

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT and  
BMW OF NORTH AMERICA, LLC,  
Petitioners,

v.

PAICE LLC and THE ABELL FOUNDATION, INC.,  
Patent Owners.

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Case IPR2020-01386  
Patent 7,237,634

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**PATENT OWNERS' SUR-REPLY**

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### EXHIBIT LIST

<b>Exhibit No.</b>	<b>Description</b>
PAICE 2001	Patent Owners' Preliminary Response to Petition for IPR in IPR2015-0722 Dated August 10, 2015
PAICE 2002	Patent Owner's Preliminary Response to Petition in IPR2015-00787 dated August 10, 2015
PAICE 2003	Patent Owner's Preliminary Response to Petition in IPR2015-00791 dated August 10, 2015
PAICE 2004	Statutory Disclaimer
PAICE 2005	Reserved
PAICE 2006	Response to Interrogatory 27, BMW Responses to PAICE 1st Set of Interrogatories [1-28] dated May 6, 2020
PAICE 2007	Paice/Toyota Complaint dated June 8, 2004
PAICE 2008	Paice/Toyota Amended Complaint dated July 3, 2007
PAICE 2009	Scheduling Order [Docket No. 36] from 1:19-cv-03348-SAG (USDC-DMD) dated February 25, 2020
PAICE 2010	Docket Navigator Statistics – Top Patents by Number of IPRs
PAICE 2011	Ex. J to BMW Invalidity Contentions dated June 8, 2020
PAICE 2012	Reserved
PAICE 2013	IPR2017-00232 Petition dated November 14, 2016
PAICE 2014	UK Patent Application GB 2,318,105 Cover Page
PAICE 2015	Printout of <a href="http://www.paicehybrid.com/licensing-agreements/">http://www.paicehybrid.com/licensing-agreements/</a>
PAICE 2016	Declaration of Mahdi Shahbakhti, Ph.D.
PAICE 2017	Curriculum Vitae of Mahdi Shahbakhti, Ph.D.
PAICE 2018	Bosch Gasoline-engine Management
PAICE 2019	Selected Pages From John Heywood, Internal Combustion Engines Fundamentals
PAICE 2020	Selected Pages From Merhdad Ehsani et al, Modern Electric, Hybrid Electric, and Fuel Cell Vehicles
PAICE 2021	Matthew Cuddy et al., Analysis of the Fuel Economy Benefit of Drivetrain Hybridization
PAICE 2022	Selected Pages From Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025
PAICE 2023	Selected Pages From Assessment of Fuel Economy of Fuel Economy Technologies for Light Duty Vehicles

PAICE 2024	Selected Pages From Richard Stone, Introduction to Internal Combustion Engines
PAICE 2025	Reserved
PAICE 2026	Reserved
PAICE 2027	Reserved
PAICE 2028	Guzzella et al., Introduction to Modeling Control of Internal Combustion Engine Systems
PAICE 2029	Reserved
PAICE 2030	Reserved
PAICE 2031	Reserved
PAICE 2032	Reserved
PAICE 2033	Guzzella et al., Vehicle Propulsion Systems
PAICE 2034	Bumby, J.R. et al., "Optimisation and control of a hybrid electric car," IEE PROCEEDINGS, Vol. 134, Pt. D, No. 6 (Nov. 1987), 373-87 ("Bumby II")
PAICE 2035	June 16, 2021 Deposition Transcript of Dr. Gregory Davis in IPR2020-00994

## **I. Introduction**

BMW's reply confirms that all challenged claims of the '634 patent are patentable. Despite BMW's repeated attempts to backfill its deficient Petition, significant gaps remain in the prior art. BMW's reply continues to beat the same drum about "bodily incorporation." But obviousness is BMW's burden, and BMW's incorrect, oversimplified, and unexplained reasons to combine fail to explain how and why a POSA would combine its proposed references.

## **II. BMW's Grounds Fail To Demonstrate Obviousness**

### **A. Ground 1 – Severinsky in View of Nii Does Not Render Claim 33 Obvious**

Claim 33 specifically requires "varying said setpoint"—a parameter the hybrid controller uses for selecting operating modes—based on "monitoring patterns of vehicle operation over time." BMW cannot show that either Severinsky or Nii vary anything resembling a "setpoint" or even contemplate how the controller could vary such a control parameter based on monitored vehicle patterns over time. Severinsky does not vary any alleged "setpoint," and Nii is concerned with setting the engine at a constant output for battery charging.

In lieu of evidence, BMW offers sweeping statements about how pattern information is good for enhancing vehicle efficiency. But the claims are not so broad, and BMW cannot satisfy its burden by disregarding key claim elements.

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