November 15, 2017

Dr. Ettigounder Ponnusamy
Fellow, Green Chemistry
545 S. Ewing
St. Louis, Missouri 63021
USA

Selection Committee
Young Scientist Award
Annual Global Experts Meet On
Green Chemistry and Engineering
Tokyo, Japan

Dear Selection Committee,

It is with great pleasure that I recommend Mr. Palaniraja Subramaniam for young scientist award. I know Mr. Palaniraja for the past 10 years and he is working in our Bangalore office since 2006. He joined Sigma-Aldrich as a Chemist after completing his Master's in Chemistry with distinction. He is very passionate towards green chemistry, sustainability and re-engineered many products employing the 12 principles of green chemistry. Palaniraja has been an active member of Merck's World-wide Green Chemistry Team and an important contributor towards our corporate sustainability goals. He is one of the finest colleagues in our organization, an outstanding researcher and innovative scientist who go above and beyond to deliver results.

He has a strong organic chemistry background and very passionate about research with emphasis in green chemistry. Even though he started working after his Master's degree, he continued his passion for research in his day today activities and re-engineered many old chemistry products from our portfolio with alignment to green chemistry principles. He also enrolled in a part-time Ph.D program in Bharathiar University in India and continued his passion to become a doctorate. Since he is continuing his doctoral research as part-time (while working full time in the company), he works hard in the evenings and weekends to complete his research work. This illustrates his high level of motivation and passion towards his research.

His hypothesis of using intramolecular hydrogen bonding as a stereo selective control tool for the stereo selective synthesis without using any transition metal catalyst is really appreciated by scientists in the field. He published part of his doctoral research in the Green Chemistry Journal (impact factor: 9.125) from Royal Society of Chemistry (Green Chem., **2017**, 19, 2541–25450).

Palaniraja has always displayed a high degree of integrity, responsibility and ambition and he is a continuous learner to make things better.

In Short, Mr. Palaniraja is a deserving candidate for the young scientist award. I am happy to give him my wholehearted recommendation and support for his nomination. If you have any questions about Palaniraja's candidacy, please feel free to contact me at ettigounder.ponnusamy@sial.com or 1-636 236 4475 (Cell).

Sincerely,

Dr. Ettigounder Ponnusamy

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.