

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INGURAN, LLC d/b/a SEXING TECHNOLOGIES,

Petitioner

v.

PREMIUM GENETICS (UK) LTD.,

Patent Owner

Case PGR: Unassigned

Patent No. 8,933,395

DECLARATION OF GIACOMO VACCA, PH.D.

Exhibit No. 1002

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	QUALIFICATIONS AND BACKGROUND	1
III.	BACKGROUND OF TECHNOLOGY	5
	A. Flow Cytometry	6
	B. Cell Sorting	9
	C. Laser Killing	11
	D. Sperm Sorting	12
	E. Bulk Cell Separation	14
IV.	THE '395 PATENT	16
	A. '395 Patent Specification	16
	B. '395 Patent Claims	21
	C. '395 Patent Prosecution History	29
V.	LEGAL PRINCIPLES APPLIED	31
VI.	PERSON OF ORDINARY SKILL IN THE ART	34
VII.	CLAIM CONSTRUCTION AND INDEFINITENESS	34
VIII.	THE SPECIFICATION DOES NOT ENABLE THE SUBJECT MATTER OF CLAIMS 1-14 OF THE '395 PATENT	37
	A. Non-Enablement of Claim 1 of the '395 Patent	37
	B. Non-Enablement of Claim 2 of the '395 Patent	53
IX.	SUMMARY OF THE PRIOR ART	78
	A. Mueth – U.S. Patent 7,355,696 B2	78
	B. Durack – PCT Publication No. WO 2004/088283	83
	C. Frontin-Rollet – PCT Publication No. WO 2005/075629 A1	90
	D. Wada – U.S. Patent No. 6,506,609 B1	93
	E. Kachel – <i>J. Hystochem. Cytochem.</i> 25, 774 (1977)	98
X.	CLAIMS 1-13 OF THE '395 PATENT ARE ANTICIPATED BY MUETH	102
XI.	CLAIM 14 OF THE '395 PATENT IS OBVIOUS IN VIEW OF MUETH, EITHER ALONE, OR IN LIGHT OF DURACK	136
XII.	CLAIM 1 OF THE '395 PATENT IS ANTICIPATED BY FRONTIN-ROLLET	142
XIII.	CLAIM 1 OF THE '395 PATENT IS ANTICIPATED BY DURACK	150
XIV.	CLAIMS 2-14 OF THE '395 PATENT ARE OBVIOUS IN VIEW OF WADA AND KACHEL AND DURACK	167
	A. Motivation to Combine Wada with Kachel and Durack	167
XV.	SECONDARY CONSIDERATIONS	208
XVI.	CONCLUSION	208

I. INTRODUCTION

1. My name is Dr. Giacomo Vacca. I have been retained by Inguran LLC, dba Sexing Technologies (“Petitioner”) as an independent expert consultant in this proceeding before the United States Patent and Trademark Office. Although I am being compensated at my standard consulting rate of \$300 per hour for the time I spend on this matter, I have no personal financial interest in any of the entities involved in this proceeding, and my compensation does not depend in any way on my testimony, my conclusions, or the outcome of my analysis.

2. I have been asked to consider and provide my opinions regarding the prior art in relation to the claims of U.S. Patent No. 8,933,395 (“395 patent”). My opinions and the bases for my opinions are outlined below.

3. The testimony I may provide about scientific principles relating to my analysis and opinions, includes subjects relating to, for example, optics, photonics, particle analysis, microfluidics, device and system design, and their application to flow cytometry and particle selection and sorting.

II. QUALIFICATIONS AND BACKGROUND

4. Attached as Exhibit 1003 is my curriculum vitae, incorporated by reference within this declaration. The following is a brief summary of my qualifications.

5. I received a Bachelor of Arts (B.A.) degree and a Master of Arts (M.A.) degree, both from Harvard University, in 1991, and a Doctorate (Ph.D.) in Applied Physics from Stanford University in 2001. As part of my doctoral dissertation work, I invented a technique to use light scattering to probe fluid phenomena on very short timescales, and designed and built a laboratory and all necessary custom equipment to demonstrate it. While pursuing my doctoral studies, I also worked as a Graduate Teaching Assistant, leading laboratory and discussion sessions and grading student assignments for physics courses.

6. From 1991 to 1994, I was Associate Physicist at Exxon Research & Engineering Company in Clinton, New Jersey. This facility was at the time the corporate research headquarters of Exxon Corporation. There I conducted X-ray scattering experiments to analyze and characterize complex fluids, thin films, and composite materials, and designed and built equipment to study the flow of multiphase fluids in porous media.

7. From 2000 to 2002, I was Design Physicist at Lightwave Microsystems Corp. in San Jose, California. I was a co-inventor of several issued patents at the intersection of optics and microfluidics, for applications from telecommunication to biotechnology. I set up a new laboratory for research and development of microfluidics-based optical devices, and prototyped early device concepts. I also designed optical integrated circuits (the equivalent of electronic

integrated circuits, using light instead of electricity), modeled device behavior and analyzed fabrication data sets to improve yield and performance.

8. From 2002 to 2005, I took on the successive roles of Optical Engineer, Project Leader, and Product Marketing Manager at Picarro, Inc., in Sunnyvale, California, a company which at the time was developing and manufacturing solid-state lasers and laser-based instrumentation for applications in flow cytometry, microscopy, and spectroscopy. I was involved in the development, transfer to manufacturing, and, later, marketing, of the Cyan laser product line—a compact and robust solid-state 488-nm laser light source aimed at the flow cytometry market. I also led the development of a tunable solid-state infrared laser for spectroscopy applications.

9. From 2005 to 2011, I was Program Development Manager in the New Product Introduction department of the Hematology Business Unit, Diagnostics Division, of Abbott Laboratories in Santa Clara, California. I later took on additional, concurrent, roles of Intellectual Property Manager in the same business unit; and Member of the New Technology Group in the Diagnostics Division. I was responsible for generating, proving, developing, and ultimately launching new technology concepts in flow-cytometry-based semi-automated hematology analysis, encompassing all core aspects of reagent design, fluidic control, optical interrogation, signal processing, and cell identification algorithms. In 2010, in

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