



PETITION: To Issue Commemorative Stamp Featuring the Contributions of Chemistry in the United States on the Occasion of the 2011 International Year of Chemistry

WHEREAS, the following **PETITIONERS**, led by the American Chemical Society, the world's largest scientific society with more than 154,000 members, respectfully present this petition to the Citizens' Stamp Advisory Committee and Postmaster General, urging the United States Postal Service to issue a commemorative stamp in honor of the contributions of chemistry in the United States to (a) the production of medicines, fuels, metals and virtually all other manufactured products; (b) address challenges such as global climate change, in providing sustainable sources of clean water, food and energy and in maintaining a wholesome environment for the well-being of all people; (c) underscore the need for international scientific collaboration and educational exchange in chemical sciences and engineering; and (d) in honor of the 2011 International Year of Chemistry.

Basis for petition:

1. All known matter – gas, liquid and, solid– is composed of chemical elements or compounds made from those elements. Chemistry is the study of these elements and compounds, their interactions and changes.
2. Recognized as the central science because of its role in connecting the physical sciences with the life sciences and applied sciences, chemistry is fundamental to humanity's understanding of the world and the cosmos. Deep knowledge of chemical science is essential for creating new materials and sustainable sources of food and energy, and medicine. The composition of molecules and their changes are central to virtually all manufactured and extracted products.
3. Chemistry, in the U.S. and worldwide, plays a key role in finding solutions to far-reaching societal challenges such as providing sufficient energy, protecting the environment, assuring the availability of safe food and water for all people, and improving healthcare.
4. Innovations in chemistry, in the U.S. and worldwide, contribute to the conversion, storage and efficient use of energy and are key to identifying new technologies to address our energy challenges. Beyond ethanol made from corn, chemists are exploring opportunities to make biofuels such as ethanol from non-edible parts of plants and from non-food plant materials such as switch grass. Chemists are also investigating solar panels that are more efficient at harnessing the sun's energy and self-contained solar energy systems in cars that minimize use of fossil fuels.
5. Chemistry touches every aspect of water purification, from basic water chemistry to the interactions of the dissolved particles in water with materials and systems. For example, chemists have created small packets of powdered chemicals—called PUR[®]—that can be added to impure, non-potable water to kill disease-causing bacteria and viruses and to remove dirt and heavy metals, such as lead. In the face of national emergencies that compromise our potable water supply, such as tornadoes, hurricanes, or floods, the applications of chemical innovations such as PUR[®] are life-changing and life-saving. Anticipating our future water needs, chemists are exploring the use of carbon nanotubes in harnessing the seas for potable water. These tiny molecules may hold the key to developing a simple, easy, inexpensive process for water desalination.
6. Chemistry has contributed to increases in the U.S.'s food supply and to making that food safer, cheaper, and more available. It was a chemist who learned how to transform nitrogen in the air to produce the fertilizers which have dramatically increased our food supply. Chemists have developed irradiation processes to kill dangerous microbes in food and are now working on food wraps that have built-in disinfectants. By studying the chemical properties of food, chemists are discovering why certain foods promote good health. This may lead to new ways to improve the nutritional value of many foods, worldwide.
7. Chemistry developed the antibiotics and vaccines that helped increase U.S. life expectancy by 29 years during the 20th century. Several decades ago, cancer frequently led to premature death; now millions of

American Chemical Society

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www.acs.org/international

people are survivors due to the improved treatments and screening techniques that chemistry helped to create. Twenty years ago, AIDS was almost always fatal; today, many HIV-positive people take a single pill containing three drugs and are more likely to die of old age than of AIDS. Chemists are currently working on a new generation of drugs to correct cellular disorders responsible for Alzheimer's and genetic-based diseases and on new strategies to attack chemotherapy-resistant cancer cells.

8. In addition to its positive impact on the aforementioned societal challenges, chemistry affects every aspect of modern life in the U.S. Chemists developed synthetic laundry detergents, fabrics such as rayon and nylon, and the plastics which are used in countless applications in the home, cars, and recreation. The televisions we watch - from LCD and Plasma screens to the materials that house the screens - are the work of chemists. The plastics and rubber - ,and other synthetic materials - used in sporting equipment make participation safer and modern innovations in golf clubs and tennis rackets, such as titanium and carbon fibers were developed in the laboratories of chemists.
9. Chemistry's contributions to American life and science extend to our nation's competitiveness. The U.S. chemical industry employs more than 825,000 people, and the U.S. chemical industry is the nation's largest export sector, larger than either agriculture or aircraft/aerospace. The U.S. accounted for 11%, \$154 billion, of world exports of chemical worth \$1.38 trillion in 2007.
10. In recognition of chemistry's contributions to the well-being of humankind, developing human knowledge, advancing economic progress and fostering a wholesome environment, the 63rd General Assembly of the United Nations has proclaimed 2011 as International Year of Chemistry (IYC). Chemists in the U.S. are organizing celebrations of IYC 2011 which will emphasize the importance of chemistry in helping to sustain the natural resource base for life.

NOW THEREFORE, WE RESPECTFULLY URGE ADOPTION OF THIS PETITION TO ISSUE A COMMEMORATIVE STAMP IN HONOR OF THE CONTRIBUTIONS OF CHEMISTRY IN THE UNITED STATES AND OF THE 2011 INTERNATIONAL YEAR OF CHEMISTRY.

PETITIONERS:

Signature	Printed name	Mailing Address
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Send to: ACS Celebrates IYC 2011, c/o American Chemical Society, Office of International Activities, 1155 16th Street, NW, Washington, DC 20036, USA or via fax to +202-872-6317. <http://www.acs.org/iyc2011>

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