - reduced water consumption and artificial evaporation, which affect the climate.

Structurally, the model of each type of machine has its own capabilities and should be processed by specialists, taking into account the available near the wheel space, the characteristics of the chassis, sizes. Mud displacement is possible not only with mud flaps. When the wheel moves on both its sides, sludge rollers are formed. On some models, it is rational to establish a small blade behind the wheel, which could shift these rollers to the right side. If you pay attention to the spray raised by the wheels, you will notice that they basically symmetrically fly out equally on both sides. Why not install small aprons on the left side of the wheel, which reduce the range of the spray to the left.

Considering the interaction of wheels with snow, and carrying out the shown possibilities, in real experiments under various conditions of temperature, wind, types of precipitation, other weather conditions, you can achieve an absolutely dry and clean road at the passes where traffic accidents often occur.

For left-hand traffic, all of these structures are mirrored to divert the liquid coating to the left.

There are several other significant device options for moving slurry and snow to the side. The author can take part in any form of cooperation, if there is someone who wants to conduct experiments with the shown invention.

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