Impacts of Rail Pressure and Biodiesel Composition on Soot Nanostructure

P-20

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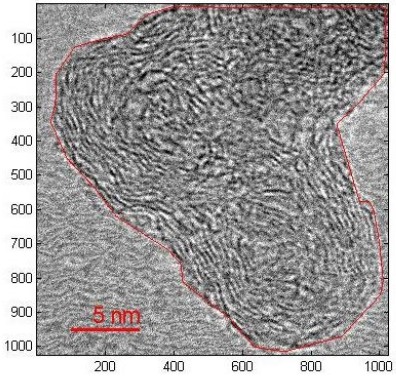
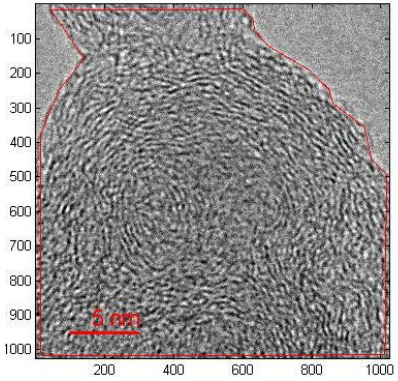
ULSD

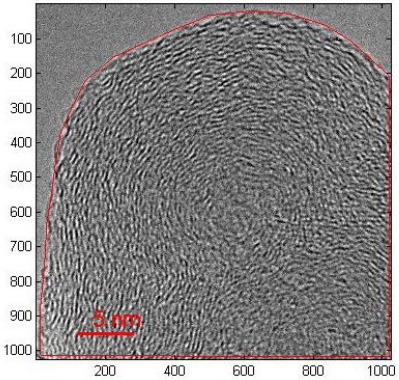


30% load + 50MPa

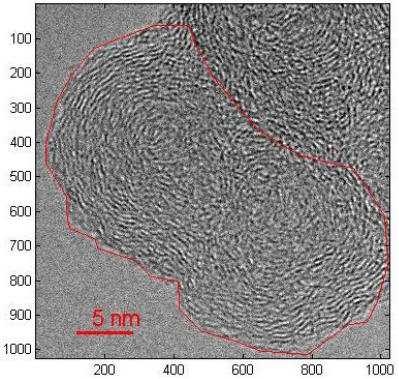


30% load + 100MPa

B20



30% load + 50MPa



30% load + 100MPa

Both fuel-type and fuel injection pressure affect soot reactivity and primary particle size

- ***B20 soot has higher average primary particle size compared to ULSD***
  - ***Number of primary particles not significantly impacted***
- ***Soot disorder (fractal dimension) increases with higher load***
  - ***Moderate impact of injection pressure***
  - ***Not impacted by fuel type***
- ***Overall reactivity:***
  - ***B20 soot more reactive than ULSD***
  - ***Higher injection pressure increases reactivity***