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Academic Family Tree of Professor John Newman

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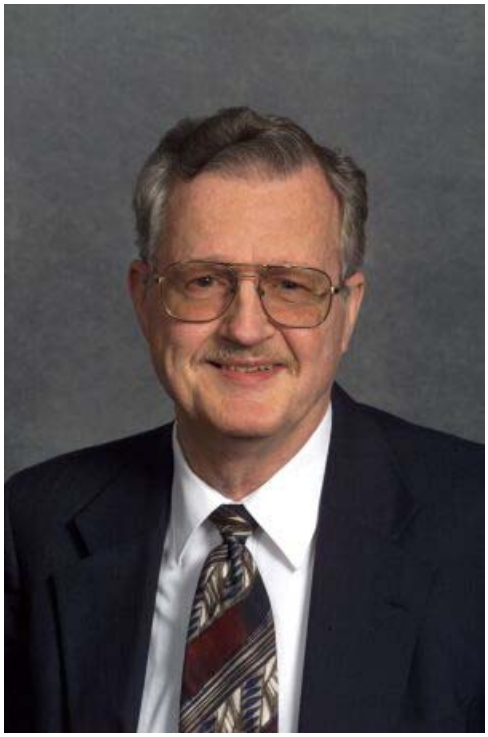
The field of electrochemical engineering, especially the design and analysis of electrochemical systems, has progressed greatly due to the work of Professor John Newman at the University of California, Berkeley. We present the academic family tree of Professor John Newman comprising his students and their students, and a list of theses and dissertations he directed at UC Berkeley. Professor Newman has graduated thirty Masters and forty three PhD students and seventeen have gone on to become faculty members.



Professor John Newman

Biography

Professor John Newman earned his bachelor's degree in chemical engineering in 1960 from Northwestern University. While at Northwestern University, he was an engineering co-op student at Oak Ridge National Laboratory. Professor Newman entered the University of California, Berkeley for graduate study, obtaining his master's degree in 1962, on current distribution in porous electrodes, under the guidance of Professor

Charles Tobias. In 1963, he obtained his doctorate on steady laminar flow past a circular cylinder at high Reynolds numbers. While a PhD student, he contributed to the preparation of major portions of the English edition of Levich's book, Physicochemical Hydrodynamics, published in 1962.

Shortly after receiving his doctorate, Professor Newman joined the faculty at UC Berkeley and became a full professor in 1970, where he currently holds the Charles W. Tobias Chair in Electrochemistry. He won the Young Author's Prize for his work[1] on current distribution on a rotating disk below the limiting current. In 1969, Professor Newman again won the Young Author's Prize for his work[2] with his student William Parish on modeling channel electrochemical flow cells. In 1985, he received the David C. Grahame Award of the ECS Physical and Analytical Electrochemistry Division. Professor Newman's book, *Electrochemical Systems*, published in 1973, with a second edition in 1991, and a third in 2004 (with co-author Karen E. Thomas-Alyea), is used throughout the world as a monograph and graduate text in electrochemical engineering. He is an ECS Fellow and an honorary member. His other awards include the Henry B. Linford Award for Distinguished Teaching in 1990, the Olin Palladium Medal in 1991, and the Vittorio de Nora Award in 2008. The title of Professor Newman's talk for the Vittorio de Nora Award was "From nW to TW," and it focused on his recent work on the derivations of the Onsager reciprocal relations for multicomponent diffusion, the electrochemical reduction of carbon dioxide and water to carbon monoxide and hydrogen, and the production of liquid fuels from renewable energy. He was associate editor for the Journal of the Electrochemical Society for 10 years starting in 1990.

Professor Newman is also a Faculty Senior Scientist and Principal Investigator in the Environmental Energy Technologies Division at Lawrence Berkeley National Laboratory, where he is in charge of the Batteries for Advanced Transportation Technologies program. In 2002, he spent a semester as the Onsager Professor at the Norwegian University of Science and Technology in Trondheim, Norway, and in 1999, was elected to the National Academy of Engineering.

Academic Family Tree

We present the academic family tree of Professor Newman in the following section. We have highlighted his academic descendants who have gone on to become faculty members in bold. In the following table, we present the list of theses and dissertation directed by Professor Newman at UC-Berkeley along with their current position and address.

ACADEMIC FAMILY TREE OF PROFESSOR JOHN NEWMAN

John S. Newman (PhD, 1963), University of California-Berkeley

- Thomas Atkins (MS, 1965)
- Limin Hsueh (MS, 1966; PhD, 1968)
- Ping Huei Sih (MS, 1966; PhD, 1971)
- Marvin Edward McDonald (MS, 1966)
- Paul Milios (MS, 1967)
- **Thomas W. Chapman (PhD, 1967), University of Wisconsin-Madison**
  - **Reinaldo Caban (MS, 1972; PhD, 1976), University of Puerto Rico**
  - Morris R. Schoenberg (PhD, 1974)
  - Gerald L. Bauer (PhD, 1974)
  - Mark Thiel (MS, 1974)
  - John Stolzenberg (PhD, 1975)
  - Scott Troyer (MS, 1975)
  - M. E. Tunison (PhD, 1976)
  - William Collins (MS, 1975)
  - Charles Hales (MS, 1977)
  - James Arthur Trainham, III (MS, 1977)
  - William Wruck (MS, 1978)
  - Samuel Tse (MS, 1979)
  - Barry Freehill (MS, 1979)
  - Edward Vargas (MS, 1979)
  - Francisco Brana (PhD, 1979)
  - Vladimir Hampl (MS, 1979)
  - **Ali Altway (MS, 1979), Institut Teknologi Surabaya, Indonesia**
  - Steven Kuo (PhD, 1980)
  - Paul Yeung (MS, 1981)
  - Randall DeRuiter (MS, 1981)
  - Nanang Edi (MS, 1981)
  - Lawrence Keller (MS, 1981)
  - Udomsak Santidomrongkul (MS, 1981)
  - William Schmitt (MS, 1982)
  - **Shi-Chern Yen (PhD, 1984), National Taiwan University**
    - Jing, He (MS, 1986)
    - Ging-Yi, Yao (MS, 1987; PhD, 1992)
    - Jin-Sheng, Wang (MS, 1987; PhD, 1992)
    - Ming-Zhou, Kuo (MS, 1987)
    - Wen-Yu, Wu (MS, 1988)
    - Yao-Fei, Huang (MS, 1989)
    - Zhi-Guan, Tsai (MS, 1989)
    - Zhi-Da, Wang (MS, 1990; PhD, 1995)
    - Wei-Long, Zhou (MS, 1991; PhD, 1996)
    - Yi-Min, Lu (MS, 1991; PhD, 1996)
    - Shu-Hua, Zhan (MS, 1991)
    - Wen-Hsiang, Lo (MS, 1992)
    - Cheng-Hong, Zheng (MS, 1992)
    - Shih-Chieh, Hsueh (MS, 1992)
    - Meng-Yu, Tsai (MS, 1993)

- Hung-I, Lo (MS, 1993)
- Jing Bin, Lin (MS, 1994)
- Qing Xiong, Chen (MS, 1994)
- Guan Zheng, Hou (MS, 1994)
- Hui Zhen, Gao (MS, 1995)
- Ru Li, Zheng (MS, 1995)
- Shi-Hong, Liao (MS, 1996)
- Jia-Fang, Wu (MS, 1997)
- Bo- Xuan, Lin (MS, 1997)
- Yuh-Fen, Huang (MS, 1998)
- Zi-Qian, Yen (MS, 1998)
- Chung-Tsien, Chen (MS, 1998; PhD, 2008)
- Pei-Yi, Liu (MS, 1999)
- Tzu-Hsuan, Tsai (MS, 1999; PhD, 2003)
- Chi-Lung, Chang (MS, 1999)
- Yong-Fu, Wu (PhD, 2000)
- Ning-Yih, Sheu (MS, 2000; PhD, 2006)
- Jiun-Jie, Yang (MS, 2000)
- Yu-Xiang, Lin (MS, 2000)
- Yi-Mao Lin (PhD, 2001)
- Cyun-Yao, Lin (MS, 2001)
- Cheng-Yin, Tsai (MS, 2001)
- Meng Chia, Cheng (MS, 2001)
- Kun-Shen, Shen (MS, 2002)
- Hou-De, Lu (MS, 2002)
- Tsung-Wei, Tzeng (MS, 2002)
- Yi-Chen, Wang (MS, 2003)
- Chun-Yao, Lo (MS, 2003)
- Shin-Bin, Chou (PhD, 2004)
- Jiun-Shian, Kuo (MS, 2004)
- Wen-Hsiung, Lu (MS, 2005)
- Chun-Cheng, Wu (MS, 2005)
- Yi-Hung, Liu (MS, 2005)
- Jen-Hsiung, Lu (MS, 2005)
- Shao-Ling, Wu (MS, 2006)
- Da-Wei, Lin (MS, 2006)
- Han-Bang, Chen (MS, 2006)
- Chih-Hao, Kuo (MS, 2006)
- Jui-Hsiung, Huang (PhD, 2007)
- Po-Han, Huang (MS, 2007)
- Ying-Cheng, Lan (MS, 2007)
- Sheng-Wei, Cheng (MS, 2007)
- Pei-Yuan, Chung (MS, 2008)
- Tzu-Han, Lin (MS, 2008)
- Ti- Chiang, Chueh (MS, 2008)

- William J. Wruck (PhD, 1984)
- Michael Farin (MS, 1984)
- Richard A. Wallden (MS, 1984)
- Kathleen P. Barton (MS, 1985; PhD, 1987)

- Mark F. Mathias (PhD, 1987)
- Michael A. Alexander (PhD, 1988)
- Myriam Ulrike Kuppinger (MS, 1988)
- Carlos M. Villa (PhD, 1993)
- Christopher S. Hofseth (PhD, 1993)
- Helena P. Stadniychuk (MS, 1994)

- Vinay Marathe (MS, 1968)
- **Kemal Nisancioglu (MS, 1970; PhD, 1973), Norwegian University of Science and Technology**
  - Øystein Strandmyr (MS, 1977)
  - Tore R. Andersen (MS, 1978)
  - Knut Y. Davanger (MS, 1978)
  - Ivar Nybø (MS, 1979)
  - Aud I. Rasmussen (MS, 1979)
  - Stein E. Rønningen (MS, 1979)
  - Per S. Solheim (MS, 1979)
  - Vegar Steiro (MS, 1981)
  - Sigve Aabø (MS, 1983)
  - Liv Odden (MS, 1982)
  - Turid Dahl (MS, 1984)
  - Arvid Supphellen (MS, 1984)
  - John Braathen (MS, 1985)
  - Tom Hallan (MS, 1986)
  - Ragne Hildrum (MS, 1987)
  - Trine L. Lambine (MS, 1987)
  - Hilde Vatslid (MS, 1987)
  - Ingegerd Aanonsen (MS, 1987)
  - Berit K. Aaase (MS, 1987)
  - Tor G. Tollefsen (MS, 1988)
  - Jon K. Ramsvik (MS, 1991)
  - Geir T. Solvi (MS, 1991)
  - Siv Galteland (MS, 1993)
  - Anne H. Nygård (MS, 1993)
  - **Håvard Karoliussen (PhD, 1993), Sør-Trøndelag University College**
  - Astrid Bjørgum (PhD, 1993)
  - Thore Bergsaker (MS, 1994)
  - Andreas Afseth (MS, 1995, PhD, 1999)
  - Linda R. Børvik (MS, 1995)
  - Karl K. Kobberstad (MS, 1995)
  - Jan H. Nordlien (PhD, 1995)
  - Håkon Leth-Olsen (PhD, 1996)
  - Øysteon Birketveit (MS, 1997)
  - Morten Svenning (MS, 1997)
  - Terje Tinbod (MS, 1997)
  - Ann Mari Svensson (PhD, 1997)
  - Harald Laugen (MS, 1998)
  - Trine Løland (MS, 1998)
  - Kari-Anne Landro (MS, 1999)
  - Andre Mikkelsem (MS, 1999)

- Harald Miland (MS, 1999)
- Huyen D. H. Pham (MS, 1999)
- Harald L. Østerberg (MS, 1999)
- Lars H. Andersen (MS, 1999)
- Trond Haugen (MS, 1999)
- Bård A. Olsen (MS, 2000)
- Anette Pedersen (MS, 2000)
- Gaute Svenningsen (MS, 2000, PhD, 2005)
- Bjarte E. Haugstveit (MS, 2001)
- Tonje Berntsen (MS, 2002)
- Jan T. B. Gundersen (PhD, 2002)
- André Granå (MS, 2003)
- Kristian F. Heen (MS, 2003)
- Otto Lunder (PhD, 2003)
- Steinar Mollan (MS, 2003)
- Solveig C. A. Seknes (MS, 2003)
- Cecilie My Wo (MS, 2004)
- Martin S. Foss (MS, 2004)
- Kristin Huseland (MS, 2005)
- Trine Okstad (MS, 2005)
- Øystein Sævik (PhD, 2005)
- Stine S. Transeth (MS, 2005)
- Linn Boberg (MS, 2006)
- Tone Frydenberg (MS, 2006)
- Sølvi Slåtten (MS, 2006)
- Anne M. Pedersen (MS, 2006)
- Øyvind G. Rannestad (MS, 2006)
- Nina Ljones (MS, 2006)
- Merethe Falstad (MS, 2008)
- Ingunn Ramsdal (MS, 2008)
- Magnus Halvorsen (MS, 2008)
- Thanh T. Cao (MS, 2008)

- Kong-Heong Tan (MS, 1970)
- **Nader Vahdat (MS, 1972), Tuskegee University**[3]
- Harry Hung-Kwan Yip (MS, 1973)
- Robert Victor Homsy (PhD, 1974)
- Thomas James Edwards (MS, 1974; PhD, 1977)
- Charles Milton Mohr, Jr (PhD, 1975)
- Joseph John Miksis, Jr (MS, 1975)
- **Peter Willem Appel (PhD, 1976), Delft University of Technology**
- **Ralph Edward White (PhD, 1977), University of South Carolina**
  - Mark Edmund (MS, 1980)
  - Raju K. Hirani (MS, 1980)
  - Bruce Blenkarn (MS, 1981)
  - Susan Lorimer (MS, 1982)
  - **John Van Zee (MS, 1982; PhD, 1984), University of South Carolina**[4]
    - Tzeng-Huann Teng (MS, 1985)
    - Chih-Ta Lee (MS, 1987)
    - Patrick C. Y. Chin (MS, 1988)

- Shu-Shan Zeng (MS, 1988)
- E. J. Markel (PhD, 1990)
- S. A. McCluney (1991)
- C. –T. Lee (PhD, 1991)
- D. A. Wingard (MS, 1991; PhD, 1996)
- Suzanne L. Blanton (MS, 1994)
- Hideki Sasaki (MS, 1995)
- Mahesh Murthy (PhD, 1997)
- Chien-Hsien Ho (PhD, 1997)
- Gowri Subramaniam Nagarajan (PhD, 1998)
- Woo-Kum Lee (PhD, 2000)
- Elizabeth Davis (MS, 2001)
- Lifeng Chen (PhD, 2001)
- Gowri Yeduvaka (MS, 2002)
- Jeffrey Glandt (MS, 2002)
- Sun-Hoe Kim (PhD, 2004)
- Rana Mohtadi (PhD, 2004)
- Joseph Edward Liedhegner (MS, 2004)
- Tao Gu (PhD, 2005)
- Herie Javier Soto (PhD, 2005)
- Wentao Wang (PhD, 2006)
- Murali Sankar Venkatraman (PhD, 2006)
- Scott Douglas Greenway (PhD, 2007)
- Tochi Tudor Nwoga (PhD, 2007)

- Joseph Holmes (MS, 1984)
- Donald Wolfe (MS, 1984)
- Michael Mader (MS, 1985)
- **Trung Van Nguyen (MS, 1985; PhD, 1988), University of Kansas**
  - Haitao Huang (MS, 1997)
  - Jung Seok Yi (PhD, 1998)
  - David Lee Wood, III (MS, 1998)
  - Mack W. Knobbe (MS, 2000)
  - Minh Vu Nguyen (MS, 2003)
  - Wensheng He (PhD, 2003)
  - Dilip Natarajan (PhD, 2004)
  - Guangyu Lin (PhD, 2006)
  - Heebong Ohn (MS, 2007)
- Shiuan Chen (MS, 1986)
- William Ryan (MS, 1986)
- Clifford Walton (PhD, 1987)
- Prosper Adanuvor (PhD, 1987)
- Eric Dimpault-Darcy (MS, 1987)
- Thomas Evans (PhD, 1988)
- Rodolfo Morales, Jr. (MS, 1988)
- Gary Simpson (MS, 1988)
- Stephen Ridge (MS, 1998)
- Zhenhua Mao (PhD, 1989)
- Frederic Jagush (MS, 1989)
- Ralph Faxel (MS, 1990)

- Teshome Hailu (MS, 1990)
- Taewhan Yeu (PhD, 1990)
- Rahul Bindlish (MS, 1991)
- Donald A. Curtis (MS, 1991)
- Ken-Ming Yin (PhD, 1991)
- Bhasker Dave (PhD, 1991)
- **Eric E. Kalu (PhD, 1991), Florida State University**
  - Aruna Kuruganti (PhD, 1998)
  - Renate Itoe (PhD, 1999)
  - Dibyendu De (PhD, 1999)
  - H.-H. Chen (MS, 2005)
- Oscar Mendoza (PhD, 1991)
- Deyuan Fan (PhD, 1991)
- Michael Kimble (PhD, 1991)
- Junbom Kim (PhD, 1992)
- Jenn-Feng Yan (PhD, 1992)
- Steven Lee (MS, 1992)
- Gurmeet Singh (MS, 1992)
- Makoto Kawanami (MS, 1992)
- Snezana Popova (MS, 1992)
- Mohammed A. Alwohaibi (MS, 1992)
- **Gautam Pillay (PhD, 1992), Rowan University**
- Guanghong Zheng (PhD, 1994)
- Pauline De Vidts (PhD, 1995)
- Rick Prieto (PhD, 1996)
- Surya Pakalapati (MS, 1992; PhD, 1996)
- Darryl Coleman (MS, 1994; PhD, 1996)
- Haraldo Duarte (PhD, 1996)
- Dawn See (PhD, 1998)
- Murali Ramasubramanian (PhD, 1998)
- Pranatharthi Haran Balasubramanian (PhD, 1998)
- Bradley Johnson (PhD, 1998)
- Dong Zhang (PhD, 1999)
- Pankaj Arora (PhD, 1999)
- Shannon Baxter (PhD, 1999)
- Ping Yu (PhD, 1999)
- Bin Wu (PhD, 2000)
- **Gerardine Botte (PhD, 2000), Ohio University**
  - Matt Cooper (MS, 2005)
  - Nilesh Sathe (MS, 2006)
  - Egilda Purusha Bonnin (MS, 2006)
  - Mahesh Biradar (MS, 2007)
  - Xin Jin (PhD, 2008)
- Anand Durairajan (PhD, 2001)
- **Venkat Subramanian (PhD, 2001), Tennessee Tech. University**
  - Deepak Tapriyal (MS, 2004)
  - Vamsi K. Maddirala (MS, 2004)
  - Vinten D. Diwakar (MS, 2005)
  - Kartik Potukuchi (MS, 2006)

- Anupama Guduru (MS, 2007)
- Robert K. Philips (MS, 2008)
- Andrew Thomas Haug (PhD, 2002)
- Parthasarathy Manavala Gomadam (PhD, 2003)
- Premanand Ramadass (PhD, 2003)
- Qingzhi Guo (PhD, 2004)
- Godfrey Sikha (PhD, 2005)
- Sindhuja Renganathan (MS, 2005)
- Sheba Devan (MS, 2003; PhD, 2006)
- Shriram Santhanagopalan (PhD, 2006)
- Qi Zhang (PhD, 2007)
- Qingbo Dong (PhD, 2007)
- Karthikeyan Kumaresan (PhD, 2008)

- Bruce Abbott Gordon (MS, 1978)
- **Peter S. Fedkiw (PhD, 1978), North Carolina State University**
  - Carlton F. Dwiggins (MS, 1982)
  - **Joseph McGuire (MS, 1982; PhD, 1987), Oregon State University**
    - Euisang Lee (MS)
    - Viwat Krisdhasima (PhD)
    - Ja-Kael Luey (MS)
    - **Prasert Suttiprasit (PhD), Phitsanulok University, Thailand**
    - Sarady Tan (MS)
    - Jianguo Yang (MS)
    - **Kamal Al-Malah (MS, PhD), Jordan University of Science and Technology, Jordan**
    - Sidney Kirtley (MS)
    - **Hamood Al-Makhlafi (MS, PhD), Sana'a University, Yemen**
    - Lakamraju Muralidhara (MS)
    - Brijesh Singla (MS)
    - Adil Nasir (MS)
    - Jun Wang (MS)
    - Nilobon Podhipleux (MS, PhD)
    - Pravina Vinaraphong (MS)
    - Minghua Tian (MS)
    - Qiurong Xu (MS)
    - **Jacek Jaczynski (MS), West Virginia University, Morgantown**
    - Carolyn Baker (MS)
    - Sasithorn Kongruang (MS)
    - **Woo-Kul Lee (PhD), Dankook University, Seoul, South Korea**
    - Hyo Jin Lee (MS)
    - Omkar Joshi (MS, PhD)
    - Pranav Joshi (PhD)
    - Yuan Ching Tai (PhD)
    - Liping Chu (MS)
    - Allyson Fry (MS)
  - Ricky W. Watts (MS, 1983)
  - William D. Scott, Jr. (MS, 1983)
  - Jerry Chung-Hoo Chao (MS, 1984)
  - Steven J. Rodberg (MS, 1984)

- J. Lewis Ayres (PhD, 1986)
- Christian L. Traynelis (MS, 1987)
- Daniel R. Brouns (MS, 1987)
- James Michael Potente (PhD, 1988)
- Andrew S. Viner (MS, 1988)
- Timothy Richard Nolan (PhD, 1989)
- Wei-Hwa Her (PhD, 1990)
- John Cooke Smeltzer (PhD, 1990)
- **John Walter Weidner (PhD, 1991), University of South Carolina**
  - Sathya Motupally (MS, 1994; PhD, 1998)
  - Suzanne L. Keller (MS, 1994)
  - Shannon Baxter (MS, 1995)
  - Mukul Jain (PhD, 1998)
  - Kamal Jha (PhD, 1998)
  - Anand Srikumar (MS, 1998)
  - Venkat Srinivasan (PhD, 2000)[5]
  - Andrew Thomas Haug (PhD, 2002)
  - Charles E. Holland (MS, 2003)
  - Parthasarathy Manavala Gomadam (PhD, 2003)
  - Balasubramanian Lakshmanan (PhD, 2003)
  - **Inas Al-Nashef (PhD, 2004), King Saud University**
  - Vasudevan Suryanarayanan (MS, 2005)
  - Lingyun Liu (PhD, 2006)
  - Vijay Anand Sethuraman (PhD, 2006)
  - Premkumar Sivasubramanian (MS, 2007)
  - Brenda Lee Garcia-Diáz (PhD, 2007)
- Shing-Ru Wang (PhD, 1991)
- Raymond Liu (PhD, 1992)
- Rakesh Bakshi (PhD, 1992)
- Kenneth Joseph Walsh (PhD, 1994)
- Jay Raghavan (MChE, 1992)
- Sanjay Sharma (MS, 1994)
- Elaine Ann Cohen Hubal (PhD, 1996)
- Michael Tyler Hicks (PhD, 1997)
- Joseph Miller (MS, 1996)
- Karine Nouel (MS, 1996)
- David Andrew Dudek (PhD, 1998)
- Christine Lizzul Rinne (PhD, 1999)
- Greg Clayson (MChE, 2001)
- H. Jeremy Walls (PhD, 2001)
- Michael William Riley (PhD, 2002)
- Hua Deng (MS, 2002)
- Ruchi Gupta Singhal (MS, 2003)
- **Khaled Mohamed Saber Abdel-Hamid Youssef (PhD, 2003), NCSU**
- Jeffrey Alan Yerian (PhD, 2003)
- Jian Zhou (PhD, 2003)
- **Fadhel Abbas Azeez (MS, 2005; PhD, 2008), Kuwait University**
- Rameshwar Yadav (PhD, 2008)

- Thomas Friedrich Wilhelm Foerster (MS, 1979)

- **James Arthur Trainham, III (PhD, 1979), National Academy of Engineering**
- **Richard Pollard (PhD, 1979), University of Houston**
  - H. Guerner (MS, 1982)
  - M. Sridharan (MS, 1984)
  - P. Lee (MS, 1984)
  - R. L. Abber (MS, 1984)
  - K.-C. Tsaur (PhD, 1984)
  - H. E. Rebenne (PhD, 1987)
  - T. Comte (MS, 1987)
  - M. Tirtowidjojo (PhD, 1988)
  - R. Arora (PhD, 1990)
  - R. Koemtzopoulos (PhD, 1994)
  - Y.-F. Wang (PhD, 1994)
  - Z. Zhang (PhD, 1994)
  - R. Haswani (MS, 1995)
  - M. Cloeter (PhD, 1997)
  - M. G. D'Oliveira (MS, 1998)
  - E. C. Darcy (PhD, 1998)
- Clarence Garlan Law, Jr. (PhD, 1980)
- Peter Eugene Pierini (PhD, 1981)
- Ellen Marie Pawlikowski (PhD, 1981)
- **Mark Edward Orazem (PhD, 1983), University of Florida**
  - Michael G. Miller (MS, 1985)
  - Brian K. Faillon (MS, 1985)
  - C. Gan (MS, 1986)
  - Gregory S. Hickey (MS, 1986)
  - Lucinda A. Joyce (MS, 1986)
  - Muhammad Kazeminy (MS, 1986)
  - Jose Matthew Rodriguez Esteban (MS, 1988; PhD, 1991)
  - Mark M. Lowry (MS, 1988)
  - Frank L. Smolko (MS, 1988)
  - Abhay B. Bulsari (PhD, 1988)
  - David Bivings Bonham (PhD, 1988)
  - Oliver C. Moghissi (MS, 1989)
  - Andrew Norbert Jansen (MS, 1989; PhD, 1992)
  - Conrad B. Diem (PhD, 1990)
  - Paul Thomas Wojcik (MS, 1992; PhD, 1997)
  - Oliver Claudius Moghissi (PhD, 1993)
  - Pankaj Agarwal (PhD, 1994)
  - Steven L. Carson (MS, 1995; PhD, 1999)
  - Juleh Minoo (MS, 1995)
  - Madhav Durbha (PhD, 1998)
  - Steven Philbrick (MS, 1998)
  - Kenneth Jeffers (MS, 1999)
  - Douglas Riemer (PhD, 2000)
  - Michael Anthony Membrino (PhD, 2002)
  - Nelliann Perez-Garcia (MS, 2003; PhD, 2006)
  - Chenchen Qiu (PhD, 2003)
  - Kerry N. Allahar (PhD, 2003)

- Pavan Kumar Shukla (PhD, 2004)
- James Patrick McKinney (MS, 2006)
- Vicky Mei-Wen Huang (PhD, 2007)

- Gary George Trost (PhD, 1983)
- Timothy Kent Risch (MS, 1983)
- Alan Kent Hauser (MS, 1984; PhD, 1989)
- Philip Paul Russell (PhD, 1984)
- **Michael John Matlosz (PhD, 1985), INPL-ENSIC, Nancy-Université**
- Susan Dale Thompson (PhD, 1985)
- Dawn Marie Bernardi (PhD, 1986)
- Victoria Ann Edwards (PhD, 1986)
- Suresh Chand Jain (PhD, 1987)
- Chrystalla C. Haili (MS, 1987)
- Gregg M. Sisler (MS, 1987)
- Andrew A. Mason (MS, 1988)
- **Alan C. West (PhD, 1989), Columbia University**
  - Benoit DeBecker (PhD, 1995)
  - Roberto Vidal (PhD, 1995)
  - Taekhoon Kim (PhD, 1996)
  - J. Deliang Yang, (PhD, 1997)
  - Chin-Chang Cheng (PhD, 1998)
  - Brett C. Baker (PhD, 1998)
  - James J. Kelly (PhD, 1998)
  - **Scott A. Calabrese Barton (PhD, 1999), Michigan State University**
    - Bing Zhu (MS, 2003)
    - Yuhao Sun (PhD, 2006)
    - Nicolas Hudak (PhD, 2007)
    - Joshua Gallaway (PhD, 2007)
  - Radek Chalupa (PhD, 2001)
  - Premratn Taephaisitphongse (PhD, 2002)
  - Zhongliang Tang (PhD, 2003)
  - Jong-Min Lee (PhD, 2003)
  - Min Zheng (PhD, 2005)
  - Mark Willey (PhD, 2007)
  - **Robert G. Bozic (PhD, 2008), US Military Academy**
  - Jennifer L. Wade (PhD, 2008)
- Paul Mark Shain (PhD, 1990)
- Anthony Joseph Grabowski (MS, 1990)
- Mei-Hui Wang (MS, 1992)
- **Thomas F. Fuller (PhD, 1992), Georgia Institute of Technology**
  - Wu Bi (PhD, 2008)
- **Bavanethan Pillay (MS, 1992; PhD, 1996), University of Natal**
- Vincent S. Battaglia (PhD, 1993)
- Douglas John Eames (MS, 1994)
- Benjamin Mark Rush (MS, 1994)
- Carolyn Renee Pals (MS, 1994)
- C. Marc Doyle (PhD, 1995)
- Blaine Kermit Paxton (MS, 1995)
- Chung-Pong Lau (MS, 1996)

- Gerhard Walter Matzen (PhD, 1997)
- Elizabeth Nicole Swayne (MS, 1997)
- Kathryn Podolske Ta (PhD, 1997)
- Craig Michael Gates (MS, 1997)
- Edward K. Yeh (MS, 1998)
- **Jeremy Patrick Meyers (PhD, 1998), University of Texas-Austin**
- Robert Mason Darling (PhD, 1998)
- Christian Georg Fellner (MS, 1998)
- Darryl Wayne Dunn (MS, 1999)
- Divesh Bhatt (MS, 2000; PhD, 2004)
- Robert Donald Villwock (PhD, 2000)
- Javit Ahmed Drake (PhD, 2000)
- Christian Bogatu (BS, 2000)
- Hooman Hafezi (PhD, 2002)
- Karen Elizabeth Thomas (PhD, 2002)
- **Heather Darya Yaros (PhD, 2002), Skyline College – San Bruno**
- **Dean Richard Wheeler (PhD, 2002), Brigham Young University**
  - Clint Guymon (PhD, 2006)
  - David Stephenson (MS, 2008)
- **Charles Monroe (PhD, 2004), University of Michigan**
- Adam Zev Weber (PhD, 2004)
- Jake Christensen (PhD, 2005)
- Sarah Stewart (PhD, 2007)
- Jeremy Couts (MS, 2007)
- Ryan Balliet (MS, 2007)

TABLE I: LIST OF THESES/DISSERTATIONS DIRECTED BY PROFESSOR JOHN NEWMAN AT UC-BERKELEY

#	Author	Thesis/Dissertation	Current Address
1	Thomas G. Atkins	*Water Tunnel with Moving Walls*. M. S. Thesis. June, 1965.	Founder, Right Seat Software, Inc., Golden, CO 80401-1118
2	Limin Hsueh	*Mass Transfer and Polarization at a Rotating Disk Electrode*. M. S. Thesis. January, 1966. *Diffusion and Migration in Electrochemical Systems.* Dissertation. December, 1968.	Senior Research Engineer, R&D, TRW Foundation, Fullerton, CA 92833
3	Ping Huei Sih	*Numerical Computation of Flow past Obstacles.* M. S. Thesis. January, 1966. *Mass Transfer to the Rear of an Object at Low Reynolds Number Flow.* Dissertation. May, 1971.	Retired from Stauffer Chemical Company
4	Marvin Edward McDonald	*Numerical Calculation for the Steady Laminar Flow past a Circular Cylinder.* M. S. Thesis. September, 1966.	[a]Research Manager, Dow Chemical Company, Midland, MI 48674
5	Paul Milios	*A Theoretical Analysis of the Moving Boundary Measurement of Transference Numbers.* M. S. Thesis. September, 1967.	Senior Process Engineer, El Paso Natural Gas, El Paso, TX 79978
6	Thomas W. Chapman	*The Transport Properties of Concentrated Electrolytic Solutions.* Dissertation. November, 1967.	Retired Professor of Chemical Engineering, University of Wisconsin, Madison, WI 53706 Program Director, National Science Foundation, Washington, DC
7	Vinay Marathe	*Current Distribution on a Rotating Disk Electrode.* M. S. Thesis. June, 1968.	-
8	Kemal Nisancioglu	*Diffusion in Concentrated Electrolytic Solutions.* M. S. Thesis. January, 1970. *Current Distribution and Mass Transfer in Rotating Electrode*	Professor of Applied Electrochemistry, Norwegian University of Science and

		Systems. Dissertation. September, 1973.	Technology, Trondheim, Norway
9	Kong-Heong Tan	*Moving-Boundary Measurements of Transference Numbers.* M. S. Thesis. March, 1970.	Chairman, Taiwan Water Treatment Company, Taiwan
10	Nader Vahdat	*Corrosion of Iron Rotating Disk.* M. S. Thesis. June, 1972.	Professor and Head, Department of Chemical Engineering, Tuskegee University, Tuskegee, AL 36088
11	Harry Hung-Kwan Yip	*Mass Transfer Coefficient in Packed Beds at Low Reynolds Numbers.* M. S. Thesis. June, 1973.	Manager, Process Applications, General Atomics Company, San Diego, CA 92138
12	Robert Victor Homsy	*Mass Transfer to a Plane below a Rotating Disk.* Dissertation. March, 1974.	Analyst/Chemical Engineer, Lawrence Livermore National Laboratory, Livermore, CA 94550
13	Thomas James Edwards	*Thermodynamics of Aqueous Solutions Containing One or More Volatile Weak Electrolytes.* M. S. Thesis. June, 1974. *Vapor-Liquid Equilibria in Multicomponent Aqueous Solutions of Volatile Electrolytes.* Dissertation. October, 1977.	Senior Manager, PSG Engineer Technology, Air Products and Chemicals, Allentown, PA 18105
14	Charles Milton Mohr, Jr.	*Mass Transfer in Rotating Electrode Systems.* Dissertation. October, 1975.	Consulting Engineer, Process Engineering, Idaho National Engineer Laboratory, Idaho Falls, ID 83415
15	Joseph John Miksis, Jr	*Primary Resistances for Ring-Disk Electrodes.* M. S. Thesis. November, 1975.	Construction Manager, Chevron, Inc., Surrey, United Kingdom
16	Peter Willem Appel	*Electrochemical Systems: Impedance of a Rotating Disk and Mass Transfer in Packed Beds.* Dissertation. May, 1976.	Professor of Chemical Technology, Delft University of Technology, Delft, The Netherlands Section Head, Unilever Research, Rotterdam, The Netherlands

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17	Ralph Edward White	*Simultaneous Reactions on a Rotating-Disk Electrode.* Dissertation. March, 1977.	Professor of Chemical Engineering, University of South Carolina, Columbia, SC 29208
18	Bruce Abbot Gordon	*Corrosion of Iron-Base Alloys by Coal Charat 871° and 982°C.* M. S. Thesis. April, 1978.	[b]Staff Engineer, Project Associates Inc., Metairie, LA 70002
19	Peter S. Fedkiw	*Mass Transfer Controlled Reactions in Packed Bedsat Low Reynolds Numbers.* Dissertation. December, 1978.	Professor of Chemical Engineering, North Carolina State University, Raleigh, NC 27695
20	Thomas Friedrich Wilhelm Foerster	*The Effect of Coal Char on the Corrosion of 304 SS.* M. S. Thesis. June, 1979.	Euro-Log USA
21	James Arthur Trainham III	*Flow-Through Porous Electrodes.* Dissertation. August, 1979.	Vice President – Science & Technology, PPG Industries, Pittsburgh, PA 15272
22	Richard Pollard	*Mathematical Modeling of the Lithium-Aluminum, Iron Sulfide Battery.* Dissertation. December, 1979.	Shell Oil Company, Houston, TX
23	Clarence Garlan Law, Jr.	*Corrosion of Iron.* Dissertation. November, 1980.	DuPont Inc., Newark, DE
24	Peter Eugene Pierini	*A Study of Ring and Ring-Disk Electrodes.* Dissertation. May, 1981.	The Dow Chemical Company, Walnut Creek, CA 94598
25	Ellen Marie Pawlikowski	*Vapor-Liquid Equilibria for Volatile, Weak Electrolytes in Aqueous Solutions.* Dissertation. November, 1981.	Brigadier General and Director, US Air Force, Chantilly, VA 20151
26	Mark Edward Orazem	*Mathematical Modeling and Optimization of Liquid-Junction Photovoltaic Cells.* Dissertation. June, 1983.	Professor of Chemical Engineering, University of Florida, Gainesville, FL 32611
27	Gary George Trost	*Applications of Porous Electrodes to Metal-Ion Removal and the Design of Battery Systems.* Dissertation. September, 1983.	Research Engineer, Raychem Corporation, Menlo Park, CA 94025
28	Timothy Kent Risch	*The Transport Properties of Sodium Poly- sulfide Melts and a*	Senior Member, Technical Staff,

		Theoretical Comparison of Flow-Through and Flow-By Porous Electrodes at the Limiting Current. M. S. Thesis. December, 1983.	Aerotherm Corporation, Mountain View, CA 94043
29	Alan Kent Hauser	*The Corrosion of a Zinc Rotating Disk in One Molar Hydrochloric Acid.* M. S. Thesis. April, 1984. *Steady-State and Impedance Analyses of Electrochemical Kinetics and Mass Transfer.* Dissertation. April, 1989.	Motorola Inc., Deerfield, IL
30	Philip Paul Russell	*Corrosion of Iron: The Active-Passive Transition and Sustained Electrochemical Oscillations.* Dissertation. February, 1984.	Director, Technology Application, Weyerhaeuser Company, Federal Way, Washington, 98001
31	Michael John Matlosz	*Experimental Methods and Software Tools for the Analysis of Electrochemical Systems.* Dissertation. March, 1985.	Professor and Director, ENSIC-INPL, Ecole Nationale Supérieure des Industries Chimiques de Nancy, France
32	Susan Dale Thompson	*Mass Transport in Sodium Polysulfide Melts.* M. S. Thesis. September, 1985.	Project Leader, Dow Chemical Company, San Jose, CA-
33	Dawn Marie Bernardi	*Mathematical Modeling of Lithium (alloy), Iron Sulfide Cells and the Electrochemical Precipitation of Nickel Hydroxide.* Dissertation. February, 1986.	Ford Motor Company, Lansing, MI 48933
34	Victoria Ann Edwards	*Design of Thin-Gap Channel Flow Cells.* Dissertation. July, 1986.	Corning Inc. Foundation-
35	Suresh Chand Jain	*Kinetics of Sphalerite Activation.* Dissertation. April, 1987.	-
36	Chrystalla C. Haili	*The Corrosion of Iron Rotating Hemispheres in 1 M Sulfuric Acid: An Electrochemical Impedance Study.* M. S. Thesis. June, 1987.	-
37	Gregg M. Sisler	*Adsorption of Dilute-Aqueous Zinc Ions in the Electrical Double Layer of a Porous-Carbon Electrode.* M. S. Thesis. December, 1987.	-Process Engineer, E. I. DuPont Nemours & Company, Newark, DE
38	Andrew A. Mason	*Modeling and Optimization of Li-Alloy/Metal-Sulfide Molten Salt Batteries.* M. S. Thesis. September, 1988.	Process Control Engineer, Setpoint Incorporated

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39	Alan C. West	*Effects of Non-uniform Potential and Current Distributions in Electrochemical Systems.* Dissertation. December, 1989.	Professor and Chair of Chemical Engineering, Columbia University, New York, NY 10027
40	Paul Mark Shain	*Cyclic Voltammetry at a Rotating Disk, Electroreduction of Nitrate in Acidic Nickel Solutions, and Frequency-Response Analysis of Porous Electrodes.* Dissertation. June, 1990.	Senior Process Engineer, Chevron Energy Technology Company, TX-
41	Anthony Joseph Grabowski	*Current and Potential Distributions on a Cylinder Electrode.* M. S. Thesis. July, 1990.	[c]Engineer, Advanced Micro Devices Inc., Sunnyvale, CA 94088.
42	Mei-Hui Wang	*The Electrical Conductivity of Sodium Polysulfide Melts.* M. S. Thesis. June, 1992.	-
43	Thomas F. Fuller	*Solid-polymer-electrolyte Fuel Cells.* Dissertation. July, 1992.	Professor of Chemical Engineering, Georgia Institute of Technology, Atlanta, GA 30332
44	Bavanethan Pillay	*Development and Application of the Quasi-potential Transformation.* M. S. Thesis. August, 1992. LBL-32728. *Design of Electrochemical Capacitors for Energy Storage.* Dissertation, July, 1996.	Sastech R&D, Sasol Limited, Johannesburg 2196, South Africa
45	Vincent S. Battaglia	*Current-Potential Characteristics of Electrochemical Systems.* Dissertation. July, 1993.	Program Manager, Lawrence Berkeley National Laboratory, Berkeley, CA 94720
46	Douglas John Eames	*Production of Chlorine from Anhydrous Hydrogen Chloride in a Solid-Polymer Electrolyte Cell.* M. S. Thesis. January, 1994.	Director, Tokyo Cyber Clinic, Japan
47	Benjamin Mark Rush	Potentiostatic Current Oscillations in the Iron/Sulfuric Acid System. M. S. Thesis, May, 1994.	Therasense, Abbot Diabetes Care Inc., Alameda, CA 94502
48	Carolyn Renee Pals	*Thermal Modeling of the Lithium/Polymer Battery.* M. S. Thesis, September, 1994.	Development Engineer, Urosurge Inc., 2660 Crosspark Road, Coralville, IA 52241
49	C. Marc Doyle	*Design and Simulation of Lithium Rechargeable Batteries.*	Asia Pacific Regional Director,

		Dissertation, August, 1995.	DuPont Microcircuit Materials, Research Triangle Park, NC 27709
50	Blaine Kermit Paxton	*Mathematical Modeling of the Nickel/Metal Hydride Battery System.* M. S. Thesis, September, 1995.	MBA Polymers, Richmond, CA 94804
51	Chung-Pong Lau	*Determination of Transference Numbers using the Galvanostatic-Polarization Method.* M. S. Thesis, October, 1996.	-
52	Gerhard Walter Matzen	*Effect of Microscale Protrusions on Local Fluid Flow and Mass Transport in the Presence of Forced Convection.* Dissertation, January, 1997.	Programmer/Analyst, OSI Software, San Leandro, CA 94577
53	Elizabeth Nicole Swayne	*Simultaneous Measurements of Conductance, Disjoining Pressure, and Thickness for Single Foam Films.* M. S. Thesis, February, 1997.	[d]Clorox Technical Center, 7200 Johnson Drive, Pleasanton CA 94588
54	Kathryn Podolske Ta	*Solid-State Diffusion-Coefficient Measurement and Modeling of Intercalation Materials.* Dissertation, May, 1997.	Director, Process Module Group, Applied Materials, Santa Clara, CA 95054
55	Craig Michael Gates	*Equilibrium and Diffusion Measurements of Methanol and Water in a Perfluorosulfonic Acid Membrane.* M. S. Thesis, December, 1997.	Senior Engineer, Hewlett Packard, OR 97330
56	Edward K. Yeh	*Equilibrium Configurations of Liquid Droplets on Solid Surfaces under the Influence of Thin-Film Forces.* M. S. Thesis, September, 1998.	R&D Process Engineer (Integration), Numonyx, Santa Clara, CA 95054
57	Jeremy Patrick Meyers	*Simulation and Analysis of the Direct Methanol Fuel Cell.* Dissertation, December, 1998.	Assistant Professor of Materials Science and Engineering, University of Texas, Austin, TX 78712
58	Robert Mason Darling	*Lithium Manganese Oxide Spinel Electrodes.* Dissertation, December, 1998.	Fellow, UTC Power, South Windsor, CT 06074
59	Christian Georg Fellner	*High-Power Batteries for Use in Hybrid Vehicles.* M. S. Thesis, December, 1998.	Energy Strategies Group, EPA, Washington, DC 20460

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60	Darryl Wayne Dunn	*Modeling of Supercapacitors.* M.S. Thesis, February, 1999.	R&D Finance Manager, Celera Diagnostic, Alameda, CA 94501
61	Divesh Bhatt	*Influence of Deformation on (Drop-Bubble)-Solid Equilibrium Surface Forces.* M. S. Thesis, June, 2000. *Molecular Simulation of Disjoining Pressures.* Dissertation, 2004.	Research Associate, Computational Biology, University of Pittsburgh Medical School, Pittsburgh, PA 15260
62	Robert Donald Villwock	*Recovery of Chlorine from Waste Anhydrous Chloride by Means of an Electrochemical Membrane Reactor.* Dissertation, August, 2000.	Director of R&D, Mobius Technologies, Lincoln, CA 95648
63	Javit Ahmed Drake	*Numerical Simulation of a Simons Gas-Liquid Electrochemical Flow Reactor: Cell Profiles, Multiple Steady States, and Transient Linear Stability.* Dissertation, October, 2000.	Proctor & Gamble, Needham, MA 02492
64	Christian Bogatu	*Entropy of Lithium Ions in Insertion Electrodes.* Studienarbeit, December, 2000.	Consultant, McKinsey & Owner, Kirsen Technology Corporation, Berlin, Germany.
65	Hooman Hafezi	*Characterization of Transport Phenomena in Polymer Electrolyte Systems.* Dissertation, May, 2002.	Scientist, Proteus Biomedical Inc., Redwood City, CA 94065
66	Karen Elizabeth Thomas	*Lithium-Ion Batteries: Thermal and Interfacial Phenomena.* Dissertation, May, 2002.	A123 Systems, Hopkinton, MA 01748
67	Heather Darya Yaros	*Evaluation of Derjaguin, Landau, Verwey, and Overbeck (DLVO) Theory with Disjoining-Pressure and Film-Conductance Measurements of Surfactant Stabilized Free Foam Films.* Dissertation, May, 2002.	Instructor - Chemistry, Skyline College, San Bruno, CA 94066
68	Dean Richard Wheeler	*Molecular Simulation of Diffusion in Electrolytes.* Dissertation, December, 2002.	Assistant Professor of Chemical Engineering, Brigham Young University, Provo, UT 84602
69	Charles Monroe	*Dendrite Initiation and Growth in Lithium/Polymer Systems.* Dissertation, September, 2004.	Assistant Professor of Chemical Engineering, University of Michigan, Ann Arbor, MI 48109
70	Adam Zev Weber	*Modeling Water Management in Polymer-Electrolyte Fuel Cells.*	Staff Scientist, Lawrence

		Dissertation, October, 2004.	Berkeley National Laboratory, Berkeley, CA 94720
71	Jake Christensen	*Failure Mechanisms in Lithium-ion Batteries.* Dissertation, December, 2005.	Engineer, Robert Bosch LLC, Palo Alto, CA 94304
72	Sarah Stewart	*Determination of Transport Properties and Optimization of Lithium□Ion Batteries.* Dissertation, December, 2007.	Engineer, Exponent Failure Analysis Associates, Menlo Park, CA 94025
73	Jeremy Couts	*Effects of Internal Cell Resistance and Constant Open-circuit Potential on the Effective Capacity of Hybrid Electric and Plug-in Hybrid Electric Vehicle Batteries*. M.S. Thesis, December, 2007	PhD Candidate, University of California, Berkeley, CA 94720
74	Ryan Balliet	*Water Movement in Non-operating Polymer-Electrolyte Membrane Fuel Cells at Temperatures Below 0 °C*	PhD Candidate, University of California, Berkeley, CA 94720

[a] – Verified on 04/11/2000
b – Verified on 08/20/1996
c – Verified on 06/09/1993
d – Verified on 05/15/2000

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Acknowledgements

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References

1. J. S. Newman and C. W. Tobias, *J. Electrochem. Soc.,* **109,** 1183 (1962).

2. W. R. Parrish and J. Newman, *J. Electrochem. Soc.*, **116,** 169 (1969).

3. Professor Nader Vahdat obtained his PhD in Chemical Engineering from the University of Manchester, England.

4. Professor John Van Zee obtained his bachelor's degree in chemical engineering from the University of California at Berkeley in 1975. His research director was Professor John Newman.

5. Dr. Venkat Srinivasan was a postdoctoral student of Professor Newman from 2002-2003.