Abstract : In the endeavor to build a TPV generator, several technical as well as scientific questions concerning the kinetic gas Theory came up. Here certain questions regarding the excitation and relaxation, using emitting photons of discrete wavelength. (See my thesis in RG)

Introduction: Starting with the search for suiting light for a relatively favorable photocell of silicium I found that light generation through impact excitation in hot gas converts heat to a more suiting light, than the previous TPV generators which used solid emitters from rare earth oxides. See my research paper (energy generation through photovoltaic)

Light generation: Contrary to several contributions by scientists, I have experienced that I was able to generate an intense light in my experiments. The intensity of the light even led to a temporary colorblindness. See the glow of potassium in the picture on my conference paper. Or simply try the experiment yourself. Open the quartz glass conduit of a construction spotlight – remove the tungsten wire – melt one side shut – fill in sodium iodide (1 g.) – now heat up until it vaporizes and keep heating the vapor. It shines. Look and wonder. This proves that the warmth itself leads to the emission of a discontinuous spectrum, and not some procedures inside the flame.

Everyday Experiences: In my Job as a welder I noticed what I thought to be a strange light at the time when torch (Acetylen/oxygen) cutting or welding steel. When steel glows I see the usual glow (emission of a solid body). Whereas if the steel piling was polluted through concrete or salts I perceived an, as I came to learn, discontinuous spectrum of highly intense blinding luminosity. To me this was explicable through the hue of the flame

Kinetic gas theory: The Maxwell-Boltzmann distribution that describes the different speeds of particles in a gas is fundamental here. However, it is missing the inclusion of excitation and relaxation which go with the emission of a photon in the diagrams regarding the Maxwell-Boltzmann distribution (see https://de.wikipedia.org/wiki/Maxwell-Boltzmann-Verteilung). I believe the inclusion of the aforementioned would lead to a change in the Gaussian bell curve. (See considerations Part 2 & 3 RG). Two particles collide and the sum of the kinetic energies leads to the stimulus. Ergo the portion of stimulated Atoms is higher than the Boltzman factor leads to assume. In that process the gas cools off.

Entropy: In Maxwells thought experiment warmer, ergo faster, particles are rejected into a second volume. Yet here it is not the particles themselves, it is their kinetic information that leave the first volume in form of photons. This information can be read out in an eligible second volume. Imagine a solid with a low heat capacity attached to an Ulbricht Sphere. There is no need for a demon to open a hatch and there is no measurement needed the way this is described by Szilárd (https://de.wikipedia.org/wiki/Le%C3%B3_Szil%C3%A1rd). For the procedures work without exterior interference, so they are spontaneous. In my opinion this affects the entropy. Normally all energetic spaces are covered in a volume (shelf model). With the excitation however energy escapes one of the top shelves which results in a reduction in entropy. The photons from the first volume do thermal work in the second volume. Thus it should result in a higher temperature in the second volume. This contradicts the second law of thermodynamics which has not been proven; however, it has been led by through deductive reasoning. I do not believe in the possibility of a perpetual mobile of the second order. Nonetheless it should be possible to reach an energetic transformation above the Carnot limit.

Conclusion: Now the question is how to continue. I recommend an experiment where a quartz glass conduit filled with e.g. potassium is wrapped in a partly mirrored second quartz pipe that has an inlet and outlet for a heating gas which streams between the pipes and a hatch for light to escape. Also making the surrounding pipe into a kind of resonator could be worthwhile. I know where I can manufacture the parts and I am capable of building the experimental design. However I do not have

the financial resources to realize my experiment. Therefore I am asking interested universities to reach out to me and research my theories. This is only fundamental research but, like with the research of laser technology, it has potential only waiting to be found. Graphic and list of collisions next page
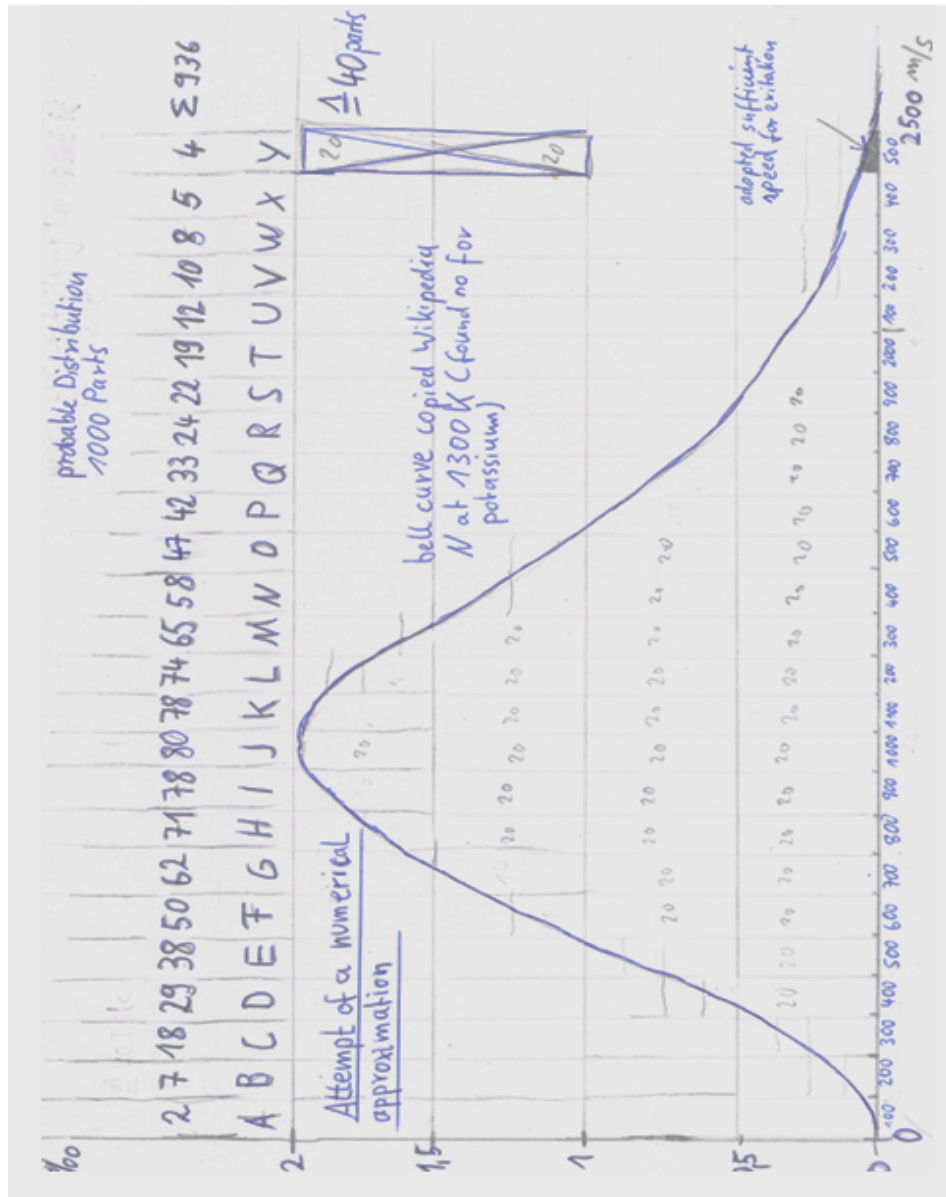
Addition of velocity for 2 Atoms possible collide [1]

Field addition	Velocity addition (m/s)	Quantity of Atoms with together enough kinetic energy	
example A → B	300 m/s	2 + 7 = 9 not enough energy here after not further mentioned	
A → x A → y	2500 m/s 2600	7 6	13
B + w B + x B + y	2500 2600 2700	(7+8) 15 12 11	38
C + V C + w C + x C + y	2500 2600 2700 2800	(18+10) 28 18 + 8 26 18 + 5 23 18 + 4 22	99
D + U D + V D + w D + X D + y	(400+2100) 2500 2600 2700 2800 2900	(12 + 29) 41 (10 + 29) 39 (8 + 29) 37 (5 + 29) 34 (4 + 29) 33	184
E + T ↓ E + Y	2500 ↓ 3000	38 + 19 ↓ ↓ 38 + 4	286
F + S ↓ F + Y	2500 ↓ 3100	50 + 22 + 19 + 12 + 10 + 8 + 5 + 4 = ×7	430
G + R ↓ G + Y	2500 ↓ 3200	8× 62 + 24 + 22+ =	600
H + Q ↓ H + Y	2500 ↓ 3300	9× 71 + 33 + 24 + ⋯ =	776
I + P ↓ I + Y	2500 ↓ 3400	10× 78 + 42 + 33 + ⋯ =	959
J + O ↓ J + Y	(1000 + 1500) ↓ (1000 + 1500)	11× 80 + 47 + 42 + ⋯ =	1106
K + N K + Y	2500 3600	12× 78 + 58 + 47 + ⋯ =	1220
L + M L + Y	2500 ↓ 3700	13× 74 + 65 + 58 + ⋯ =	1311 →

List

Field	velocity addition m/s	Quantity	
M + N ↓ M + Y	(1300 + 1400) 2700 ! ↓ 3800	65·12 + 58 + 47 + ···	1064
N + O ↓ N + Y	(1400 + 1500) 2900 ↓ 3900	58·11 + 47 +	864
O + P ↓ O + Y	3100 ↓ 4000	47·10 + 42 + 33 + ···	649
P + Q ↓ P + Y	3300 ↓ 4100	42·9 + 33 + 24 + 22 + ···	512
Q + R ↓ Q + Y	3500 ↓ 4200	33·8 + 24 + 22 + ···	368
R + S ↓ R + Y	3700 ↓ 4300	24·7 + 22 + 19 + ···	248
S + T ↓ S + Y	3900 ↓ 4400	22·6 + 19 + 12 ···	190
T + U ↓ T + Y	4100 ↓ 4500	19·5 + 12 ·····	134
U + V ↓ U + Y	4300 ↓ 4600	12·4 + 10 + 8 ···	75
V + W ↓ V + Y	4500 ↓ 4700	10·3 + 8 + 5 + 4	47
W + X ↓ W + Y	4700 4800	8·2 + 5 + 4	25
X + Y	4900	5·1 + 4	9

11.282

Possible collisions with sufficient energy

How much realy happen I can't calculate. Created Photon's
accumulate in the gas or escape through the glas.

Ingo Tjards