

Table sort by year (most recent on top)

| Year | DOI                                                                                                               | Adsorbent                                                                                                  |
|------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 2020 | <a href="https://doi.org/10.1016/j.chemosphere.2020.125862">https://doi.org/10.1016/j.chemosphere.2020.125862</a> | carbons: ordered mesoporous carbon (OMC), activated carbon fiber (ACF) and granular activated carbon (GAC) |
| 2020 | <a href="https://doi.org/10.1016/j.energy.2019.116774">https://doi.org/10.1016/j.energy.2019.116774</a>           | activated carbon-graphene composite                                                                        |
| 2020 | <a href="https://doi.org/10.3390/ma13040917">https://doi.org/10.3390/ma13040917</a>                               | Raw and Calcined Halloysite                                                                                |
| 2020 | <a href="https://doi.org/10.1016/j.seppur.2019.115831">https://doi.org/10.1016/j.seppur.2019.115831</a>           | CMS, 5A                                                                                                    |
| 2020 | <a href="https://doi.org/10.1016/j.micromeso.2019.109916">https://doi.org/10.1016/j.micromeso.2019.109916</a>     | mesoporous silica MCM-41 and SBA-15 impregnated by Imidazolium based ionic liquids                         |
| 2020 | <a href="https://doi.org/10.22146/ijc.38978">https://doi.org/10.22146/ijc.38978</a>                               | Zeolite-Y Templated Carbon                                                                                 |
| 2020 | <a href="https://doi.org/10.1007/s11356-020-07830-4">https://doi.org/10.1007/s11356-020-07830-4</a>               | AC from Pinus canariensis cones                                                                            |

|      |                                                                                                                               |                                                                     |
|------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 2020 | <a href="https://doi.org/10.1126/sciadv.aa&lt;br/&gt;z4322">https://doi.org/10.1126/sciadv.aa<br/>z4322</a>                   | phosphate-anion pillared MOF<br>ZnAtzPO <sub>4</sub>                |
| 2020 | <a href="https://doi.org/10.1021/acs.iecr.&lt;br/&gt;9b06294">https://doi.org/10.1021/acs.iecr.<br/>9b06294</a>               | Anion-Pillared Metal–Organic<br>Frameworks                          |
| 2019 | <a href="https://doi.org/10.1016/j.jcou.20&lt;br/&gt;19.03.001">https://doi.org/10.1016/j.jcou.20<br/>19.03.001</a>           | three-dimensionally ordered<br>micromesoporous carbon               |
| 2019 | <a href="https://doi.org/10.1038/s42004-&lt;br/&gt;019-0144-1">https://doi.org/10.1038/s42004-<br/>019-0144-1</a>             | SAPO-34                                                             |
| 2019 | <a href="https://doi.org/10.1016/j.microm&lt;br/&gt;eso.2019.04.004">https://doi.org/10.1016/j.microm<br/>eso.2019.04.004</a> | imidazolium-based ionic liquids<br>confined into HKUST-1 frameworks |
| 2019 | <a href="https://doi.org/10.1016/j.seppur.&lt;br/&gt;2018.11.069">https://doi.org/10.1016/j.seppur.<br/>2018.11.069</a>       | carbon molecular sieve pellets                                      |
| 2018 | <a href="https://doi.org/10.1021/acs.iecr.&lt;br/&gt;8b04076">https://doi.org/10.1021/acs.iecr.<br/>8b04076</a>               | Zeolites NaX, KA, and CaA and Activated<br>Alumina                  |
| 2018 | <a href="https://doi.org/10.1115/1.40405&lt;br/&gt;30">https://doi.org/10.1115/1.40405<br/>30</a>                             | Shale                                                               |
| 2018 | <a href="https://doi.org/10.1007/s10450-&lt;br/&gt;018-9935-4">https://doi.org/10.1007/s10450-<br/>018-9935-4</a>             | MCM-36 zeolite functionalized by acidic<br>ionic liquid             |

|      |                                                                                                                                 |                                                                      |
|------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 2018 | <a href="https://doi.org/10.1016/j.micromeso.2018.04.007">https://doi.org/10.1016/j.micromeso.2018.04.007</a>                   | 13X                                                                  |
| 2018 | <a href="https://doi.org/10.1016/j.jngse.2017.11.016">https://doi.org/10.1016/j.jngse.2017.11.016</a>                           | 13X, 5A                                                              |
| 2017 | <a href="https://doi.org/10.1016/j.ijheatmasstransfer.2016.12.114">https://doi.org/10.1016/j.ijheatmasstransfer.2016.12.114</a> | AC powder                                                            |
| 2017 | <a href="https://doi.org/10.3390/en10050661">https://doi.org/10.3390/en10050661</a>                                             | Coal                                                                 |
| 2017 | <a href="https://doi.org/10.1016/j.jcou.2017.01.029">https://doi.org/10.1016/j.jcou.2017.01.029</a>                             | MOF Zn <sub>4</sub> (pydc) <sub>4</sub> (DMF) <sub>2</sub> ·3DMF (1) |
| 2017 | <a href="https://doi.org/10.1021/acsami.7b08117">https://doi.org/10.1021/acsami.7b08117</a>                                     | HKUST-1, HKUST-1@SBA-15 composites                                   |
| 2017 | <a href="https://doi.org/10.1016/j.micromeso.2017.01.015">https://doi.org/10.1016/j.micromeso.2017.01.015</a>                   | zeolites (types AQSOA-Z01, Z02 and Z05)                              |
| 2016 | <a href="https://doi.org/10.3906/kim-1507-95">https://doi.org/10.3906/kim-1507-95</a>                                           | chemically modified activated carbons                                |
| 2016 | <a href="https://doi.org/10.1039/c5ta08261g">https://doi.org/10.1039/c5ta08261g</a>                                             | MOF                                                                  |

|      |                                                                                                                                 |                                                 |
|------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 2016 | <a href="https://doi.org/10.1016/j.micromeso.2015.09.035">https://doi.org/10.1016/j.micromeso.2015.09.035</a>                   | hierarchical SAPO-34 constructed by nano-sheets |
| 2016 | <a href="https://doi.org/10.1080/01496395.2015.1085880">https://doi.org/10.1080/01496395.2015.1085880</a>                       | natural, untreated clinoptilolite               |
| 2016 | <a href="https://doi.org/10.1515/ijcre-2015-0124">https://doi.org/10.1515/ijcre-2015-0124</a>                                   | CMS                                             |
| 2016 | <a href="https://doi.org/10.1016/j.cej.2015.07.055">https://doi.org/10.1016/j.cej.2015.07.055</a>                               | Porous MgO(chemisorption)                       |
| 2016 | <a href="https://doi.org/10.1002/cjce.22389">https://doi.org/10.1002/cjce.22389</a>                                             | Athabasca oil sands solids                      |
| 2015 | <a href="https://doi.org/10.1016/j.cej.2015.02.065">https://doi.org/10.1016/j.cej.2015.02.065</a>                               | diatomite/MFI-type zeolite composites           |
| 2015 | <a href="https://doi.org/10.1016/j.jes.2014.10.015">https://doi.org/10.1016/j.jes.2014.10.015</a>                               | ordered mesoporous carbon                       |
| 2015 | <a href="https://doi.org/10.1007/s10450-015-9649-9">https://doi.org/10.1007/s10450-015-9649-9</a>                               | Chinese dry coal                                |
| 2015 | <a href="https://doi.org/10.1016/j.ijheatmasstransfer.2014.10.012">https://doi.org/10.1016/j.ijheatmasstransfer.2014.10.012</a> | phenol resin based adsorbents                   |

|      |                                                                                                                                 |                                                     |
|------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 2015 | <a href="https://doi.org/10.1016/j.energy.2014.11.022">https://doi.org/10.1016/j.energy.2014.11.022</a>                         | MIL-101Cr                                           |
| 2015 | <a href="https://doi.org/10.1016/j.applthermaleng.2014.12.001">https://doi.org/10.1016/j.applthermaleng.2014.12.001</a>         | packed multi-walled carbon nanotubes                |
| 2014 | <a href="https://doi.org/10.1016/j.cej.2014.02.057">https://doi.org/10.1016/j.cej.2014.02.057</a>                               | phosphonium ionic liquid modified silica            |
| 2014 | <a href="https://doi.org/10.1021/cm403697m">https://doi.org/10.1021/cm403697m</a>                                               | MOF NPC-4                                           |
| 2014 | <a href="https://doi.org/10.1021/ie502928y">https://doi.org/10.1021/ie502928y</a>                                               | CMS-131510                                          |
| 2014 | <a href="https://doi.org/10.1016/j.cej.2014.06.091">https://doi.org/10.1016/j.cej.2014.06.091</a>                               | mesoporous silica MCM-41                            |
| 2014 | <a href="https://doi.org/10.1016/j.ijheatmasstransfer.2014.02.046">https://doi.org/10.1016/j.ijheatmasstransfer.2014.02.046</a> | parent and surface treated activated carbon powders |
| 2014 | <a href="https://doi.org/10.1007/s13738-013-0347-9">https://doi.org/10.1007/s13738-013-0347-9</a>                               | MIL-101, AC                                         |
| 2014 | <a href="https://doi.org/10.1007/s10098-014-0788-6">https://doi.org/10.1007/s10098-014-0788-6</a>                               | biomass derived activated carbon                    |

|      |                                                                                                               |                                                                  |
|------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 2013 | <a href="https://doi.org/10.2478/gospo-2013-0042">https://doi.org/10.2478/gospo-2013-0042</a>                 | Coal                                                             |
| 2013 | <a href="https://doi.org/10.1007/s10934-012-9612-z">https://doi.org/10.1007/s10934-012-9612-z</a>             | MIL-53(Al)                                                       |
| 2013 | <a href="https://doi.org/10.1021/am400122r">https://doi.org/10.1021/am400122r</a>                             | Structured zeolite 13X monoliths                                 |
| 2013 | <a href="https://doi.org/10.1016/j.fuproc.2012.09.017">https://doi.org/10.1016/j.fuproc.2012.09.017</a>       | fly ash based composites of MEA/DMA and DEA/DMA                  |
| 2012 | <a href="https://doi.org/10.1016/j.micromeso.2011.07.016">https://doi.org/10.1016/j.micromeso.2011.07.016</a> | CMS, commercial ATMI carbons                                     |
| 2011 | <a href="https://doi.org/10.1016/j.jhazmat.2011.09.019">https://doi.org/10.1016/j.jhazmat.2011.09.019</a>     | Hierarchically structured carbon–silica aerogel (CSA) composites |
| 2011 | <a href="https://doi.org/10.1016/j.cej.2011.07.051">https://doi.org/10.1016/j.cej.2011.07.051</a>             | MIL-101                                                          |
| 2011 | <a href="https://doi.org/10.1080/01496395.2011.557026">https://doi.org/10.1080/01496395.2011.557026</a>       | Zn-BDC-MOFs                                                      |
| 2011 | <a href="https://doi.org/10.1021/ef101548g">https://doi.org/10.1021/ef101548g</a>                             | Chromium Terephthalate MIL-101 crystal                           |

|      |                                                                                                               |                                              |
|------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 2010 | <a href="https://doi.org/10.1016/j.coal.2009.03.007">https://doi.org/10.1016/j.coal.2009.03.007</a>           | Coal                                         |
| 2010 | <a href="https://doi.org/10.1016/j.carbon.2009.12.001">https://doi.org/10.1016/j.carbon.2009.12.001</a>       | chemically-activated ultramicroporous carbon |
| 2010 | <a href="https://doi.org/10.1016/j.memsci.2009.08.045">https://doi.org/10.1016/j.memsci.2009.08.045</a>       | CMS MSC3K-162 Takeda                         |
| 2010 | <a href="https://doi.org/10.1007/s10450-010-9213-6">https://doi.org/10.1007/s10450-010-9213-6</a>             | Silicalite-1                                 |
| 2010 | <a href="https://doi.org/10.1080/01496390903571192">https://doi.org/10.1080/01496390903571192</a>             | Zeolite 13X and Activated Carbon             |
| 2009 | <a href="https://doi.org/10.1016/j.micromeso.2009.04.029">https://doi.org/10.1016/j.micromeso.2009.04.029</a> | 5A-zeolite and ZSM-5                         |
| 2009 | <a href="https://doi.org/10.1038/nchem.333">https://doi.org/10.1038/nchem.333</a>                             | MOF 1-ppz                                    |
| 2009 | <a href="https://doi.org/10.1007/s10450-009-9185-6">https://doi.org/10.1007/s10450-009-9185-6</a>             | mesoporous silica                            |
| 2009 | <a href="https://doi.org/10.1016/j.ces.2009.03.017">https://doi.org/10.1016/j.ces.2009.03.017</a>             | MCM-41 silica                                |

|      |                                                                                                           |                                                   |
|------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 2009 | <a href="https://doi.org/10.1021/ie900665f">https://doi.org/10.1021/ie900665f</a>                         | MOF crystals                                      |
| 2008 | <a href="https://doi.org/10.1007/s10973-008-9357-8">https://doi.org/10.1007/s10973-008-9357-8</a>         | zeolitic tuff rich in clinoptilolite              |
| 2008 | <a href="https://doi.org/10.1021/ie701701d">https://doi.org/10.1021/ie701701d</a>                         | (LDH) Calcined Layered Double Hydroxides          |
| 2008 | <a href="https://doi.org/10.1021/ie0713240">https://doi.org/10.1021/ie0713240</a>                         | Carbon Nanotubes, Activated Carbon                |
| 2007 | <a href="https://doi.org/10.1039/B700358G">https://doi.org/10.1039/B700358G</a>                           | Pure silica ITQ-32 zeolite, pure silica chabazite |
| 2007 | <a href="https://doi.org/10.1016/S0167-2991(07)80939-6">https://doi.org/10.1016/S0167-2991(07)80939-6</a> | FAU zeolites                                      |
| 2007 | <a href="https://doi.org/10.1021/jp070815v">https://doi.org/10.1021/jp070815v</a>                         | Activated Carbon                                  |
| 2007 | <a href="https://doi.org/10.1021/ja710144k">https://doi.org/10.1021/ja710144k</a>                         | mixed zinc/copper MOF                             |
| 2007 | <a href="https://doi.org/10.1021/la702466d">https://doi.org/10.1021/la702466d</a>                         | MOF-177                                           |

|      |                                                                                                                                 |                                                             |
|------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 2006 | <a href="https://doi.org/10.1016/j.ces.2005.08.033">https://doi.org/10.1016/j.ces.2005.08.033</a>                               | SWS-1L (calcium chloride confined to mesoporous silica gel) |
| 2006 | <a href="https://doi.org/10.1021/jp060748p">https://doi.org/10.1021/jp060748p</a>                                               | CMS Takeda 3A                                               |
| 2006 | <a href="https://doi.org/10.1016/j.carbon.2005.10.020">https://doi.org/10.1016/j.carbon.2005.10.020</a>                         | Activated Carbon BAX950                                     |
| 2006 | <a href="https://doi.org/10.1016/j.ces.2005.11.058">https://doi.org/10.1016/j.ces.2005.11.058</a>                               | zeolite 4A honeycomb monolith                               |
| 2006 | <a href="https://doi.org/10.1016/j.ijheatmasstransfer.2006.02.029">https://doi.org/10.1016/j.ijheatmasstransfer.2006.02.029</a> | activated carbon fiber                                      |
| 2005 | <a href="https://doi.org/10.1016/j.apsusc.2004.12.028">https://doi.org/10.1016/j.apsusc.2004.12.028</a>                         | silicalite-1                                                |
| 2005 | <a href="https://doi.org/10.1016/j.fluid.2005.03.024">https://doi.org/10.1016/j.fluid.2005.03.024</a>                           | Silicalite-1                                                |
| 2005 | <a href="https://doi.org/10.1016/j.micromeso.2004.08.017">https://doi.org/10.1016/j.micromeso.2004.08.017</a>                   | CMS                                                         |
| 2005 | <a href="https://doi.org/10.1021/ef050072h">https://doi.org/10.1021/ef050072h</a>                                               | Takeda CMS 3K-161 pellet                                    |

|      |                                                                                                                     |                                                                                    |
|------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 2005 | <a href="https://doi.org/10.1080/01496390500287846">https://doi.org/10.1080/01496390500287846</a>                   | Takeda CMS 3K pellet                                                               |
| 2005 | <a href="https://doi.org/10.1021/jp0509764">https://doi.org/10.1021/jp0509764</a>                                   | Mesoporous Silica Fibers                                                           |
| 2004 | <a href="https://doi.org/10.1016/j.micromeso.2004.04.020">https://doi.org/10.1016/j.micromeso.2004.04.020</a>       | MCM-41, MCM-48                                                                     |
| 2004 | <a href="https://doi.org/10.1023/B:ADSO.0000039867.14756.ac">https://doi.org/10.1023/B:ADSO.0000039867.14756.ac</a> | 4A and CaX pellets                                                                 |
| 2003 | <a href="https://doi.org/10.1021/jp026764d">https://doi.org/10.1021/jp026764d</a>                                   | MCM-41, Precipitated Silica M001                                                   |
| 2003 | <a href="https://doi.org/10.1021/jp0307708">https://doi.org/10.1021/jp0307708</a>                                   | LTL and ZSM-12 Zeolite crystals                                                    |
| 2002 | <a href="https://doi.org/10.1021/ie010546+">https://doi.org/10.1021/ie010546+</a>                                   | Olesorb-1 (Ag <sup>+</sup> -impregnated clay-based alkene- selective adsorbent)    |
| 2001 | <a href="https://doi.org/10.1021/jp0108263">https://doi.org/10.1021/jp0108263</a>                                   | CMS                                                                                |
| 2001 | <a href="https://doi.org/10.1021/ja0109895">https://doi.org/10.1021/ja0109895</a>                                   | MOF Ni <sub>2</sub> (4,4'-bipyridine) <sub>3</sub> (NO <sub>3</sub> ) <sub>4</sub> |

|      |                                                                                               |                                              |
|------|-----------------------------------------------------------------------------------------------|----------------------------------------------|
| 2001 | <a href="https://doi.org/10.1007/BF02698301">https://doi.org/10.1007/BF02698301</a>           | 13X bead                                     |
| 2000 | <a href="https://doi.org/10.1023/A:1008947132186">https://doi.org/10.1023/A:1008947132186</a> | Aluminophosphate Molecular Sieve<br>AlPO4-11 |

| Adsorbate                                                         | Temperature, K | Instrument                       |
|-------------------------------------------------------------------|----------------|----------------------------------|
| hexamethyldisiloxane                                              | 298 - 318      | IGA-002, Hiden                   |
| ethanol                                                           | 303 - 343      | MSB-VG-S2, Rubotherm             |
| CO <sub>2</sub> , CH <sub>4</sub>                                 | 313            | IGA-001, Hiden                   |
| hydrocarbons (CH <sub>4</sub> and C <sub>2</sub> H <sub>4</sub> ) | 298            | IGA-003, Hiden                   |
| CO <sub>2</sub>                                                   | 303, 313, 323  | IGA, Hiden                       |
| H <sub>2</sub>                                                    | 303 - 323      | Purpose built gravimetric system |
| CO <sub>2</sub>                                                   | 303            | TA Instrument SDT Q-600          |

|                                                               |               |                                           |
|---------------------------------------------------------------|---------------|-------------------------------------------|
| C <sub>2</sub> H <sub>4</sub> , C <sub>2</sub> H <sub>6</sub> | 273, 298      | IGA-100, Hiden                            |
| Propene and Propane                                           | 298           | IGA-100, Hiden                            |
| CO <sub>2</sub>                                               | 293 - 323     | IGA-100, Hiden                            |
| methanol, propane,<br>ethane, propylene                       | 303, 313      | IGA-100, Hiden                            |
| CO <sub>2</sub>                                               | 303, 313, 323 | IGA, Hiden                                |
| CO <sub>2</sub> , CO, and N <sub>2</sub>                      | 298, 308, 318 | magnetic suspension balance,<br>Rubotherm |
| Methanol vapour                                               | 303.2         | IGA-100, Hiden                            |
| water vapour                                                  | 298           | IGA-100B, Hiden                           |
| 2,2,4-<br>trimethylpentane                                    | 343           | IGA-100, Hiden                            |

|                                                                 |           |                                         |
|-----------------------------------------------------------------|-----------|-----------------------------------------|
| CO <sub>2</sub> , CH <sub>4</sub>                               | 323, 343  | IsoSORP MIX FLOW, Rubotherm             |
| CO <sub>2</sub>                                                 | 323, 343  | customized Rubotherm gravimetric system |
| CO <sub>2</sub>                                                 | 303 - 343 | magnetic suspension balance, Rubotherm  |
| CH <sub>4</sub>                                                 | 298 - 313 | IGA-001, Hiden                          |
| CO <sub>2</sub> , N <sub>2</sub> , CH <sub>4</sub>              | 308 - 338 | IGA 002, Hiden                          |
| CO <sub>2</sub>                                                 | 298       | IGA-100, Hiden                          |
| water vapour                                                    | 298 - 333 | Purpose built gravimetric system        |
| CO <sub>2</sub>                                                 | 298 - 473 | IGA, Hiden                              |
| oxygen, nitrogen, carbon dioxide, and water and ethanol vapours | 273 - 348 | IGA, Hiden                              |

|                                                 |           |                                  |
|-------------------------------------------------|-----------|----------------------------------|
| CO <sub>2</sub>                                 | 298       | IGA-100, Hiden                   |
| CO <sub>2</sub> , N <sub>2</sub>                | 298       | IGA-001, Hiden                   |
| CH <sub>4</sub> , C <sub>2</sub> H <sub>6</sub> | 288 - 318 | IGA-003, Hiden                   |
| CO <sub>2</sub>                                 | 323 - 473 | NETZSCH TGA (STA 409 PC/PG Luxx) |
| cyclohexane, toluene,<br>and water              | 293 - 313 | IGA, Hiden                       |
| benzene vapour                                  | 298       | IGA-002, Hiden                   |
| benzene,<br>cyclohexane and<br>hexane           | 298 - 318 | IGA-002, Hiden                   |
| CO <sub>2</sub>                                 | 293 - 353 | MSB, branch not specified        |
| Ethanol                                         | 303 - 343 | MSB-VG-S2, Rubotherm             |

|          |               |                                           |
|----------|---------------|-------------------------------------------|
| Ethanol  | 303 - 343     | MSB-VG-S2, Rubotherm                      |
| NH3      | 298 - 308     | magnetic suspension balance,<br>Rubotherm |
| CO2      | 298 - 333     | IGA-003, Hiden                            |
| CO2, CH4 | 195 - 290     | IGA, Hiden                                |
| CH4, N2  | 303, 323, 343 | magnetic suspension balance,<br>Rubotherm |
| CO2      | 303 - 348     | magnetic suspension balance,<br>Rubotherm |
| Ethanol  | 303 - 343     | MSB-VG-S2, Rubotherm                      |
| CO2      | 298 - 303     | magnetic suspension balance,<br>Rubotherm |
| CO2      | 298 - 373     | EXSTAR TG/DTA 6300                        |

|                                 |               |                                                                   |
|---------------------------------|---------------|-------------------------------------------------------------------|
| CH <sub>4</sub>                 | 291 - 331     | Purpose built gravimetric system                                  |
| xylene isomers and ethylbenzene | 303 - 373     | IGA, Hiden                                                        |
| CO <sub>2</sub>                 | 303           | magnetic suspension balance, Rubotherm                            |
| CO <sub>2</sub>                 | 306 - 333     | TGA 701 analyzer (Leco)                                           |
| CO <sub>2</sub>                 | Not specified | VTI Corp.(now TA) GHP-300 Gravimetric Magnetic Suspension Balance |
| benzene                         | 308           | IGA-002, Hiden                                                    |
| p-xylene                        | 288 - 318     | IGA-003, Hiden                                                    |
| CO <sub>2</sub>                 | 299.8         | TA Instrument TGA SDT Q600                                        |
| CO <sub>2</sub>                 | 298 - 328     | magnetic suspension balance, Rubotherm                            |

|                                                       |             |                                                |
|-------------------------------------------------------|-------------|------------------------------------------------|
| CO <sub>2</sub> , CH <sub>4</sub>                     | 283 - 333   | magnetic suspension balance,<br>Rubotherm      |
| H <sub>2</sub>                                        | 298 - 353   | IGA-01, Hiden                                  |
| O <sub>2</sub> , CO <sub>2</sub> , Ar, N <sub>2</sub> | 302.65      | magnetic suspension balance,<br>Rubotherm      |
| cyclohexane                                           | 323 - 498   | Setaram                                        |
| CO <sub>2</sub>                                       | 298 - 328   | magnetic suspension balance,<br>Rubotherm      |
| n-Alkanes                                             | 371 - 481   | magnetic suspension balance,<br>Rubotherm      |
| H <sub>2</sub>                                        | 80.6 - 83.9 | IGA, Hiden                                     |
| CO <sub>2</sub>                                       | 298         | Rubotherm gravimetric-densimetric<br>apparatus |
| CO <sub>2</sub>                                       | 298         | Rubotherm gravimetric-densimetric<br>apparatus |

|                                                   |            |                         |
|---------------------------------------------------|------------|-------------------------|
| CO <sub>2</sub>                                   | 296 - 332  | Cahn D-101 microbalance |
| Water vapour                                      | 291        | Cahn 2000               |
| CO <sub>2</sub>                                   | 473        | Cahn TGA 121            |
| Water vapour                                      | 293        | Cahn DRB-200            |
| C4 hydrocarbons                                   | 298 - 363  | IGA-3, Hiden            |
| thiophene, benzene,<br>n-octane, and 1-<br>octene | 302 - 373  | IGA, Hiden              |
| Water vapour                                      | 298        | IGA, Hiden              |
| H <sub>2</sub> , D <sub>2</sub>                   | 77.3, 87.3 | IGA, Hiden              |
| H <sub>2</sub> O vapour                           | 298        | Not specified           |

|                                                                             |           |                                           |
|-----------------------------------------------------------------------------|-----------|-------------------------------------------|
| Water vapour                                                                | 306 - 343 | Cahn microbalance                         |
| H <sub>2</sub> , D <sub>2</sub>                                             | 77        | IGA, Hiden                                |
| Water, Benzene,<br>Methanol, n-Octane                                       | 298 - 308 | IGA, Hiden                                |
| propane and<br>propylene                                                    | 423, 473  | magnetic suspension balance,<br>Rubotherm |
| ethanol                                                                     | 300 - 333 | Cahn TG 2121                              |
| cyclopentane                                                                | 254 - 423 | IGA, Hiden                                |
| hydrocarbons<br>(cyclopentane,<br>cyclohexane,<br>benzene, and<br>p-xylene) | 303       | IGA, Hiden                                |
| CO <sub>2</sub> , CH <sub>4</sub> , O <sub>2</sub> , N <sub>2</sub>         | 298       | CI Electronics vacuum microbalance        |
| CO <sub>2</sub> , CH <sub>4</sub>                                           | 308       | magnetic suspension balance,<br>Rubotherm |

|                                                                                                                                                           |                                                         |                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|
| CH <sub>4</sub> , N <sub>2</sub>                                                                                                                          | 298, 308, 323                                           | magnetic suspension balance,<br>Rubotherm |
| CO <sub>2</sub> , C <sub>2</sub> H <sub>4</sub>                                                                                                           | 301                                                     | Cahn C-1000 microbalance                  |
| trichloroethylene                                                                                                                                         | 303                                                     | Purpose built gravimetric system          |
| CO <sub>2</sub>                                                                                                                                           | 273 - 313                                               | Cahn 2000                                 |
| N <sub>2</sub> , n-nonane, and $\alpha$ -pinene                                                                                                           | 77(N <sub>2</sub> ), 313(n-nonane and $\alpha$ -pinene) | IGA, Hiden                                |
| Alkanes                                                                                                                                                   | 373, 523                                                | Modified TGA Perkin-Elmer TGA7            |
| C <sub>2</sub> H <sub>4</sub> , C <sub>2</sub> H <sub>6</sub> , C <sub>3</sub> H <sub>6</sub> ,<br>C <sub>3</sub> H <sub>8</sub>                          | 303                                                     | Cahn 1100 microbalance                    |
| C <sub>6</sub> H <sub>6</sub> , CO, N <sub>2</sub> , C <sub>2</sub> H <sub>2</sub> ,<br>C <sub>2</sub> H <sub>4</sub> , CH <sub>4</sub> , CS <sub>2</sub> | 273 - 393                                               | IGA, Hiden                                |
| Methanol vapour,<br>CO <sub>2</sub> , N <sub>2</sub> O                                                                                                    | 273, 278                                                | IGA, Hiden                                |

|                       |               |                                  |
|-----------------------|---------------|----------------------------------|
| Water vapour          | 298, 308, 318 | Purpose built gravimetric system |
| p-Xylene and o-Xylene | 333 - 373     | Cahn 2000                        |

| Variable pressure/<br>Flow-with carrier/<br>Flow-with purge/<br>Flow-pure adsorbate | Direct link-symmetric/<br>Direct link-asymmetric/<br>Magnetic suspension<br>(asymmetric) |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Variable pressure                                                                   | Direct link-asymmetric                                                                   |
| Variable pressure                                                                   | Magnetic suspension<br>(asymmetric)                                                      |
| Variable pressure                                                                   | Direct link-asymmetric                                                                   |
| Variable pressure                                                                   | Direct link-asymmetric                                                                   |
| Variable pressure                                                                   | Direct link-asymmetric                                                                   |
| Flow-pure adsorbate, 1 bar H <sub>2</sub>                                           | Direct link-asymmetric                                                                   |
| Purge, N <sub>2</sub>                                                               | Direct link-symmetric                                                                    |

|                   |                                     |
|-------------------|-------------------------------------|
| Purge, He         | Direct link-asymmetric              |
| Not specified     | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |

|                   |                                     |
|-------------------|-------------------------------------|
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Not specified     | Direct link-asymmetric              |
| Carrier, N2       | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |

|                   |                                     |
|-------------------|-------------------------------------|
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Carrier, N2       | Direct link-asymmetric              |
| Carrier, N2       | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |

|                   |                                     |
|-------------------|-------------------------------------|
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Carrier, N2       | Direct link-symmetric               |

|                   |                                       |
|-------------------|---------------------------------------|
| Variable pressure | Direct link-symmetric                 |
| Variable pressure | Direct link-asymmetric                |
| Variable pressure | Magnetic suspension<br>(asymmetric)   |
| Purge, N2         | Direct link-Multiple sample<br>holder |
| Not specified     | Magnetic suspension<br>(asymmetric)   |
| Variable pressure | Direct link-asymmetric                |
| Variable pressure | Direct link-asymmetric                |
| Carrier, N2       | Direct link-symmetric                 |
| Variable pressure | Magnetic suspension<br>(asymmetric)   |

|                   |                                     |
|-------------------|-------------------------------------|
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Carrier, He       | Direct link-symmetric               |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Variable pressure | Magnetic suspension<br>(asymmetric) |

|                   |                        |
|-------------------|------------------------|
| Purge, He         | Direct link-asymmetric |
| Variable pressure | Direct link-asymmetric |
| Purge, Ar         | Direct link-asymmetric |
| Carrier, N2       | Direct link-asymmetric |
| Variable pressure | Direct link-asymmetric |
| Variable pressure | Direct link-asymmetric |
| Variable pressure | Direct link-asymmetric |
| Variable pressure | Direct link-asymmetric |
| Carrier, He       | Direct link-asymmetric |

|                                    |                                     |
|------------------------------------|-------------------------------------|
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Magnetic suspension<br>(asymmetric) |
| From 30 mbar He to 60 mbar mixture | Direct link-asymmetric              |
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Direct link-asymmetric              |
| Variable pressure                  | Magnetic suspension<br>(asymmetric) |

|                   |                                     |
|-------------------|-------------------------------------|
| Variable pressure | Magnetic suspension<br>(asymmetric) |
| Purge, He         | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Carrier, He       | Direct link-asymmetric              |
| Not specified     | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |
| Variable pressure | Direct link-asymmetric              |

|                           |                        |
|---------------------------|------------------------|
| Constant pressure, in air | Direct link-asymmetric |
| Variable pressure         | Direct link-asymmetric |

| Model or multiple models<br>Me = M at equilibrium;<br>qe = q at equilibrium      | Analytical or<br>numerical solution? |
|----------------------------------------------------------------------------------|--------------------------------------|
| Equation not given, LDF                                                          | Analytical                           |
| Constant c<br>(1) LDF<br>(2) Diffusion                                           | Analytical                           |
| Constant c, Diffusion with simplified solution                                   | Analytical                           |
| Constant c<br>(1) Surface resistance<br>(2) combined surface barrier + diffusion | Analytical                           |
| (1) Pseudo-first/second order<br>(2) Avrami<br>(3) Constant c, Diffusion         | Analytical                           |
| (1) Pseudo-first/second order<br>(2) Constant c, Intraparticle Diffusion         | Analytical                           |
| (1) Constant c, LDF<br>(2) Pseudo-second order                                   | Analytical                           |

|                                                                                    |            |
|------------------------------------------------------------------------------------|------------|
| Constant c, Diffusion                                                              | Analytical |
| Constant c, Diffusion                                                              | Analytical |
| Constant c, LDF                                                                    | Analytical |
| Constant c, combined surface barrier + micropore diffusion                         | Analytical |
| (1) Pseudo-first/second order<br>(2) Avrami<br>(3) Constant c, Diffusion           | Analytical |
| Constant c (1) Isothermal Diffusion<br>(2) Non-isothermal Diffusion                | Analytical |
| Constant c, Diffusion                                                              | Analytical |
| Constant c<br>(1) Diffusion<br>(2) LDF                                             | Analytical |
| (1) Surface adsorption<br>(2) Constant c, Diffusion<br>(3) Interparticle Diffusion | Analytical |

|                                                                                                                                                 |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Constant c, LDF                                                                                                                                 | Analytical |
| Constant c, LDF                                                                                                                                 | Analytical |
| (1) Constant c, LDF<br>(2) Modified LDF, with variable mass transfer coefficient                                                                | Analytical |
| Constant c, Diffusion                                                                                                                           | Analytical |
| Constant c (1) LDF<br>(2) Diffusion                                                                                                             | Analytical |
| Constant c, LDF                                                                                                                                 | Analytical |
| Langmuirian adsorption-desorption model                                                                                                         | Analytical |
| (1) Pseudo-first/second order<br>(2) Constant c, Intraparticle Diffusion model                                                                  | Analytical |
| (1) Constant c, LDF<br>(2) Constant c, Diffusion<br>(3) Finite system volume, combined surface barrier + diffusion<br>(4) Stretched exponential | Analytical |

|                                                                                                                                                             |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Constant c, Diffusion ( $M(t)/M_e > 70\%$ )                                                                                                                 | Analytical |
| (1) Constant c, Diffusion<br>(2) Linear concentration increase, Diffusion                                                                                   | Analytical |
| Constant c<br>(1) LDF<br>(2) Diffusion<br>(3) combined surface barrier + diffusion                                                                          | Analytical |
| (1) Pseudo-first/second order<br>(2) Boyd's film-Diffusion model<br>(3) Constant c, Diffusion<br>(4) Constant c, Weber-Morris Intraparticle Diffusion model | Analytical |
| Constant c (1) LDF<br>(2) Diffusion                                                                                                                         | Analytical |
| Constant c, LDF                                                                                                                                             | Analytical |
| Constant c, LDF                                                                                                                                             | Analytical |
| Constant c, Diffusion with simplified algorithm                                                                                                             | Analytical |
| Constant c, Diffusion                                                                                                                                       | Analytical |

|                                                                                                                                                                   |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Constant c, Diffusion                                                                                                                                             | Analytical |
| Constant c, Diffusion ( $M(t)/M_e > 70\%$ )                                                                                                                       | Analytical |
| Constant c, Diffusion                                                                                                                                             | Analytical |
| (1) Constant c, LDF<br>(2) Constant c, Diffusion<br>(3) Finite system volume, combined surface barrier + diffusion<br>(4) Stretched exponential                   | Analytical |
| Finite system volume, combined surface barrier + micropore diffusion, numerical solution                                                                          | Numerical  |
| (1) Pseudo-first/second order model<br>(2) Constant c, Weber–Morris intraparticle Diffusion model<br>(3) Boyd’s film-Diffusion model<br>(4) Constant c, diffusion | Analytical |
| Constant c, Diffusion                                                                                                                                             | Analytical |
| Constant c, Diffusion                                                                                                                                             | Analytical |
| (1) Pseudo-first/second order model<br>(2) Linearized Intraparticle Diffusion model                                                                               | Analytical |

|                                             |            |
|---------------------------------------------|------------|
| Constant c, Diffusion                       | Analytical |
| Equation not given                          | Analytical |
| Constant c, Diffusion                       | Analytical |
| Constant c, LDF                             | Analytical |
| Equation not given, LDF                     | Analytical |
| Constant c, LDF                             | Analytical |
| Constant c, Diffusion ( $q(t)/q_e < 70\%$ ) | Analytical |
| Constant c, Diffusion ( $q(t)/q_e < 70\%$ ) | Analytical |
| Constant c, LDF                             | Analytical |

|                                                                        |            |
|------------------------------------------------------------------------|------------|
| Constant c, Diffusion                                                  | Analytical |
| Constant c, LDF                                                        | Analytical |
| Constant c<br>(1) Isothermal Diffusion<br>(2) Non-isothermal Diffusion | Analytical |
| Constant c, Diffusion                                                  | Analytical |
| Constant c, LDF                                                        | Analytical |
| Constant c (1) Isothermal Diffusion<br>(2) Non-isothermal Diffusion    | Analytical |
| Double exponential model                                               | Analytical |
| Constant c, LDF                                                        | Analytical |
| Constant c, LDF                                                        | Analytical |

|                                                                 |            |
|-----------------------------------------------------------------|------------|
| Constant c, Diffusion ( $q(t)/q_e < 70\%$ )                     | Analytical |
| Constant c, Diffusion                                           | Analytical |
| Constant c (1) Unipore Diffusion<br>(2) Bipore Diffusion        | Analytical |
| Constant c, LDF                                                 | Analytical |
| Constant c, Diffusion                                           | Analytical |
| Equation not given                                              | Analytical |
| (1) Double exponential model<br>(2) Stretched exponential model | Analytical |
| Double exponential model                                        | Analytical |
| Constant c, Diffusion                                           | Analytical |

|                                                                                       |            |
|---------------------------------------------------------------------------------------|------------|
| Constant c, Diffusion                                                                 | Analytical |
| Stretched exponential model                                                           | Analytical |
| (1) Constant c, LDF<br>(2) Finite system volume, combined surface barrier + diffusion | Analytical |
| (1) Finite system volume, Diffusion<br>(2) Constant c, Diffusion                      | Analytical |
| LDF, semi-infinite model                                                              | Analytical |
| Constant c, Diffusion                                                                 | Analytical |
| Constant c, Diffusion                                                                 | Analytical |
| Constant c, LDF                                                                       | Analytical |
| Finite system volume, combined surface barrier + micropore diffusion                  | Numerical  |

|                                                                                                                    |                         |
|--------------------------------------------------------------------------------------------------------------------|-------------------------|
| Finite system volume, combined surface barrier + micropore diffusion                                               | Numerical               |
| Constant c, Diffusion                                                                                              | Analytical              |
| Combined surface barrier + diffusion, numerical solution                                                           | Numerical               |
| Constant c<br>(1) Non-isothermal Diffusion<br>(2) Non-isothermal Bidisperse Diffusion Model, numerical solution    | Numerical for model (2) |
| Constant c, LDF                                                                                                    | Analytical              |
| Constant c, Diffusion                                                                                              | Analytical              |
| Constant c, Diffusion                                                                                              | Analytical              |
| (1) Constant c, LDF<br>(2) Constant c, Diffusion<br>(3) Finite system volume, combined surface barrier + diffusion | Analytical              |
| (1) Constant c, LDF<br>(2) Finite system volume, combined surface barrier + diffusion                              | Analytical              |

|                                                                                                       |                                    |
|-------------------------------------------------------------------------------------------------------|------------------------------------|
| (1) Constant c, Diffusion<br>(2) LDF<br>(3) Vermeulen<br>(4) Nakao & Suzuki                           | Numerical for model<br>(2) (3) (4) |
| Equation not given, Isothermal Fickian transport Diffusion model with appropriate boundary conditions | Analytical                         |

| Variable concentration model used?<br>Yes = variable concentration;<br>No = constant concentration;<br>n/a = not applicable | Model assumption: isotherm linearity.<br>Yes = linear model;<br>No = nonlinear model;<br>n/a = not applicable | Model assumption: isothermal condition.<br>Yes = isothermal model;<br>No = non-isothermal model;<br>Both = both isothermal and nonisothermal models used;<br>n/a = not applicable |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Not specified                                                                                                               | n/a                                                                                                           | Yes                                                                                                                                                                               |
| No                                                                                                                          | Yes                                                                                                           | Yes                                                                                                                                                                               |
| No                                                                                                                          | Yes                                                                                                           | Yes                                                                                                                                                                               |
| No                                                                                                                          | Yes for model (2)                                                                                             | Yes                                                                                                                                                                               |
| No for model (3)                                                                                                            | Yes for model (3)                                                                                             | Yes for model (3)                                                                                                                                                                 |
| n/a                                                                                                                         | n/a                                                                                                           | n/a                                                                                                                                                                               |
| No                                                                                                                          | n/a                                                                                                           | Yes                                                                                                                                                                               |

|                  |                   |                   |
|------------------|-------------------|-------------------|
| No               | Yes               | Yes               |
| No               | Yes               | Yes               |
| No               | n/a               | Yes               |
| No               | Yes               | Yes               |
| No for model (3) | Yes for model (3) | Yes for model (3) |
| No               | Yes               | Both              |
| No               | Yes               | Yes               |
| No               | Yes               | Yes               |
| No               | Yes for model (2) | Yes for model (2) |

|                   |     |     |
|-------------------|-----|-----|
| No                | n/a | Yes |
| No                | n/a | Yes |
| No                | No  | Yes |
| No                | Yes | Yes |
| No                | Yes | Yes |
| No                | n/a | Yes |
| n/a               | n/a | n/a |
| n/a               | n/a | n/a |
| Yes for model (3) | Yes | Yes |

|                   |                   |     |
|-------------------|-------------------|-----|
| No                | Yes               | Yes |
| Yes for model (2) | Yes               | Yes |
| No                | Yes for model (2) | Yes |
| No for model (3)  | Yes               | Yes |
| No                | Yes               | Yes |
| No                | n/a               | Yes |
| No                | n/a               | Yes |
| No                | Yes               | Yes |
| No                | Yes               | Yes |

|                   |     |     |
|-------------------|-----|-----|
| No                | Yes | Yes |
| No                | Yes | Yes |
| No                | Yes | Yes |
| Yes for model (3) | Yes | Yes |
| Yes               | Yes | Yes |
| No                | Yes | Yes |
| No                | Yes | Yes |
| No                | Yes | Yes |
| No                | n/a | Yes |

|               |                   |     |
|---------------|-------------------|-----|
| No            | Yes               | Yes |
| Not specified | Yes               | Yes |
| No            | Yes for model (2) | Yes |
| No            | n/a               | Yes |
| Not specified | n/a               | Yes |
| No            | n/a               | Yes |
| No            | Yes for model (2) | Yes |
| No            | Yes               | Yes |
| No            | n/a               | Yes |

|     |                   |      |
|-----|-------------------|------|
| No  | Yes               | Yes  |
| No  | n/a               | Yes  |
| No  | Yes for model (2) | Yes  |
| No  | Yes               | Yes  |
| No  | n/a               | Yes  |
| No  | Yes               | Both |
| n/a | n/a               | n/a  |
| No  | n/a               | Yes  |
| No  | n/a               | Yes  |

|               |     |     |
|---------------|-----|-----|
| No            | Yes | Yes |
| No            | Yes | Yes |
| No            | Yes | Yes |
| No            | n/a | Yes |
| No            | Yes | Yes |
| Not specified | Yes | Yes |
| n/a           | n/a | n/a |
| n/a           | n/a | n/a |
| No            | Yes | Yes |

|                   |     |     |
|-------------------|-----|-----|
| No                | Yes | Yes |
| n/a               | n/a | n/a |
| Yes for model (2) | Yes | Yes |
| Yes for model (1) | Yes | Yes |
| No                | n/a | Yes |
| No                | Yes | Yes |
| No                | Yes | Yes |
| No                | n/a | Yes |
| Yes               | Yes | Yes |

|                   |                      |     |
|-------------------|----------------------|-----|
| Yes               | Yes                  | Yes |
| No                | Yes                  | Yes |
| not specified     | Yes                  | Yes |
| No                | Yes                  | No  |
| No                | n/a                  | Yes |
| No                | Yes                  | Yes |
| No                | Yes                  | Yes |
| Yes for model (3) | Yes for model (2)(3) | Yes |
| Yes for model (2) | Yes                  | Yes |

|               |                   |     |
|---------------|-------------------|-----|
| no            | Yes               | Yes |
| Not specified | Yes for model (2) | Yes |

| Pressure range / Pressure Steps  | Approximately linear conditions over the pressure steps?<br>Yes, No or n/a = not enough information | Kinetic steps same step as equilibrium measurements?<br>Yes, No, Not specified, n/a = only kinetic experiments |
|----------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 0 - 12 kPa / ~0.3 kPa            | Yes                                                                                                 | Yes                                                                                                            |
| 0 - 20 kPa / 2 - 6 kPa           | No                                                                                                  | Not specified                                                                                                  |
| 100 kPa / 100 kPa                | Yes                                                                                                 | Yes                                                                                                            |
| 8 kPa / 8 kPa                    | Yes                                                                                                 | No, larger steps used                                                                                          |
| 20 kPa / step not specified      | n/a                                                                                                 | Not specified                                                                                                  |
| 100 kPa / step not specified     | n/a                                                                                                 | n/a                                                                                                            |
| 101.325 kPa / step not specified | n/a                                                                                                 | Not specified                                                                                                  |

|                                                    |     |                       |
|----------------------------------------------------|-----|-----------------------|
| 40 kPa / 40 kPa                                    | No  | n/a                   |
| 40 kPa / step not specified                        | n/a | n/a                   |
| 0 - 2000 kPa / ~1 - 5 kPa                          | Yes | Yes                   |
| 0.06 - 1 kPa / 0.06 - 1 kPa                        | Yes | No, larger steps used |
| 20 kPa / 10 kPa                                    | Yes | Yes                   |
| 0 - 1000 kPa / 10 - 100 kPa                        | Yes | Yes                   |
| 0 - 19.58 kPa / 0.78 kPa                           | No  | Yes                   |
| (0.1 - 0.9P/P0) /<br>(0.1P/P0)<br>P0 not specified | Yes | Yes                   |
| 4 kPa / 1 kPa                                      | No  | Yes                   |

|                               |     |               |
|-------------------------------|-----|---------------|
| 0 - 7000 kPa / 100 - 1000 kPa | No  | Yes           |
| 0 - 15000 kPa / 1000 kPa      | No  | Yes           |
| 0 - 4000 kPa / ~400 kPa       | No  | Yes           |
| 0 - 1000 kPa / 1 - 700 kPa    | n/a | Not specified |
| 15 - 100 kPa / ~15 - 25 kPa   | No  | Yes           |
| 100 kPa / step not specified  | n/a | n/a           |
| Not specified                 | n/a | Yes           |
| 100 kPa / step not specified  | n/a | Not specified |
| 0 - 100 kPa / 0.1 - 100 kPa   | Yes | Yes           |

|                                                                    |     |     |
|--------------------------------------------------------------------|-----|-----|
| 100 kPa / step not specified                                       | n/a | n/a |
| 12.5 - 25 kPa / 12.5 - 25 kPa                                      | Yes | Yes |
| 20 - 495 kPa / 40 - 55 kPa                                         | Yes | Yes |
| 15 - 100 kPa / step not specified                                  | n/a | n/a |
| 0 - 10 kPa / 0.5 - 1 kPa                                           | No  | Yes |
| (0.00776 - 0.709P/P0) /<br>(~0.007 - 0.07P/P0)<br>P0 not specified | No  | Yes |
| 0 - ~9 kPa / ~0.25 kPa                                             | No  | Yes |
| 0 - 19000 kPa / 2000 kPa                                           | No  | Yes |
| 0 - 9 kPa / ~0.6 - 3 kPa                                           | Yes | Yes |

|                                    |     |                         |
|------------------------------------|-----|-------------------------|
| 0 - 22 kPa / 0.6 - 6 kPa           | Yes | Yes                     |
| 368 - 744 kPa / step not specified | Yes | Not specified           |
| 10 - 200 kPa / 10 - 100 kPa        | No  | Yes                     |
| 0 - 1100 kPa / 0.2 kPa - 100 kPa   | Yes | Yes                     |
| 0 - 100 kPa / ~20kPa               | Yes | No, smaller steps used  |
| 20 - 1100 kPa / step not specified | n/a | n/a                     |
| 0 - 20 kPa / 0.6 - 6 kPa           | No  | Yes                     |
| 50 - 2000 kPa / step not specified | n/a | No / step not specified |
| Not specified                      | n/a | n/a                     |

|                                    |     |                         |
|------------------------------------|-----|-------------------------|
| 100 - 1700 kPa / 400 kPa           | No  | Yes                     |
| 0 - 1.2 kPa / ~0.05 - 0.3 kPa      | No  | Yes                     |
| 140 kPa / 135 kPa                  | No  | n/a                     |
| 101.3 kPa / 101.3 kPa              | n/a | Not specified           |
| 26.7 kPa / ~7kPa                   | Yes | Yes                     |
| 0 - ~24 kPa / ~1 kPa               | No  | Yes                     |
| 0.3 - 0.6 kPa / step not specified | n/a | Not specified           |
| 60.8 kPa / 20 kPa                  | Yes | Yes                     |
| 50 - 2000 kPa / step not specified | n/a | No / step not specified |

|                                     |     |                         |
|-------------------------------------|-----|-------------------------|
| 100 - 5000 kPa / step not specified | n/a | n/a                     |
| 100 - 1950 kPa / 400 kPa            | No  | Yes                     |
| 0 - 700 kPa / 10 - 100 kPa          | Yes | Yes                     |
| 0.16 - 0.5 kPa / step not specified | n/a | Not specified           |
| 50 - 2000 kPa / step not specified  | n/a | No / step not specified |
| 0.03 - 1.6 kPa / ~0.5 - 1.5 kPa     | Yes | Yes                     |
| 3 kPa / 2 kPa                       | Yes | Not specified           |
| 100 kPa / step not specified        | n/a | Not specified           |
| 50 kPa / 50 kPa                     | Yes | Not specified           |

|                                                                  |     |                         |
|------------------------------------------------------------------|-----|-------------------------|
| 10.1 - 101.3 kPa / 10 kPa                                        | Yes | Yes                     |
| 0.002 - 0.4 kPa / 0.002 - 0.4 kPa                                | no  | No, larger steps used   |
| 101.3 kPa / 101.3 kPa                                            | No  | No, larger steps used   |
| $(0 - 0.95P/P_0) /$<br>$(0.05P/P_0)$<br>$P_0 = 2.34 \text{ kPa}$ | Yes | Yes                     |
| 30.4 kPa / step not specified                                    | n/a | No / step not specified |
| Not specified                                                    | n/a | Not specified           |
| 0 - 2.8 kPa / $\sim 0.1 \text{ kPa}$                             | No  | Yes                     |
| 0 - 10 kPa / 0.09 - 5 kPa                                        | No  | Yes                     |
| $(0.1P/P_0) /$ step not specified<br>$P_0$ not specified         | n/a | Not specified           |

|                                 |     |     |
|---------------------------------|-----|-----|
| 0.8 - 7 kPa / 0.5 - 2 kPa       | No  | Yes |
| 0 - 90 kPa / ~1 kPa             | No  | Yes |
| 0 - ~20 kPa / ~0.1 - 7 kPa      | No  | Yes |
| 3 - 10 kPa / 3 - 10 kPa         | Yes | Yes |
| 1.5 kPa / 1.5 kPa               | n/a | n/a |
| 0 - 37 kPa / step not specified | Yes | Yes |
| Not specified                   | n/a | Yes |
| 100 kPa / step not specified    | n/a | n/a |
| ~10 kPa / ~10kPa                | Yes | Yes |

|                                                            |     |                       |
|------------------------------------------------------------|-----|-----------------------|
| ~10 kPa / ~10kPa                                           | Yes | Yes                   |
| 101.3 kPa / 101.3 kPa                                      | Yes | No, larger steps used |
| 0 - 5.53 kPa / 2 kPa                                       | No  | No, larger steps used |
| 0 - 81.1 kPa / 6.7 - 8 kPa                                 | Yes | Yes                   |
| (0 - ~0.95P/P0) /<br>(~0.01 - 0.1P/P0)<br>P0 not specified | No  | Yes                   |
| Not specified                                              | n/a | n/a                   |
| Not specified                                              | n/a | Not specified         |
| 0 - 100kPa / 0.1 - 10 kPa                                  | No  | Yes                   |
| (0.2910 - 0.5295P/P0) /<br>(0.05P/P0)<br>P0 not specified  | No  | Yes                   |

|                                                             |     |               |
|-------------------------------------------------------------|-----|---------------|
| (0.23 - 0.93 P/P0) / step not specified<br>P0 not specified | n/a | Not specified |
| 0.3 kPa / 0.3 kPa                                           | No  | Yes           |

| Sample mass, mg                         | Sample configured for isothermality? | Isotherm linearity confirmed by adsorption and desorption?<br>Yes,<br>No,<br>Hysteresis in isotherm,<br>n/a = linearity is not an assumption of the model |
|-----------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Not specified                           | Not specified                        | n/a                                                                                                                                                       |
| Not specified                           | Not specified                        | No                                                                                                                                                        |
| 500                                     | Not specified                        | No                                                                                                                                                        |
| 60, 100, 140 (CMS);<br>64, 96, 125 (5A) | Not specified                        | No                                                                                                                                                        |
| Not specified                           | Not specified                        | No                                                                                                                                                        |
| 300                                     | Not specified                        | n/a                                                                                                                                                       |
| 10                                      | Not specified                        | n/a                                                                                                                                                       |

|        |               |     |
|--------|---------------|-----|
| 100    | Not specified | No  |
| ~100   | Not specified | No  |
| 100    | Not specified | n/a |
| 28, 50 | Not specified | No  |
| 80     | Not specified | No  |
| 500    | Not specified | No  |
| ~100   | Not specified | No  |
| ~170   | Not specified | No  |
| ~50    | Not specified | No  |

|                         |               |     |
|-------------------------|---------------|-----|
| 2146.3                  | Not specified | n/a |
| 2146 (13X);<br>2322(5A) | Not specified | n/a |
| 70                      | Not specified | n/a |
| ~450                    | Not specified | No  |
| 100                     | Not specified | No  |
| 50                      | Not specified | n/a |
| Not specified           | Not specified | n/a |
| 60 - 90                 | Not specified | n/a |
| 50                      | Not specified | No  |

|               |                                                                                                                |     |
|---------------|----------------------------------------------------------------------------------------------------------------|-----|
| Not specified | Not specified                                                                                                  | No  |
| 75            | Not specified                                                                                                  | No  |
| Not specified | Not specified                                                                                                  | No  |
| 6 - 8         | 6-8mg sample to alleviate the problem caused by the diffusion resistance associated with the adsorbent packing | No  |
| 50, 1000      | Not specified                                                                                                  | n/a |
| ~50           | Not specified                                                                                                  | n/a |
| Not specified | Not specified                                                                                                  | n/a |
| 4588          | Not specified                                                                                                  | No  |
| 47            | Not specified                                                                                                  | No  |

|                                       |               |     |
|---------------------------------------|---------------|-----|
| 44.8                                  | Not specified | No  |
| Not specified                         | Not specified | No  |
| 50 - 60                               | Not specified | No  |
| 100                                   | Not specified | No  |
| ~2000                                 | Not specified | No  |
| Not specified                         | Not specified | No  |
| 77                                    | Not specified | No  |
| 1/3–1/2 volume of<br>sample container | Not specified | No  |
| 5 - 10                                | Not specified | n/a |

|               |               |                        |
|---------------|---------------|------------------------|
| 100           | Not specified | Hysteresis in isotherm |
| 100           | Not specified | No                     |
| 3000 - 4000   | Not specified | No                     |
| 500           | Not specified | n/a                    |
| Not specified | Not specified | n/a                    |
| Not specified | Not specified | n/a                    |
| 50 - 60       | Not specified | No                     |
| 25            | Not specified | No                     |
| 200           | Not specified | n/a                    |

|                                    |                           |     |
|------------------------------------|---------------------------|-----|
| 2000 - 3000                        | Not specified             | No  |
| ~100                               | Not specified             | n/a |
| Not specified                      | Not specified             | No  |
| 15, 30                             | Not specified             | No  |
| 1/3–1/2 volume of sample container | Not specified             | n/a |
| 400                                | Layers of 30 µm thickness | Yes |
| 100                                | Not specified             | n/a |
| 500 - 1000                         | Not specified             | n/a |
| Not specified                      | Not specified             | n/a |

|               |                        |     |
|---------------|------------------------|-----|
| 10 - 20       | Not specified          | No  |
| Not specified | Not specified          | No  |
| 130           | Spread as a thin layer | No  |
| 3 - 5         | Not specified          | n/a |
| 50            | Not specified          | No  |
| Not specified | Not specified          | No  |
| ~100          | Not specified          | n/a |
| Not specified | Not specified          | n/a |
| Not specified | Not specified          | No  |

|               |                         |                        |
|---------------|-------------------------|------------------------|
| 22 - 25       | Not specified           | Yes                    |
| Not specified | Not specified           | n/a                    |
| ~100          | Not specified           | Hysteresis in isotherm |
| Not specified | Not specified           | No                     |
| ~71           | Not specified           | n/a                    |
| 126, 60       | Scattered in glass wool | No                     |
| ~126          | Not specified           | No                     |
| ~50           | Not specified           | n/a                    |
| 3600          | Not specified           | No                     |

|               |                                             |     |
|---------------|---------------------------------------------|-----|
| Not specified | Not specified                               | No  |
| 200 - 300     | Not specified                               | No  |
| 100           | Not specified                               | No  |
| ~50           | Not specified                               | No  |
| 100           | Not specified                               | n/a |
| ~10           | A very small thickness of the zeolite layer | No  |
| Not specified | Not specified                               | No  |
| 500           | Not specified                               | No  |
| ~100          | Not specified                               | No  |

|               |               |    |
|---------------|---------------|----|
| Not specified | Not specified | No |
| ~15           | Not specified | No |

| Experimental signal shown?<br>Me = M at equilibrium;<br>qe = q at equilibrium | Model fitting<br>shown?   | Good fitting?<br>Yes,<br>No and type of the poor fitting<br>(see main paper),<br>n/a = no fitting shown |
|-------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------|
| M(t)/Me vs t                                                                  | Yes                       | Yes                                                                                                     |
| (1) q(t) vs t<br>(2) ln(1-M(t)/Me) vs t<br>(3) M(t)/Me vs t                   | Yes                       | No, Type 4                                                                                              |
| q(t) vs t                                                                     | No                        | n/a                                                                                                     |
| (1) M(t) vs t<br>(2) M(t)/Me vs t                                             | Yes                       | No, Type 1 & 4                                                                                          |
| q(t) vs t                                                                     | No for diffusion<br>model | n/a for diffusion model                                                                                 |
| (1) q(t) vs t<br>(2) ln(qe-q(t)) vs t<br>(3) q(t) vs t <sup>(1/2)</sup>       | Yes                       | Yes                                                                                                     |
| q(t) vs t                                                                     | Yes                       | Yes                                                                                                     |

|                                                  |                        |                         |
|--------------------------------------------------|------------------------|-------------------------|
| $M(t)/M_e$ vs $t$                                | Yes                    | Yes                     |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/M_e$ vs $t^{1/2}$ | Yes                    | Yes                     |
| No                                               | No                     | n/a                     |
| $M(t)/M_e$ vs $t^{1/2}$                          | Yes                    | Yes                     |
| $q(t)$ vs $t$                                    | No for diffusion model | n/a for diffusion model |
| $1 - M(t)/M_e$ vs $t$                            | Yes                    | Yes                     |
| $M'(t)$ vs $t$                                   | No                     | n/a                     |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/M_e$ vs $t^{1/2}$ | Yes                    | Yes                     |
| $q(t)$ vs $t$                                    | Yes                    | Yes                     |

|                                                                          |     |            |
|--------------------------------------------------------------------------|-----|------------|
| $q(t)$ vs $t$                                                            | Yes | No, Type 4 |
| $q(t)$ vs $t$                                                            | Yes | No, Type 4 |
| $q(t)$ vs $t$                                                            | Yes | Yes        |
| $q(t)$ vs $t$                                                            | No  | n/a        |
| (1) $q(t)$ vs $t$<br>(2) $q(t)/q_e$ vs $t^{(1/2)}$                       | Yes | No, Type 3 |
| $q(t)$ vs $t$                                                            | No  | n/a        |
| $M(t)/M_e$ vs $t$                                                        | Yes | Yes        |
| (1) $q(t)$ vs $t$<br>(2) $\ln(q_e - q(t))$ vs $t$<br>(3) $q(t)/t$ vs $t$ | Yes | Yes        |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/M_e$ vs $t$                               | Yes | Yes        |

|                                                                                                          |                        |                         |
|----------------------------------------------------------------------------------------------------------|------------------------|-------------------------|
| $M(t)/M_e$ vs $t$                                                                                        | No                     | n/a                     |
| $M(t)/M_e$ vs $t$                                                                                        | Yes                    | Yes                     |
| $M(t)/M_e$ vs $t$                                                                                        | Yes                    | Yes                     |
| (1) $q(t)$ vs $t$<br>(2) $B(q(t)/q_e)$ vs $t$<br>(3) $\ln(1-q(t)/q_e)$ vs $t$<br>(4) $q(t)$ vs $t^{1/2}$ | No for diffusion model | n/a for diffusion model |
| $M(t)/M_e$ vs $t$                                                                                        | Yes                    | Yes                     |
| $M(t)/M_e$ vs $t$                                                                                        | Yes                    | Yes                     |
| $M(t)/M_e$ vs $t$                                                                                        | Yes                    | Yes                     |
| $(M_e - M(t))/M_e$ vs $t$                                                                                | Yes                    | Yes                     |
| (1) $q(t)$ vs $t$<br>(2) $\ln(1-M(t)/M_e)$ vs $t$                                                        | Yes                    | Yes                     |

|                                                                          |     |     |
|--------------------------------------------------------------------------|-----|-----|
| $q(t)$ vs $t$                                                            | No  | n/a |
| $q(t)$ vs $t$                                                            | No  | n/a |
| $wt\%(t)$ vs $t$                                                         | Yes | Yes |
| (1) $\ln(1-M(t)/Me)$ vs $t$<br>(2) $M(t)/Me$ vs $t$                      | Yes | Yes |
| $M(t)/Me$ vs $t^{1/2}$                                                   | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $q(t)$ vs $t^{1/2}$                             | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $\ln(1-M(t)/Me)$ vs $t$<br>(3) $M(t)/Me$ vs $t$ | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/Me$ vs $t^{1/2}$<br>(3) $M(t)/Me$ vs $t$  | Yes | Yes |
| $q(t)$ vs $t^{1/2}$                                                      | Yes | Yes |

|                                                       |     |     |
|-------------------------------------------------------|-----|-----|
| (1) $q(t)$ vs $t$<br>(2) $M(t)/Me$ vs $t$             | No  | n/a |
| $M(t)/Me$ vs $t^{1/2}$                                | No  | n/a |
| $q(t)$ vs $t$                                         | No  | n/a |
| (1) $q(t)$ vs $t$<br>(2) $-\ln(Me-M(t))/Me$ vs $t$    | Yes | Yes |
| $q(t)$ vs $t$                                         | No  | n/a |
| $M(t)/Me$ vs $t$                                      | Yes | Yes |
| (1) $M(t)/Me$ vs $t^{1/2}$<br>(2) $M(t)/Me$ vs $t$    | Yes | Yes |
| (1) $M(t)/Me$ vs $t^{1/2}$<br>(2) $M(t)/Me$ vs $t$    | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $\ln(q_e - q(t))/q_e$ vs $t$ | Yes | Yes |

|                                                              |     |     |
|--------------------------------------------------------------|-----|-----|
| (1) $M(t)/M_e$ vs $t^{1/2}$<br>(2) $(M_e - M(t))/M_e$ vs $t$ | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $\ln(1 - M(t)/M_e)$ vs $t$          | No  | n/a |
| $M(t)/M_e$ vs $t$                                            | Yes | Yes |
| (1) $M(t)/M_e$ vs $t$<br>(2) $\ln(1 - M(t)/M_e)$ vs $t$      | No  | n/a |
| (1) $q(t)$ vs $t$<br>(2) $\ln(q_e - q(t))/q_e$ vs $t$        | Yes | Yes |
| (1) $M(t)/M_e$ vs $t$<br>(2) $1 - M(t)/M_e$ vs $t$           | Yes | Yes |
| $M(t)/M_e$ vs $t$                                            | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/M_e$ vs $t$                   | Yes | Yes |
| $M(t)/M_e$ vs $t$                                            | Yes | Yes |

|                                                                           |     |            |
|---------------------------------------------------------------------------|-----|------------|
| (1) $q(t)$ vs $t$<br>(2) $q(t)/q_e$ vs $t^{1/2}$<br>(3) $M(t)/M_e$ vs $t$ | Yes | Yes        |
| (1) $q(t)$ vs $t$<br>(2) $1-M(t)/M_e$ vs $t$                              | Yes | No, Type 1 |
| $1-M(t)/M_e$ vs $t$                                                       | Yes | Yes        |
| $M(t)$ vs $t$                                                             | Yes | Yes        |
| $q(t)$ vs $t$                                                             | No  | n/a        |
| No                                                                        | No  | n/a        |
| $M(t)/M_e$ vs $t$                                                         | Yes | Yes        |
| $M(t)/M_e$ vs $t$                                                         | Yes | Yes        |
| $M(t)/M_e$ vs $t$                                                         | No  | n/a        |

|                                                  |     |     |
|--------------------------------------------------|-----|-----|
| (1) $q(t)$ vs $t$<br>(2) $q(t)/q_e$ vs $t^{1/2}$ | Yes | Yes |
| $M(t)/Me$ vs $t$                                 | Yes | Yes |
| $M(t)/Me$ vs $t$                                 | Yes | Yes |
| $M(t)/Me$ vs $t$                                 | Yes | Yes |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/Me$ vs $t^{1/2}$  | Yes | Yes |
| $M(t)/Me$ vs $t^{1/2}$                           | Yes | Yes |
| $M(t)/Me$ vs $t^{1/2}$                           | No  | n/a |
| (1) $q(t)$ vs $t$<br>(2) $\ln(1-M(t)/Me)$ vs $t$ | No  | n/a |
| $M(t)/Me$ vs $t$                                 | Yes | Yes |

|                                                                     |     |            |
|---------------------------------------------------------------------|-----|------------|
| $M(t)/Me$ vs $t$                                                    | Yes | Yes        |
| (1) $q(t)$ vs $t$<br>(2) $M(t)/Me$ vs $t$                           | Yes | Yes        |
| $M(t)/Me$ vs $t$                                                    | Yes | No, Type 1 |
| (1) $q(t)$ vs $t$<br>(2) $1-M(t)/Me$ vs $t$<br>(3) $M(t)/Me$ vs $t$ | Yes | Yes        |
| $M(t)/Me$ vs $t$                                                    | Yes | Yes        |
| No                                                                  | No  | n/a        |
| $M(t)/Me$ vs $t$                                                    | Yes | Yes        |
| (1) $\ln(1-M(t)/Me)$ vs $t$<br>(2) $M(t)/Me$ vs $t$                 | Yes | Yes        |
| (1) $\ln(1-M(t)/Me)$ vs $t$<br>(2) $M(t)/Me$ vs $t$                 | Yes | Yes        |

|                  |     |     |
|------------------|-----|-----|
| $q(t)$ vs $t$    | Yes | Yes |
| $M(t)/Me$ vs $t$ | Yes | Yes |

| Authors                                                                                                                                     | Institution of first author             |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Wang, Gang<br>Li, Na<br>Xing, Xin<br>Sun, Yonggang<br>Zhang, Zhongshen<br><del>Hao, Zhengning</del>                                         | Beijing Institute of Fashion Technology |
| Rupa, Mahua Jahan<br>Pal, Animesh<br>Saha, Bidyut Baran                                                                                     | Kyushu University                       |
| Pajdak, Anna<br>Skoczylas, Norbert<br>Szymanek, Arkadiusz<br>Lutyński, Marcin<br>Sakiewicz, Piotr                                           | Polish Academy of Sciences              |
| Shirani, B.<br>Han, Xue<br>Eic, Mladen                                                                                                      | University of New Brunswick             |
| Mohamedali, Mohanned<br>Ibrahim, Hussameldin<br>Henni, Amr                                                                                  | University of Regina                    |
| Wijiyanti, Rika<br>Gunawan, Triyanda<br>Nasri, Noor Shawal<br>Karim, Zulhairun Abdul<br>Ismail, Ahmad Fauzi<br><del>Widiastuti, Nurul</del> | Institut Teknologi Sepuluh Nopember     |
| Gomez-Delgado, Edward<br>Nunell, Gisel<br>Cukierman, Ana Lea<br>Bonelli, Pablo                                                              | Universidad de Buenos Aires             |

|                                                                                                                           |                                                                   |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Ding, Qi<br>Zhang, Zhaoqiang<br>Yu, Cong<br>Zhang, Peixin<br>Wang, Jun<br>Cui, Xili                                       | Zhejiang University                                               |
| wang, Xiaobing<br>Zhang, Peixin<br>Zhang, Zhaoqiang<br>Yang, Lifeng<br>Ding, Qi<br>Cui, Xili                              | Zhejiang University                                               |
| vorokhta, Maryna<br>Morávková, Jaroslava<br>Římnáčová, Daniela<br>Pilař, Radim<br>Zhigunov, Alexander<br>Švábová, Martina | Czech Academy of Sciences                                         |
| Gao, Mingbin<br>Li, Hua<br>Yang, Miao<br>Gao, Shushu<br>Wu, Pengfei<br>Tian, Peng                                         | Dalian Institute of Chemical Physics, Chinese Academy of Sciences |
| Mohamedali, Mohammed<br>Henni, Amr<br>Ibrahim, Hussameldin                                                                | University of Regina                                              |
| Park, Yongha<br>Moon, Dong Kyu<br>Park, Dooyong<br>Mofarahi, Masoud<br>Lee, Chang Ha                                      | Yonsei University                                                 |
| Xiao, Yonghou<br>He, Gaohong<br>Yuan, Mingpu                                                                              | Dalian University of Technology                                   |
| Duan, Shuo<br>Li, Guodong                                                                                                 | Hebei University of Engineering                                   |
| Li, Yaling<br>Zhang, Tao<br>Tang, Shengwei                                                                                | Sichuan University                                                |

|                                                                                                                                          |                                               |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Abdul Kareem, Firas A.<br>Shariff, A.M.<br>Ullah, Sami<br>Mellon, Nurhayati<br>Keong, L.K.                                               | Universiti Teknologi<br>PETRONAS (UTP)        |
| Abdul Kareem, Firas A.<br>Shariff, A.M.<br>Ullah, Sami<br>Dreisbach, Frieder<br>Keong, L.K.<br><del>Mellon, Nurhayati</del>              | Universiti Teknologi<br>PETRONAS (UTP)        |
| <del>Jrbi, Skander</del><br>Miyazaki, Takahiko<br>Saha, Bidyut Baran<br>Pal, Animesh<br>Younes, Mohamed M.<br><del>Kovama, Shigeru</del> | Kyushu University                             |
| Kudasik, Mateusz<br>Skoczylas, Norbert<br>Pajdak, Anna                                                                                   | Polish Academy of<br>Sciences                 |
| Landaverde-Alvarado, Carlos<br>Morris, Amanda J.<br>Martin, Stephen M.                                                                   | Virginia Tech                                 |
| <del>Cnen, Chong</del><br>Li, Bingxue<br>Zhou, Lijin<br>Xia, Zefeng<br>Feng, Nengjie<br><del>Ding, Ling</del>                            | Nanjing Tech University                       |
| Wei Benjamin Teo, How<br>Chakraborty, Anutosh<br>Fan, Wu                                                                                 | Nanyang Technological<br>University           |
| Çağlayan, Burcu Selen<br>Aksoylu, Ahmet Erhan                                                                                            | Boğaziçi University                           |
| Zhao, Xuebo<br>Bell, Jon G.<br>Tang, Si Fu<br>Li, Liangjun<br>Thomas, K. Mark                                                            | China University of<br>Petroleum (East China) |

|                                                                                                                                    |                                                    |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Gong, Jie<br>Wang, Chongqing<br>Zeng, Changfeng<br>Zhang, Lixiong                                                                  | Nanjing Tech University                            |
| Karousos, Dionysios S.<br>Sapalidis, Andreas A.<br>Kouvelos, Evangelos P.<br>Romanos, George Em<br>Kanellopoulos, Nickolaos K.     | National Centre for<br>Scientific Research, Greece |
| Shirani, Babak<br>Eic, Mladen                                                                                                      | University of New<br>Brunswick                     |
| Song, Gan<br>Zhu, Xun<br>Chen, Rong<br>Liao, Qiang<br>Ding, Yu-Dong<br><del>Chen, Lin</del>                                        | Chongqing University                               |
| Tan, Xiaoli<br>Vagi, Lisa<br>Liu, Qi<br>Choi, Phillip<br>Gray, Murray R.<br><del>Yu, wenbin</del>                                  | University of Alberta                              |
| Deng, Liangliang<br>Yuan, Peng<br>Liu, Dong<br>Yuan, Weiwei<br><del>Chen, Fanrong</del>                                            | Chinese Academy of<br>Sciences                     |
| <del>Wang, Gang</del><br>Dou, Baojuan<br>Zhang, Zhongshen<br>Wang, Junhui<br>Liu, Haier<br><del>Hao, Zhengning</del>               | Chinese Academy of<br>Sciences                     |
| <del>Song, Yongchen</del><br>Xing, Wanli<br>Zhang, Yi<br>Jian, Weiwei<br>Liu, Zhaoyan<br><del>Liu, Shuyang</del>                   | Dalian University of<br>Technology                 |
| El-Sharkawy, Ibrahim I.<br>Uddin, Kutub<br>Miyazaki, Takahiko<br>Baran Saha, Bidyut<br>Koyama, Shigeru<br><del>Kil, Hyun-Sig</del> | Kyushu University                                  |

|                                                                                                                                             |                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Saha, Bidyut Baran<br>El-Sharkawy, Ibrahim I.<br>Miyazaki, Takahiko<br>Koyama, Shigeru<br>Henninger, Stefan K.<br><del>Herbst, Annika</del> | Kyushu University                                      |
| Yan, T.<br>Li, T.X.<br>Wang, R.Z.<br>Jia, R.                                                                                                | Shanghai Jiao Tong<br>University                       |
| Zhu, Jiamei<br>Xin, Feng<br>Huang, Junhua<br>Dong, Xiaochen<br>Liu, Hanming                                                                 | China University of Mining<br>& Technology             |
| Li, Liangjun<br>Bell, Jon G<br>Tang, Sifu<br>Lv, Xiaoxia<br>Wang, Chao<br><del>Xing, Yanlong</del>                                          | China University of<br>Petroleum (East China)          |
| Yang, Ying<br>Ribeiro, Ana M.<br>Li, Ping<br>Yu, Jian-Guo<br>Rodrigues, Alirio E.                                                           | East China University of<br>Science and Technology     |
| Loganathan, Sravanthi<br>Tikmani, Mayur<br>Edubilli, Satyannarayana<br>Mishra, Aakanksha<br>Ghoshal, Alope Kumar                            | Indian Institute of<br>Technology Guwahati             |
| El-Sharkawy, Ibrahim I.<br>Uddin, Kutub<br>Miyazaki, Takahiko<br>Saha, Bidyut Baran<br>Koyama, Shigeru<br><del>Miyawaki, Jin</del>          | Kyushu University                                      |
| Li, Pengwei<br>Chen, Jihong<br>Feng, Weisheng<br>Wang, Xianling                                                                             | Henan University of<br>Traditional Chinese<br>Medicine |
| Rashidi, Nor Adilla<br>Yusup, Suzana<br>Borhan, Azry<br>Loong, Lam Hon                                                                      | Universiti Teknologi<br>PETRONAS                       |

|                                                                                            |                                                      |
|--------------------------------------------------------------------------------------------|------------------------------------------------------|
| Wierzbicki, Mirosław                                                                       | Instytut Mechaniki<br>Górotworu PAN                  |
| Duan, Linhai<br>Dong, Xianying<br>Wu, Yuye<br>Li, Huailei<br>Wang, Li<br>Song, Liliuan     | Liaoning Shihua University                           |
| Ojuva, Arto<br>Akhtar, Farid<br>Tomsia, Antoni P.<br>Bergström, Lennart                    | Stockholm University                                 |
| Sarmah, Mridusmita<br>Baruah, Bimala P.<br>Khare, Puja                                     | CSIR-North East Institute<br>of Science & Technology |
| Donald Carruthers, J.<br>Petruska, Melissa A.<br>Sturm, Edward A.<br>Wilson, Shaun M.      | ATMI                                                 |
| Dou, Baojuan<br>Li, Jinjun<br>Wang, Yufei<br>Wang, Hailin<br>Ma, Chunyan<br>Hao, Zhengning | Chinese Academy of<br>Sciences                       |
| Zhao, Zhenxia<br>Li, Xuemei<br>Li, Zhong                                                   | South China University of<br>Technology              |
| Zhao, Zhenxia<br>Xia, Qibin<br>Li, Zhong                                                   | South China University of<br>Technology              |
| Zhang, Zhijuan<br>Huang, Sisi<br>Xian, Shikai<br>Xi, Hongxia<br>Li, Zhong                  | South China University of<br>Technology              |

|                                                                                                                |                                             |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Charrière, Delphine<br>Pokryszka, Zbigniew<br>Behra, Philippe                                                  | INERIS                                      |
| Bhat, Vinay V.<br>Contescu, Cristian I.<br>Gallego, Nidia C.<br>Baker, Frederick S.                            | Oak Ridge National<br>Laboratory, USA       |
| Campo, M.C.<br>Magalhães, F.D.<br>Mendes, A.                                                                   | Universidade do Porto                       |
| Gueudré, Laurent<br>Jolimaître, Elsa<br>Bats, Nicolas<br>Dong, Weï                                             | IFP-Lyon                                    |
| Zhang, Zhijuan<br>Zhang, Wei<br>Chen, Xiao<br>Xia, Qibin<br>Li, Zhong                                          | South China University of<br>Technology     |
| Möller, Andreas<br>Pessoa Guimaraes, A.<br>Gläser, Roger<br>Staudt, Reiner                                     | Institut für Nichtklassische<br>Chemie e.V. |
| Yang, Sihai<br>Lin, Xiang<br>Blake, Alexander J.<br>Walker, Gavin S.<br>Hubberstey, Peter<br>Chamness, Neil R. | University of Nottingham                    |
| Belmabkhout, Youssef<br>Sayari, Abdelhamid                                                                     | University of Ottawa                        |
| Belmabkhout, Youssef<br>Serna-Guerrero, Rodrigo<br>Sayari, Abdelhamid                                          | University of Ottawa                        |

|                                                                                                                       |                                                                         |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <p>Zhao, Zhenxia<br/>Li, Zhong<br/>Lin, Y S</p>                                                                       | <p>Arizona State University</p>                                         |
| <p>Çakıcığlu-Ozkan, F.<br/>Ülkü, S.</p>                                                                               | <p>Izmir Institute of<br/>Technology</p>                                |
| <p>Dadwhal, Megha<br/>Kim, Tae Wook<br/>Sahimi, Muhammad<br/>Tsotsis, Theodore T</p>                                  | <p>University of Southern<br/>California</p>                            |
| <p>Kim, Pyoungchung<br/>Zheng, Yijing<br/>Agnihotri, Sandeep</p>                                                      | <p>University of Tennessee</p>                                          |
| <p>Palomino, Miguel<br/>Cantín, Angel<br/>Corma, Avelino<br/>Leiva, Sandra<br/>Rey, Fernando<br/>Valencia, Susana</p> | <p>Instituto de Tecnología<br/>Química (UPV – CSIC)</p>                 |
| <p>Duan, L.-H.<br/>Sun, Z.-L.<br/>Liu, D.-S.<br/>Dai, Z.-H.<br/>Li, X.-Q.<br/>Song, L.-L.</p>                         | <p>Liaoning University of<br/>Petroleum and Chemical<br/>Technology</p> |
| <p>Fletcher, Ashleigh J<br/>Uygur, Yaprak<br/>Thomas, K Mark</p>                                                      | <p>University of Newcastle<br/>upon Tyne</p>                            |
| <p>Chen, Banglin<br/>Zhao, Xuebo<br/>Putkham, Apipong<br/>Hong, Kunlun<br/>Lobkovsky, Emil B<br/>Hurtado, Eric J</p>  | <p>University of Newcastle<br/>upon Tyne</p>                            |
| <p>Li, Yingwei<br/>Yang, Ralph T</p>                                                                                  | <p>University of Michigan</p>                                           |

|                                                                                                                     |                                      |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Aristov, Yu.I.<br>Glaznev, I.S.<br>Freni, A.<br>Restuccia, G.                                                       | Boreskov Institute of<br>Catalysis   |
| Zhao, Xuebo<br>Villar-Rodil, Silvia<br>Fletcher, Ashleigh J<br>Thomas, K Mark                                       | University of Newcastle<br>upon Tyne |
| Fletcher, Ashleigh J.<br>Yüzak, Yaprak<br>Thomas, K. Mark                                                           | University of Newcastle<br>upon Tyne |
| Grande, Carlos A.<br>Cavenati, Simone<br>Barcia, Patrick<br>Hammer, Jochen<br>Fritz, Hans G.<br>Rodrigues, Alírio E | University of Porto                  |
| El-Sharkawy, Ibrahim I.<br>Saha, Bidyut B.<br>Koyama, Shigeru<br>Ng, Kim Choon                                      | Kyushu University                    |
| Duan, Linhai<br>Zhang, Xiaotong<br>Tang, Ke<br>Song, Lijuan<br>Sun, Zhaolin                                         | Lanzhou University                   |
| Ban, Hongyan<br>Gui, Jianzhou<br>Zhang, Xiaotong<br>Dai, Min<br>Song, Lijuan<br>Sun, Zhaolin                        | Lanzhou University                   |
| Villar-Rodil, S.<br>Navarrete, R.<br>Denoyel, R.<br>Albiniak, A.<br>Paredes, J.I.<br>Martínez-Alonso, A             | National Coal Institute, Spair       |
| Cavenati, Simone<br>Grande, Carlos A<br>Rodrigues, Alírio E                                                         | University of Porto                  |

|                                                                                                                                                |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Cavenati, Simone<br>Grande, Carlos<br>Rodrigues, Alírio                                                                                        | University of Porto                       |
| Alsyouri, Hatem M<br>Lin, Jerry Y S                                                                                                            | University of Cincinnati                  |
| Lee, Jae Wook<br>Shim, Wang Geun<br>Moon, Hee                                                                                                  | Seonam University                         |
| Ahn, Hyungwoong<br>Moon, Jong-Ho<br>Hyun, Sang-Hoon<br>Lee, Chang-Ha                                                                           | Yonsei University                         |
| Berenguer-Murcia, Angel<br>Fletcher, Ashleigh J<br>García-Martínez, Javier<br>Cazorla-Amorós, Diego<br>Linares-Solano, Ángel<br>Thomas, K Mark | University of Newcastle<br>upon Tyne      |
| Yoo, Kyesang<br>Tsekov, Roumen<br>Smirniotis, Panagiotis G                                                                                     | University of Cincinnati                  |
| Choudary, Nettem V<br>Kumar, Prakash<br>Bhat, S. G.Thirumaleshwara<br>Cho, Soon H<br>Han, Sang S<br>Kim, Jong N                                | Indian Petrochemicals<br>Corporation Ltd. |
| Reid, C R<br>Thomas, K M                                                                                                                       | University of Newcastle<br>upon Tyne      |
| Fletcher, Ashleigh J<br>Cussen, Edmund J<br>Prior, Timothy J<br>Rosseinsky, Matthew J<br>Kepert, Cameron J<br>Thomas, K Mark                   | University of Newcastle<br>upon Tyne      |

|                                                                                                                                     |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Ryu, Young Ki<br>Lee, Seung Ju<br>Kim, Jong Wha<br>Lee, Chang Ha                                                                    | Procter & Gamble                 |
| Cavalcante, Celio L.<br>Azevêdo, Diana C.S.<br>Souza, Irla G.<br>Silva, A. Cristina M.<br>Alsina, Odelsia L.S.<br>Lima, Verônica F. | Universidade Federal do<br>Ceará |