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Progress (cont.)

- ✓ How does a candle work?
- ✓ How does a fireplace work?
- Regimes of heterogeneous combustion
 Sources of NOx
 Single particle vs. cloud combustion

- As rec'd, dry, and daf bases for coal Turbulence effects
- Swirl
- ✓ Use of NASA-Lewis code
- Elementary step reaction sequences vs. global mechanisms

Examples of Heterogeneous Combustion

- 1. 1989 Stadium of Fire
- 2. Coal Particle
- 3. Forest Fire

1989 Stadium of Fire

BYU Football Stadium

Alan Osmond's Goal:

1 million firecrackers to go off in series in 7 seconds









Oops!

- Group combustion (not single firecracker!)
- No one was injured (thankfully!)
- People nearby got their eyebrows singed!



Coal Particle Video

Ken Bateman MS in Mech Eng, BYU

Forest Fire Video

Jack Cohen, USDA Forest Fire Research Station Missoula, MT

Kitchen Fire

- This dramatic video (30-seconds, very short) shows how to deal with a common kitchen fire - oil in a frying pan. Please read the following introduction and then watch the show ... It's a real eye-opener!! Perhaps you'll want to send this one on to your family and friends.
- A certain individual wrote that, when stationed in Charleston Navy base at the Fire Fighting Training school, they would demonstrate this same scenario with a deep fat fryer set on the fire field. An instructor would don a fire suit and using an 8 oz Cup at the end of a10 foot pole toss water onto the grease fire.
- The results got the attention of the students. The water, being heavier than the oil, sinks to the bottom where it instantly becomes superheated. The EXPLOSIVE force of the steam blows the burning oil up and out. On the open field, it became a thirty foot high fireball that resembled a Nuclear Blast. Inside the confines of a kitchen, the fire ball hits the Ceiling and fills the entire room. Also, do not throw sugar or flour on a grease fire. One cup creates an explosive force.

Play Kitchen Fire Video