

## Advancements in Aerodynamics

LOW control techniques and aerodynamic improvements developed at the Georgia Institute of Technology could save the U.S. trucking industry hundreds of millions of gallons of fuel per year. Aerodynamic improvements on truck trailers -- such as rounded corners -- coupled with pneumatic controls for blowing air from slots, help reduce drag and improve fuel economy for heavy trucks. Recent tests done using a full-size tractor-trailer truck show the techniques based on systems originally developed for jet aircraft wings could increase fuel economy by as much as 12 percent. The improvements could also enhance braking and directional control, potentially improving safety for the big vehicles.

"Aerodynamically, we have resolved unknowns raised in earlier testing and the next step is to get this into a fleet of trucks for more extensive testing," said Robert Englar, principal research engineer of Georgia Tech Research Institute. The aerodynamic improvements produced by geometry changes involve rounding trailer corners, installing fairings and making other changes that smooth airflow over the boxy trailers. Fuel savings also comes from pneumatic devices that blow air from slots at the rear of the trailer to further improve and prevent separation of air flow.



## Use Digital Camera in the Dark

NANO TECHNOLOGY could make it possible for homes to have "smart" walls responsive to the environment in the room, a digital camera sensitive enough to work in the dark or clothing with the capacity to turn the sun's power into electrical energy. Researchers at the University of Toronto have invented an infrared-sensitive material that could shortly turn these possibilities into realities. "We made particles from semiconductor crystals which were exactly two, three or four nanometres in size. The nanoparticles were so small they remained dispersed in everyday solvents just like the particles in paint," explains Professor Ted Sargent of University of Toronto's Department of Electrical and Computer Engineering. The discovery may also help in the quest for

renewable energy sources. Flexible, roller-processed solar cells have the potential to harness the sun's power but efficiency, flexibility and cost are going to determine how that potential becomes practice.



## Kids Playing Computer Games Fail in Studies

A new study conducted by leading scientist Professor Robert Winston suggests that children who spend hours playing computer games and watching television are failing to develop the skills to succeed at school. He also added that youngsters are not acquiring the long-term powers of study and application they need in class. This is because the games they play and programmes they watch require only short-term bursts of