

UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL BOARD

IPR2014-00781,782,1083,1086, and 1087  
Patent 7,147,759

**PATENT OWNER ZOND LLC'S  
DEMONSTRATIVE EXHIBIT**

## OBVIOUSNESS

### Claims 1-50 Are Not Obvious Over Wang and Kudryavtsev

- ❖ Wang and Kudryavtsev would not have taught:
  1. “an amplitude and rise time of the voltage pulse chosen to increase an excitation rate of ground state atoms that are present in the weakly ionized plasma create a multi-step ionization process that generates strongly ionized plasma,” As Recited In Claim 20 And Similarly in Claim 40
  2. “a multi-step ionization process comprising exciting the ground state atoms to generate excited atoms, then ionizing the excited atoms within the weakly-ionized plasma without forming an arc discharge,” Recited In Claim 20 And Similarly In Claim 40

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- ❖ Wang instead teaches controlling a power pulse: the target 14 is powered by narrow pulses of negative DC power supplied from a pulsed DC power supply 80, as illustrated in FIG. 1. The pulse form is generically represented in the timing diagram of FIG. 4 and includes a periodic sequence of power pulses. (col. 5, ll. 23-27).

Figures 4, 5, and 6 in Wang shows the amplitude or rise time of power, not voltage.

“the power pulse width is preferably specified rather than voltage pulse width.” (col. 5, ll. 52-54)

- ❖ Neither Wang nor Kudryavtsev teach an increase in the excitation rate of the ground state atoms

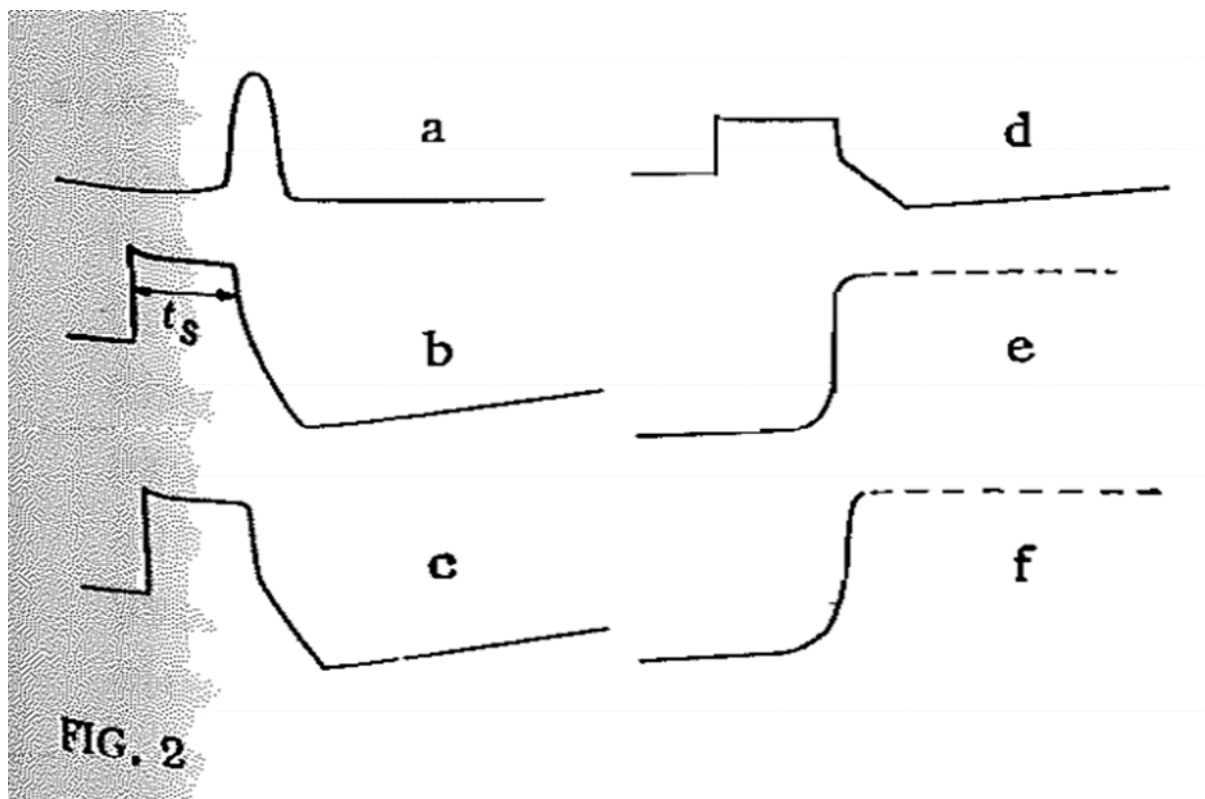
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- ❖ Kudryavtsev fails to teach that the amplitude and rise time of the voltage pulse are chosen to increase an excitation rate of ground state atoms. FIG. 2 shows no change in the current (a) on the rising edge of the voltage pulse (b).

## OBVIOUSNESS

Claims 1-50 Are Not Obvious Over Wang and Kudryavtsev



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