

Patent Selections

The patents annotated in this section have been selected from various patent collections. They are recent patents categorized by different analytical methods, design, manufacturing, analysis and design of automobiles, aircraft, manufacturing plants, industrial instruments, machines, heating and cooling systems processes involved and related to mechanical engineering and are relevant to the articles published in this journal issue.

ABSORPTION COOLING SYSTEMS

1. Haney, J.S., Chen, C.-Y. Strakes for reducing vortex induced vibrations. *GB2436012 (2007)*.
2. Reinaas, L. Vibration reducer for reducing flow induced vibrations in a pipe and method of reducing such vibrations. *WO07108693 (2007)*.
3. Williams, J.G. Dynamic performance monitoring of long slender structures using optical fiber strain sensors. *US20077277162 (2007)*.
4. Van Zandwijk, C., Berends, C.H., Van Egmond, J. Method and device for providing a protrusion on a pipeline. *WO07027087 (2007)*.
5. Allen, D.W., Lee, L., McMullen, C.D. Stress and/or tension monitoring systems and methods. *WO07059026 (2007)*.
6. Mohr, H.O. Hull-to-caisson interface connection assembly for spar platform. *WO07101037 (2007)*.
7. Wolbers, D.R., Coppens, T. Pipeline assembly comprising an anchoring device. *WO07043862 (2007)*.
8. Roscoe, P. Generic tow lead-in for streamers. *WO07021192 (2007)*.
9. Allen, J.J. Bluff body energy converter. *US20077224077 (2007)*.
10. Smyth, H., Truman, C.R. Dry powder inhaler with aeroelastic dispersion mechanism. *WO07103152 (2007)*.

THREE DIMENSIONAL FRAME STRUCTURES

1. Weber, H.-J., Endres, G.C. Method for manufacturing a three dimensional frame structure for use as a core structure in a sandwich construction and frame structure manufactured thereby. *WO07096172 (2007)*.
2. Rubbert, R., Weise, T., Sporbert, P., Imgrund, H., Kouzian, D. Methods for registration of three-dimensional frames to create three-dimensional virtual models of objects. *US20077197179 (2007)*.
3. Ying, J.Y., Kan, S.-H., Loh, J.M.H., Schumacher, K., Hsieh, J.T.-M. Three-dimensional fabrication of biocompatible structures in anatomical shapes and dimensions for tissue engineering and organ replacement. *WO07106497 (2007)*.
4. Zhao, W., Nister, D., Hsu, S.C. Method and apparatus for aligning video to three-dimensional point clouds. *US20077187809 (2007)*.
5. Maki, A., Kamiya, R. Three-dimensional fiber structure and method for manufacturing three-dimensional fiber structure. *EP1842656 (2007)*.
6. McDonnell, P.A., Constantine, K.L., Klei, H.E., Johnson, S.R., Goldfarb, V., Kish, K., Kim, S.-H. Three-dimensional

structure of HDHD4 complexed with magnesium and a phosphate mimetic. *WO07112377 (2007)*.

7. Scipioni, L. Fabrication of three dimensional structures. *7160475 (2007)*.
8. Timothy, P., Manohar, B.S. Computer input device enabling three degrees of freedom and related input and feedback methods. *EP1804154 (2007)*.
9. Mathieu, G.L., Fang, T., Hobbs, E.D. Three dimensional microstructures and methods for making three dimensional microstructures. *WO07075998 (2007)*.
10. Itai, A. Method of inferring three-dimensional structure of protein. *US20077212924 (2007)*.
11. Wagner, P. One-piece photograph display assembly and methods of use. *WO07095179 (2007)*.

WALL SHEAR STRESS SENSOR TECHNOLOGIES

1. Slepian, M.J. Sensing, interrogating, storing, telemetering and responding medical implants. *EP1847217 (2007)*.
2. Chen, T.H. Color moire interferometry. *US20077268860 (2007)*.
3. May, L. Angle sensor device. *EP1744136 (2007)*.
4. Chimenti, R.J., Perry, B.N. Fiber optic, strain-tuned, material alteration sensor. *WO07015839 (2007)*.
5. Discenzo, F.M. Fluid sensor fixture for dynamic fluid testing. *US20077275420 (2007)*.
6. Shuler, M., Baxter, G.T., Sin, A., Meyers, S., Harrison, R.A. Cell culture system. *EP1820846 (2007)*.
7. Georgeson, G.E., Fogarty, M.D. Angle beam shear wave through-transmission ultrasonic testing apparatus and method. *US20077240556 (2007)*.
8. Uber, A.E., Hirschman, A.D., Facher, E., Gelblum, E.A., Griffiths, D.M., Rhinehart, E.J., Reilly, D.M., Cowan, K.P., Cedarholm, P., Tucker, B.L., Trocki Mark, M.D., Bartony, H.E. Jr., Parks, R. Delivery of agents such as cells to tissue. *WO07056247 (2007)*.
9. Willms, P.H., Stanley, J.H. Active threat detection and elimination while in transit. *US20077180418 (2007)*.
10. May, L. Angle sensor device. *WO07006555 (2007)*.
11. Warthoe, P., Soerensen, I. Surface acoustic wave sensor comprising a hydrogel. *EP1804059 (2007)*.
12. Kunsch, C., Varner, S.E., Chen, X., Luchoomun, J. Protection against oxidative stress and inflammation by a cytoprotective response element. *US20077247714 (2007)*.

LAMINATED PLATE THEORIES

1. Lue, B.C. Scalable uniform thermal plate. *WO07005196 (2007)*.

2. Burgueno, R., Mohanty, A.K., Quagliata, M.J. Hybrid natural-fiber composites with cellular skeletal structures. *US20077232605 (2007)*.
3. Yagi, T., Seto, S. Piezoelectric device, liquid droplet discharging head using the device, and liquid droplet discharging apparatus using the head. *US20077273268 (2007)*.
4. Tavakoli, M.K. Gravitational and energy system. *EP1770717 (2007)*.
5. Hill, G.R. Structural assembly with a tied, *WO07109541 (2007)*; *WO07052156 (2007)*.
6. Yoon, K.-J., Wu, W.-H. Differential immunoassay for prrs vaccine antibody. *WO07065151 (2007)*.
7. Cooper, G.J.S., Phillips, A.R.J., Chen, N.X., Gong, D., Jullig, M., Hickey, A.J.R., Glynn-Jones, S. Treatment of mitochondria-related diseases and improvement of age-related metabolic deficits. *WO07055598 (2007)*.
8. Kleinsek, D.A., Soto, A. Methods and compositions for organ and tissue functionality. *WO07035843 (2007)*.
9. Mahley, R.W., Weisgraber, K.H., Huang, Y. APOE4 domain interaction inhibitors and methods of use thereof. *WO07044325 (2007)*.
4. Clavenna, L.R., Wolf, H.A., Yeganeh, M.S., Hay, C., Ramanarayanan, T.A. Corrosion resistant material for reduced fouling, heat transfer component with improved corrosion and fouling resistance, and method for reducing fouling. *WO07075634 (2007)*.
5. Gandy, J. Method of manufacturing stainless steel pipe for use in piping systems. *US20077157672 (2007)*.
5. Bangaru, N.-R.V., Koo, J., Vaughn, G.A., Ayer, R., Fairchild, D.P., Ford, S.J., Thirumalai, N.S., Rigby, J.R., Biegler, M.W. Application of high integrity welding and repair of metal components in oil and gas exploration, production and refining. *WO07089649 (2007)*.
6. Woodruff, T.E., Wonders, A.G. Oxidation system with sidedraw secondary reactor. *WO07106289 (2007)*.
7. Lin, R., O'meadhra, R.S., Wonders, A.G., Pell, T.M.Jr. Polycarboxylic acid production system with enhanced residence time distribution for oxidative digestion. *WO07106287 (2007)*.
8. Wonders, A.G., Sheppard, R.B., De Boer, M., Fogle, R.E., De Vreede, M. Polycarboxylic acid production system employing oxidative digestion with reduced or eliminated upstream liquor exchange. *WO07103046 (2007)*.
9. Wonders, A.G., Sheppard, R.B., De Boer, M. Polycarboxylic acid production system employing hot liquor removal downstream of oxidative digestion. *WO07103028 (2007)*.
10. Wonders, A.G., Woodruff, T.E., Sheppard, R.B., Strasser, W.S. Oxidation system with internal secondary reactor. *WO07081507 (2007)*.

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2. Seiz, B., Baumann, M., Herre, F., Nolte, H.-J., Marquardt, P. Component of a rotary atomizer. *EP1764157 (2007)*.
3. Fukuoka, M., Takahashi, M., Nakagami, PP. Electrostatic atomizer and electrostatic atomizing method. *JP07175576 (2007)*.
4. Imahori, O., Hirai, T., Sugawa, A., Akisada, S., Yamauchi, T., Iwamoto, N., Suda, H., Nakada, T. Electrostatic atomizer. *JP07181835 (2007)*, *JP07181836 (2007)*, *JP07181838 (2007)*.
5. Dudill, R., Millington, D. Emulsion atomizer nozzle, burner and method for oxy-fuel burner applications. *EP1691134 (2007)*.
6. Yoshioka, K., Kobayashi, K., Watanabe, T. Electrostatic atomizer. *JP07144425 (2007)*.
7. Yamaki, Y. Liquid Atomizer. *JP2007130514 (2007)*.
8. Fujimaki, K., Katahira, J., Izumitani, Y. Atomizer for essential oil. *JP07111394 (2007)*.

DUPLEX STAINLESS STEELS

1. Park, Y.-S., Kim, S.-T., Lee, I.-S. High-grade duplex stainless steel with much suppressed formation of intermetallic phases and having an excellent corrosion resistance, embrittlement resistance, castability and hot workability. *EP1803832 (2007)*.
2. Vosough, S., Soederman, A. String for musical instrument. *WO07058611 (2007)*.
3. Greaney, M.A., Bruno, T., Chun, C., Cody, I.A., Song, L., Colgrove, S., Brons, G.B., Cooper, A.E., Feather, J.E.,

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2. Okada, T., Fujita, Y., Shimamura, M., Osakabe, N., Honma, R. Water cooling and heating system. *JP07183025 (2007)*.
3. Reader, J., Brooks, N., Jones, A., Holmes, M. Adsorption cooling system and cooling method. *EP1788324 (2007)*.
4. North, S.A. Internal combustion engine intercooler utilising absorption cooling. *GB2432205 (2007)*.
5. Gurin, M.H. High efficiency absorption heat pump and methods of use. *WO07082103 (2007)*.
6. Pogadaev, V. Air conditioning system with an absorption compressor. *WO07110854 (2007)*.
7. Zhang, W., Jones, M.G., Graham, M.E. Laser thermal forming systems with active cooling. *EP1777030 (2007)*.
8. Weber, R.M., Rummel, K.A., Payton, A.P., Wyatt, W.G. System and method for electronic chassis and rack mounted electronics with an integrated subambient cooling system. *EP1796447 (2007)*.
9. Ippoushi, S., Yamada, A., Tanaka, T., Murahashi, A., Toya, K., Okayama, H. Heat sink and cooling unit using same. *EP1837909 (2007)*.
10. An Yong, D. Projection system and cooling system of the same. *EP1750455 (2007)*.

SUPERELASTIC SHAPE MEMORY ALLOY

1. Faulkner, D.G., Kellar, F. Resilient thin film treatment of superelastic and shape memory metal components. **WO07051166 (2007)**.
2. Rosenbuam, D.G., Desatnik, N. Methods of making shape memory films by chemical vapor deposition and shape memory devices made thereby. **WO07033282 (2007)**.
3. Shaw, J.A., Grummon, D.S. Manufacture of shape-memory alloy cellular materials and structures by transient-liquid reactive joining. **WO07001392 (2007)**.
4. Vasquez, F.B. Longitudinally expanding, rotating & contracting shaped memory superelastic stent. **WO07094859 (2007)**.
5. Schuessler, K. Damping apparatus, use of a shape memory alloy and method for changing damping characteristics. **WO07039271 (2007)**.
6. Destefano, M. Flexible metallic cannula infusion set. **EP1776979 (2007)**.
7. Schneider, T.L. Polymer composite structure reinforced with shape memory alloy and method of manufacturing same. **WO07015709 (2007)**.
8. Auger, P., Lindner, T., Hudson, P.A. Article of footwear having a sole with a flex control member. **US20077181868 (2007)**.
9. Destefano, M. Flexible metallic cannula infusion set. **JP2007111536 (2007)**.
10. Park, B.-H., Liang, D. Tubular compliant shape memory alloy actuators. **WO07009093 (2007)**.

ACTIVE COATINGS

1. De Nora, V., Nguyen, T.T. Non-carbon anodes with active coatings. **EP1797223 (2007)**.
2. Maertens, C.J., Luo, S. Processes for producing oriented polymeric films provided with UV-active coatings. **WO07021366 (2007)**.
3. Kloke, T.M., Hergenrother, B., Lawin, L.R. Devices, articles, coatings, and methods for controlled active agent release or hemocompatibility. **WO07016405 (2007)**.
4. Becker, N.T., Clarkson, K.A., Dale, D., Fryksdale, B., Gerbert, M.S., Partsuf, M., Gravesen, T. Stable, durable granules with active agents. **WO07044968 (2007)**.

5. Allers, L. Antibacterial surface coatings. **GB2430202 (2007)**.
6. Wolter, J.T., Simons, J.K., Johnson, P.R. Coatable compositions, coatings derived therefrom and microarrays having such coatings. **WO07061781 (2007)**.
7. Madhava, M., Duffy, T.R., Floyd, M., Reimer, G. Chromium and active elements modified platinum aluminide coatings. **US20077229701 (2007)**.
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10. Burgman, J.W., Coca, S., Coleridge, E.R., Lim, H.R., Morow, K.A., Valenta, V.N. Surface active additives for coatings. **WO07008635 (2007)**.

FLUID-STRUCTURE INTERACTION

1. Toda, A., Hirata, T. Method of coupled numerical simulation of fluid-structure, and storage device program for coupled numerical simulation of fluid-structure. **JP07122269 (2007)**.
2. Hamamoto, M., Ohta, Y., Hara, K. Rising and moving apparatus and manufacturing method thereof. **US20077219855 (2007)**.
3. Smyth, H., Truman, C.R. Dry powder inhaler with aeroelastic dispersion mechanism. **WO07103152 (2007)**.
4. Stone, H.A., Abkarian, M., Faivre, M., Smistrup, K. Pressure determination in microfluidic systems. **WO07014336 (2007)**.
5. Haeberle, S., Ducree, J., Zengerle, R., Schmitt, N. Microfluidic fluid handling apparatus. **GB2434417 (2007)**.
6. Scher, I.S., Varadi, P. Small piezoelectric air pumps with unobstructed airflow. **US20077282837 (2007)**.
7. Bennighof, J.K. Damped frequency response apparatus, systems, and methods. **US20077188039 (2007)**.
8. Wasan, D.T., Nikolov, A.D., McDonald, M.R., Hecht, S.E. Nano-fluids as cleaning compositions for cleaning soiled surfaces, a method for formulation and use. **WO07109327 (2007)**.