

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT & BMW
OF NORTH AMERICA, LLC,**
Petitioners

v.

PAICE LLC & THE ABELL FOUNDATION, INC.
Patent Owners

Inter Partes Review No.: IPR2020-00994

U.S. Patent No. 7,104,347 K2

**PETITIONERS' RESPONSE IDENTIFYING ISSUES RAISED IN THE
PATENT OWNER RESPONSE OR THE INSTITUTION DECISION TO
WHICH THE EVIDENCE AND/OR ARGUMENTS IDENTIFIED BY
PATENT OWNERS RESPONDS**

LIST OF EXHIBITS

Exhibit No.	Description of Exhibit
BMW1001	U.S. Patent No. 7,104,347, including <i>Inter Partes</i> Review Certificates issued as U.S. Patent No. 7,104,347 K1 and U.S. Patent No. 7,104,347 K2
BMW1002	USPTO Assignments on the Web for U.S. Patent No. 7,104,347 K2
BMW1003	<i>Ford Motor Co. v. Paice LLC</i> , IPR2014-00571, Paper 44, Final Written Decision (P.T.A.B. Sep. 28, 2015)
BMW1004	<i>Ford Motor Co. v. Paice LLC</i> , IPR2014-00579, Paper 45, Final Written Decision (P.T.A.B. Sep. 28, 2015)
BMW1005	<i>Paice LLC v. Ford Motor Co.</i> , Appeal Nos. 2016-1412, -1415, -1745, Doc. 46-2, Opinion (Fed. Cir. Mar. 7, 2017)
BMW1006	<i>Ford Motor Co. v. Paice LLC</i> , IPR2015-00794, Paper 31, Final Written Decision (P.T.A.B. Nov. 1, 2016)
BMW1007	<i>Paice LLC v. Ford Motor Co.</i> , Appeal Nos. 2017-1442, -1443, -1472, Doc. 59-2, Opinion (Fed. Cir. Feb. 1, 2018)
BMW1008	Declaration of Dr. Gregory W. Davis in Support of <i>Inter Partes</i> Review of U.S. Patent No. 7,104,347 K2
BMW1009	<i>Curriculum Vitae</i> of Dr. Gregory W. Davis
BMW1010	<i>Ford Motor Co. v. Paice LLC</i> , IPR2014-00795, Paper 31, Final Written Decision (P.T.A.B. Nov. 1, 2016)
BMW1011	<i>Ford Motor Co. v. Paice LLC</i> , IPR2014-00884, Paper 38, Final Written Decision (P.T.A.B. Dec. 10, 2015)
BMW1012	File History for U.S. Patent No. 7,104,347 K2
BMW1013	U.S. Patent No. 5,343,970 (“Severinsky” or “Severinsky ’970”)
BMW1014	Bumby, J.R. et al., “Computer modelling of the automotive energy requirements for internal combustion engine and battery electric-powered vehicles,” <i>IEEE PROCEEDINGS</i> , Vol. 132, Pt. A, No. 5

Exhibit No.	Description of Exhibit
	(Sep. 1985), 265-79 ("Bumby-I" or "Bumby I")
BMW1015	Bumby, J.R. et al., "Optimisation and control of a hybrid electric car," <i>IEEE PROCEEDINGS</i> , Vol. 134, Pt. D, No. 6 (Nov. 1987), 373-87 ("Bumby-II" or "Bumby II")
BMW1016	Bumby, J.R. et al., "A hybrid internal combustion engine/battery electric passenger car for petroleum displacement," <i>Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering</i> , Vol. 202, No. D1 (Jan. 1988), 51-65 ("Bumby-III" or "Bumby III")
BMW1017	Bumby, J.R. et al., "A test-bed facility for hybrid i c-engine/battery-electric road vehicle drive trains," <i>Transactions of the Institute of Measurement and Control</i> , Vol. 10, No. 2 (Apr.-June 1988), 87-97 ("Bumby-IV" or "Bumby IV")
BMW1018	Bumby, J.R. et al., "Integrated microprocessor control of a hybrid i.c. engine/battery-electric automotive power train," <i>Transactions of the Institute of Measurement and Control</i> , Vol. 12, No. 3 (Jan. 1990), 128-46 ("Bumby-V" or "Bumby V")
BMW1019	U.S. Patent No. 5,586,613 ("Ehsani")
BMW1020	U.S. Patent No. 6,188,945 ("Graf")
BMW1021	International Application Publication No. WO 92/15778 ("Ma")
BMW1022	U.S. Patent No. 5,650,931 ("Nii")
BMW1023	<i>Innovations in Design: 1993 Ford Hybrid Electric Vehicle Challenge</i> , Society of Automotive Engineers, SAE/SP-94/980, Davis, G.W. et al., "United States Naval Academy, AMPhibian" (Feb. 1994), 277-87
BMW1024	<i>1996 Future Car Challenge</i> , Society of Automotive Engineers, SAE/SP-97/1234, Swan, J. et al., "Design and Development of Hyades, a Parallel Hybrid Vehicle for the 1996 FutureCar Challenge" (Feb. 1997), 23-30
BMW1025	<i>1997 Future Car Challenge</i> , Society of Automotive Engineers,

Exhibit No.	Description of Exhibit
	SAE/SP-98/1359, Swan, J. et al., "Design and Development of Hyades, a Parallel Hybrid Electric Vehicle for the 1997 FutureCar Challenge" (Feb. 1998), 29-39
BMW1026	U.S. Provisional Appl. No. 60/100,095 (Filed Sep. 11, 1998)
BMW1027	Wakefield, E.H., Ph.D., <i>History of the Electric Automobile – Hybrid Electric Vehicles</i> , Society of Automotive Engineers, SAE/SP-98/3420 (1998), 17-34 (Chapter 2: The History of the Petro-Electric Vehicle)
BMW1028	Unnewehr, L.E. et al., "Hybrid Vehicle for Fuel Economy," Society of Automotive Engineers, SAE/SP-76/0121 (1976)
BMW1029	Burke, A.F., "Hybrid/Electric Vehicle Design Options and Evaluations," Society of Automotive Engineers, SAE/SP-92/0447, International Congress & Exposition, Detroit, Michigan (Feb. 24-28, 1992)
BMW1030	Duoba, M, "Challenges for the Vehicle Tester in Characterizing Hybrid Electric Vehicles," 7 th CRC On Road Vehicle Emissions Workshop, San Diego, California (Apr. 9-11, 1997)
BMW1031	<i>Electric and Hybrid Vehicles Program, 18th Annual Report to Congress for Fiscal Year 1994</i> , U.S. Department of Energy (Apr. 1995)
BMW1032	Bates, B. et al., "Technology for Electric and Hybrid Vehicles," Society of Automotive Engineers, SAE/SP-98/1331 (Feb. 1998)
BMW1033	Stodolsky, F. et al., "Strategies in Electric and Hybrid Vehicle Design," Society of Automotive Engineers, SAE/SP-96/1156, Kozo, Y. et al., "Development of New Hybrid System – Dual System," SAE/SP-96/0231 (Feb. 1996), 25-33
BMW1034	Leschly, K.O., <i>Hybrid Vehicle Potential Assessment, Volume 7: Hybrid Vehicle Review</i> , U.S. Department of Energy (Sep. 30, 1979)
BMW1035	<i>Final Report Hybrid Heat Engine / Electric Systems Study</i> , Vol. 1:1-13, The Aerospace Corporation for the U.S. Environmental Protection Agency (June 1, 1971)

Exhibit No.	Description of Exhibit
BMW1036	Masding, P.W., et al., "A microprocessor controlled gearbox for use in electric and hybrid-electric vehicles," <i>Transactions of the Institute of Measurement and Control</i> , Vol. 10, No. 4 (July –Sep. 1988), 177-86
BMW1037	Yamaguchi, J., "Toyota Prius," <i>Automotive Engineering International</i> (Jan. 1998), 29-32
BMW1038	U.S. Patent No. 6,209,672 ("Severinsky '672")
BMW1039	Davis, G.W., Ph.D. et al., <i>Introduction to Automotive Powertrains</i> , Chapter 2: Road Loads (2000), 27-68
BMW1040	Ehsani, M. et al., "Propulsion System Design of Electric Vehicles," Texas A&M University, Department of Electrical Engineering (1996), 7-13
BMW1041	Ehsani, M. et al., "Propulsion System Design of Electric and Hybrid Vehicles," <i>IEEE Transactions on Industrial Electronics</i> , Vol. 44, No. 1 (Feb. 1997), 19-27
BMW1042	Bauer, H., ed., <i>Automotive Handbook</i> , Robert Bosch GmbH (4th Ed. Oct. 1996), Excerpts
BMW1043	<i>Design Innovations in Electric and Hybrid Electric Vehicles</i> , Society of Automotive Engineers, SAE/SP-96/1089, Anderson, C., et al, "The Effects of APU Characteristics on the Design of Hybrid Control Strategies for Hybrid Electric Vehicles," SAE/SP-95/0493 (Feb. 1995), 65-71
BMW1044	U.S. Patent No. 5,656,921 ("Farrall")
BMW1045	Stone, R., <i>Introduction to Internal Combustion Engines</i> , Chapter 9: Turbocharging (2nd Ed. 1995), 324-53
BMW1046	Bauer, H., ed., <i>Automotive Handbook</i> , Robert Bosch GmbH (4th Ed. Oct. 1996), Excerpts
BMW1047	Heisler, H., <i>Advanced Engine Technology</i> , Chapters 6.7-6.10 (1995), 315-47

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