**All-Silicon Zeolite Supported Pt Nanoparticles for Green On-Board Inert Gas Generation System**

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**Fig. S1.** Pt particle sizes of (a) Pt/Si-Beta, (b) Pt/Si-ZSM-5, (c) Pt/SBA-15.

 

*a*. CA≈31.6° b. CA≈27.2°



c. CA≈18.9°

**Fig. S2.** Water contact angle date of (a) Si-Beta, (b) Si-ZSM-5, (c) SBA-15.

**Table S1** The values of *T*50 and *T*98 for combustion of methylcyclohexane on Pt/Si-Beta with various space velocity.

|  |  |
| --- | --- |
| Space Velocity (min-1) |  Activity (℃) |
| *T*50 | *T*98 |
| 250 | 143 | 157 |
| 500 | 150 | 166 |
| 1000 | 159 | 173 |

**Table S2** The values of *T*50 and *T*98 for combustion of methylcyclohexane on Pt/Si-Beta with various relative humidity in feed gas.

|  |  |
| --- | --- |
| Relative Humidity | Activity (℃) |
| *T*50 | *T98* |
| 0% | 150 | 166 |
| 50% | 151 | 167 |
| 90% | 151 | 167 |

**Table S3** The composition of aviation kerosene RP-3.

|  |  |  |  |
| --- | --- | --- | --- |
| Compounds | C | H | Mass fraction/% |
| Nonane | 9 | 20 | 0.04 |
| Cyclohexane, 1,1,3,5-tetramethyl-, cis- | 10 | 20 | 0.02 |
| Cyclohexane, propyl- | 9 | 18 | 0.04 |
| Octane, 2,6-dimethyl- | 10 | 22 | 0.02 |
| Cyclooctane, 1-methyl-3-propyl- | 12 | 24 | 0.04 |
| Cyclohexane, 1,1,2,3-tetramethyl- | 10 | 20 | 0.13 |
| Cyclohexane, 1-ethyl-2,3-dimethyl- | 10 | 20 | 0.15 |
| Nonane, 2-methyl- | 10 | 22 | 0.08 |
| Nonane, 3-methyl- | 10 | 22 | 0.06 |
| m-Menthane, (1S,3R)-(+)- | 10 | 20 | 0.09 |
| Cyclohexane, 1-ethyl-2,3-dimethyl- | 10 | 20 | 0.32 |
| 3-Hexene, 3-ethyl-2,5-dimethyl- | 10 | 20 | 0.32 |
| m-Menthane, (1S,3R)-(+)- | 10 | 20 | 0.10 |
| 3-Hexene, 3-ethyl-2,5-dimethyl- | 10 | 20 | 0.17 |
| Decane | 10 | 22 | 2.35 |
| Triallylsilane | 9 | 16 | 0.12 |
| Ethylidenecyclooctane | 10 | 18 | 0.05 |
| 1-Ethyl-2-heptafluorobutyryloxycyclohexane | 12 | 15 | 0.16 |
| Cyclopentene, 1,3-dimethyl-2-(1-methylethyl)- | 10 | 18 | 0.15 |
| Undecane, 5-methyl- | 12 | 26 | 0.07 |
| Decane, 4-methyl- | 11 | 24 | 1.06 |
| Cyclohexane, (1-methylpropyl)- | 10 | 20 | 0.10 |
| Cyclohexane, butyl- | 10 | 20 | 0.75 |
| Cyclohexane, 1,1,3-trimethyl- | 9 | 18 | 0.23 |
| 1-Decanol, 2-hexyl- | 16 | 34 | 0.22 |
| Cyclohexane, 1,1-dimethyl-2-propyl- | 11 | 22 | 0.43 |
| cis,cis,cis-1-Isobutyl-2,5-dimethylcyclohexane | 12 | 24 | 0.31 |
| Cyclohexane, 1,1,3-trimethyl- | 9 | 18 | 0.42 |
| Naphthalene, decahydro-, trans- | 10 | 18 | 2.88 |
| Tridecane, 7-methyl- | 14 | 30 | 0.54 |
| Decane, 2-methyl- | 11 | 24 | 1.64 |
| Decane, 3-methyl- | 11 | 24 | 1.04 |
| Naphthalene, decahydro-2-methyl- | 11 | 20 | 0.39 |
| Cyclohexane, 1-ethyl-2-propyl- | 11 | 22 | 0.71 |
| Cyclohexane, 1-ethyl-1-methyl- | 9 | 18 | 0.73 |
| Undecane | 11 | 24 | 16.76 |
| trans-Decalin, 2-methyl- | 11 | 20 | 3.32 |
| Undecane, 5-methyl- | 12 | 26 | 0.96 |
| Naphthalene, decahydro-2-methyl- | 11 | 20 | 0.30 |
| trans-4a-Methyl-decahydronaphthalene | 11 | 20 | 4.68 |
| Cyclohexane, pentyl- | 11 | 22 | 2.19 |
| Cyclopentane, hexyl- | 11 | 22 | 0.66 |
| Cyclohexane, 1,2,4,5-tetraethyl-, (1.alpha.,2.alpha.,4.alpha.,5.alpha.)- | 14 | 28 | 0.87 |
| Cyclohexane, 1,2,4,5-tetraethyl-, (1.alpha.,2.alpha.,4.alpha.,5.alpha.)- | 14 | 28 | 1.42 |
| Undecane, 6-methyl- | 12 | 26 | 1.27 |
| Undecane, 4-methyl- | 12 | 26 | 0.73 |
| Undecane, 2-methyl- | 12 | 26 | 2.05 |
| 8-Hexadecyne | 16 | 30 | 0.96 |
| Undecane, 3-methyl- | 12 | 26 | 1.22 |
| Naphthalene, decahydro-2,6-dimethyl- | 12 | 22 | 1.46 |
| Cyclohexane, 1-ethyl-1-methyl- | 9 | 18 | 1.40 |
| Cyclohexane, (1,3-dimethylbutyl)- | 12 | 20 | 1.27 |
| Dodecane | 12 | 26 | 19.26 |
| Naphthalene, decahydro-2,6-dimethyl- | 12 | 22 | 0.38 |
| Undecane, 2,6-dimethyl- | 13 | 28 | 3.29 |
| Naphthalene, decahydro-2,6-dimethyl- | 12 | 22 | 0.22 |
| Tetradecane, 2,6,10-trimethyl- | 17 | 36 | 0.20 |
| Cyclohexane, 2-butyl-1,1,3-trimethyl- | 13 | 26 | 1.05 |
| cis, cis-3-Ethylbicyclo[4.4.0]decane | 12 | 22 | 0.67 |
| Bicyclo[4.1.0]heptane, 3-methyl-7-pentyl- | 13 | 24 | 0.43 |
| Cyclohexane, (4-methylpentyl)- | 12 | 24 | 1.14 |
| Cyclopentane, 1-pentyl-2-propyl- | 13 | 26 | 0.42 |
| cis,cis-1,6-Dimethylspiro[4.5]decane | 12 | 22 | 0.21 |
| Dodecane, 4-methyl- | 13 | 28 | 0.39 |
| Dodecane, 2-methyl- | 13 | 28 | 1.90 |
| Dodecane, 3-methyl- | 13 | 28 | 0.74 |
| 1-Decene, 4-methyl- | 11 | 22 | 2.61 |
| Bicyclo[2.2.2]octane, 2-methyl- | 7 | 14 | 0.19 |
| 6-Tridecene, 7-methyl- | 14 | 28 | 0.24 |
| Cyclohexane, 1,2,4,5-tetraethyl-, (1.alpha.,2.alpha.,4.alpha.,5.alpha.)- | 14 | 28 | 0.23 |
| Tridecane | 13 | 28 | 7.67 |
| Cyclohexane, 1-(cyclohexylmethyl)-3-methyl-, cis- | 14 | 26 | 0.07 |
| 1,1'-Bicyclohexyl | 12 | 22 | 0.23 |
| Heptylcyclohexane | 14 | 26 | 0.12 |
| Tridecane, 4-methyl- | 14 | 30 | 0.03 |
| Tridecane, 2-methyl- | 14 | 30 | 0.06 |
| Tetracosane | 24 | 50 | 0.02 |
| Hexadecane, 2,6,10,14-tetramethyl- | 20 | 42 | 0.05 |
| Tetradecane | 14 | 30 | 0.04 |