

The Scheme of National Awards for Technology Innovation in Petrochemical and downstream Plastic Processing Industry.

1. Petrochemicals comprise of plastics and most of other chemicals as downstream hydrocarbons derived from crude oil and natural gas. These hydrocarbons are a valuable resource and constitute vital raw-materials in industry. The value added Petrochemical products all along the value chain cater to the needs of textiles and clothing, agriculture, packaging, infrastructure, healthcare, furniture, automobiles, information technology, power, electronics, telecommunications etc.
2. The Government of India announced the National Policy on petrochemicals in April 2007. The policy envisioned the following:
 - Development of value added, quality petrochemical products at globally competitive prices using eco-friendly processes and technologies.
 - Innovation of newer application and products with focus on sustainable development.
3. The vision is to be achieved through promotion of Research and Development and Human Resource Planning and Development. Towards furtherance of this objective, the policy envisaged institutionalization of National Awards for Technology Innovation in various fields of Petrochemicals and downstream plastic processing industry.

R&D Status & its prospects:

4. The level of R&D investments in Indian Chemical sector is low at around 0.3% of total sales. The areas for strengthening of R&D in Chemical Industry include improvements in manufacturing process for reduction in cost of production, application development to diversify demand, and new product development. Currently the expenditure on R&D in the Petrochemical sector is less than 1% of industry turnover. This needs to be increased in phases to 2 to 3%. India has

a highly trained manpower base. However, as per world industry estimates, inadequate R&D infrastructure is a constraint for attracting investment in innovation. Ultimately, India stands to lose out in the world of polymer and plastic market if low-cost-high-return programmes are not implemented by the government.

5. The future Research & Development vision of the Petrochemical industry needs to provide long term commitment to investment in R&D and strive for continuous innovation in terms of raw material usage, energy efficiency, process/operation improvement, technology forecasting and adoption of emerging technologies, in particular on recycling technologies and development of recycled products etc. It is also felt that new process technologies for high performance polymers (green processes etc.), thrust on new platforms, bio-/nano sciences as enablers for advanced polymeric materials are the need of the hour. At the same time R&D thrust in development of moulds, dies and tools cannot be over emphasized. Collaborative investment through Public Private Partnership (PPP) mode in technology development by Government, academic Institutions and Industry could push the agenda for R&D in this sector, which will have a long term impact on the Industry.

NEED FOR INNOVATION

6. The Petrochemical sector is a key sector of the global (and Indian) economy. At the same time there are public apprehensions about the adverse impact of plastics on environment and health. This concern needs to be addressed by being at the forefront of technology development in this sector as also to enhance the pace of innovation in this field. This on the one hand, would create pressures that would motivate companies to innovate and on the other hand, the environmental concerns will guide sustainable product and process interventions.
7. With the above mentioned objectives, Government of India, Department of Chemicals & Petrochemicals has decided to set up an Award Scheme to incentivize meritorious innovations and inventions in the field of plastics/elastomers/synthetic fiber/surfactants & intermediates / new emerging areas.

8. This innovation award scheme will motivate the inventors to carry out innovative Research & Development in the areas of petrochemicals industry, which in turn will improve performance / quality of the existing product. This award will be on outstanding contribution in R&D leading to better energy consumption, better plastic waste management, increase in product life cycle, development of innovative new products, quality standards, recycling and other emerging areas.

These awards are also intended to enhance innovative capacities to a level of international recognition. The ultimate objective is to develop and maintain the petrochemical industry as a globally competitive industry using eco-friendly processes & technologies.

9. Copies of the proposed awards and the categories of awards are enclosed in statements at **ANNEX-I & II respectively**.
10. This scheme will help improve the performance of the existing product and its quality leading to better acceptance and increase in demand of the product in the competitive market of polymer and plastic. This will benefit both small and medium enterprises as well as larger companies.
11. Applicant has to apply for award under any category/sub-category as per prescribed formats separately for Individual /Team, Industry and Academic Institution / R&D Institution. **(ANNEX-III)**

IMPLEMENTATION FRAMEWORK & OPERATIONAL MODALITIES

12. The entry applications for awards will be evaluated by a 'Standing Committee on Awards'. This committee will be headed by Additional Secretary/Joint Secretary of the administrative Ministry with representative Government Institutions/Research Laboratories/ Academic Institutions, National Level Industry Associations associated with petrochemical products and other

representatives from Government of India. The recommendation of this Standing Committee will be deliberated by Prize Award Committee, an 'Apex Body' headed by the Secretary of the Department of Chemicals & Petrochemicals, besides, Joint Secretary (PC) and Deputy Secretary/Director (PC) of the Department. The other members will be chosen from National level Institutes.

13. Central Institute of Plastics Engineering and Technology (CIPET), Corporate Office – Guindy, Chennai-600 032 has been entrusted with the work of processing of the applications, to which all applications may be addressed.

ANNEXURE -I**Financial Outlay for Awards Prize**

Sl.No	Award Category	Receipt of categories	Proposed award	Outlay (₹ in Lakhs)
1	Innovation in Polymeric Material	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
2	Innovation in Polymeric Products.	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
3	Innovation of Polymer processing	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
4	Innovation in Polymer Waste Management & recycling technology.	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
5	Innovation in Green polymeric materials & Products.	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
6	Polymers in agriculture and water conservation	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
7	Polymers in public Health care	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00
8	Research in the field of polymer science & technology (for researchers working in academic institute / research lab.)	Individual/ Team	Citation / Cash	2.00
		Industry	Shield / Citation	2.00
		Academic/R&D Institution	Shield / Citation	2.00

CATEGORIES OF NATIONAL AWARDS

1. Innovation in Polymeric Materials

- ❖ New Polymers, Blends & Alloys, filled materials, fibers, Polymer Composites and Nano composites, Smart Materials etc.,

2. Innovation in Polymeric Products

- ❖ New / creative product design
- ❖ Non conventional application / Replacement of conventional materials (eg. Metals, ceramics etc.).
- ❖ Modification of product design for performance improvements

3. Innovation of Polymer Processing Machinery & Equipments

- ❖ Development of new processing techniques.
- ❖ Modification of machinery for higher efficiency/productivity / Automation.
- ❖ Energy conservation, product quality improvement
- ❖ Improvement in moulds, dies and auxiliary equipments

4. Innovation in Polymer waste Management & Recycling Technology.

- ❖ Newer technology in plastic waste utilization into products/energy recovery.
- ❖ Recycling Technology.
- ❖ Plastic waste collection, segregation techniques.
- ❖ Product design for improved recyclability.

5. Innovation in Green Polymeric materials & Products.

- ❖ Biopolymers
- ❖ Biodegradable / compostable Polymers
- ❖ Time controlled degradation

- ❖ Green material filled polymers.
- ❖ Biodegradability evaluation techniques

6. Polymers in agriculture and water conservation.

- ❖ Water transportation, mulching, canal lining, Drip irrigation, Sprinkler system, Low Tunnels, Poly house etc.,
- ❖ Controlled release system for fertilizer, pesticides, micro nutrients, etc.,
- ❖ Innovative packaging for agriculture, floriculture and horticultural produce.
- ❖ Controlled permeability films & packaging for improved shelf life.
- ❖ Novel Usage of plastics for food security.

7. Polymers in Public Health care.

- ❖ Affordable / cost effective implants, implements and devices.
- ❖ New innovative products for medical application.
- ❖ Polymer based new drugs delivery system.
- ❖ Polymer body implants
- ❖ Drinking water storage& transportation.
- ❖ Polymer membrane for water purification /Desalination.
- ❖ Devices for waste water, drainage, sewage treatment system.

8. Research in the field of polymer science & technology (for researchers working in academic institute /research lab.)

- ❖ Individual / Team of researchers in R & D Institutions & laboratories.
- ❖ Original research work in polymeric materials processing etc. leading to proto type development & future industrial applications.

APPLICATION FORM FOR AWARD FOR

INDIVIDUAL / TEAM**Rules & Regulations:**

- (i) Incomplete applications are liable to be rejected
- (ii) Soft copy of the proposal shall be provided in CD.
- (iii) Innovation should not be more than five years old

Application for **INDIVIDUAL** **TEAM**

(Put \checkmark as applicable)

1. **Title of Innovation** :

2. **Category of Award** :

(Put \checkmark as applicable)

Sl. No.	Particulars	Put \checkmark as applicable
1	Innovation in Polymeric Materials	
2	Innovation in Polymeric Products.	
3	Innovation of Polymer processing Machinery & Equipments.	
4	Innovation in Polymer Waste Management & recycling technology.	
5	Innovation in Green Polymeric Materials & Products.	
6	Polymers in agriculture and water conservation	
7	Polymers in public Health care	
8	Research in the field of polymer science & technology (for researchers working in academic institute / research lab.)	

3. Particulars of Individual/Team

No.	Name	Academic Qualification	Name of the Organization	Designation
1				
2				

4. Stage of Development

(Put \checkmark as applicable)

- I. Lab Scale (iv) Working Prototype
- II. Pilot Plan (v) Test Marketing
- III. Full Scale Operation

5. **Detailed Technical Description** (giving its constructional and working mechanism along with photographs of the device/plant)

6. **Principal Involved**

7. **Originality / Novelty of Innovation**

8. **Advantages over known Alternatives**

9. **Status of Commercialization**

10. **Status of Publication/ Patent in India and Abroad**

11. **Test report to substantiate claims from some Govt. recognized Test Agency**

12. **Users' Report / Peer Review**

13. **Details of Applicants' Employment**

- (i) **Self-employed**
(ii) **Employed in an Organization**

14. Details of Employer

Name and Designation of Head of the Organization	Name and complete address of the Organization	Phone No./ Mobile No.	E-mail Address

15. Signature of Applicant(s)

Name	Signature (s)

Remark of Employer

- (i) The innovation is not an assignment of employment of the applicant(s)**
- (ii) The innovation is part of the assignment of employment of the applicant(s)**

UNDERTAKING

I / We have read and fully understood the terms and conditions & the eligibility criteria and fulfill the same. I/We also understand that mere fulfillment of eligibility criteria does not entitle me / us for the award. Further, the information provided by me / us is true and correct to the best of my / our knowledge and beliefs. If any information provided above is found incorrect/false application may be summarily rejected without giving any reason.

(Name & Signature of the Applicant(s) with date)

Signature of the Head with seal

The following guidelines may be adhered to while making an application:

1. Applicant has to apply for award under any category as per prescribed format.
2. The innovator(s) employed in any organization should forward his /her / their application through the Head of the Organization.
3. The maximum number of the applicants in a team in any particular Prize Award Application should not be more than five.
4. The innovation should either be an original product, process or an improvement on existing product or process so as to increase utility of the product or process by enhancing consumer advantages, accuracy, reliability, safety, product life, versatility, etc.
5. Mere theoretical hypothesis, innovation simply in the idea stage and perpetual motion machines are not eligible for consideration of an award.
6. These awards will be given only to the individual / team who contributed to the innovation, and not to an organization.
7. The awards are given to Indian Nationals only.
8. The innovation should not be older or patent granted earlier than five years, at the time of submitting the application.
9. The applicants may be required to show prototypes/working models to Prize Award Committee for demonstration, if necessary.
10. The prize award amount is normally distributed equally among the applicants of a team.
11. An application is liable to be rejected if it is not forwarded through proper channel or if any information therein is found to be incorrect.
12. The decision of Prize Award Committee on the proposals submitted for award will be final and no further correspondence shall be entertained.
13. The innovation may be referred to outside expert(s) working in Government organizations, research organizations, educational institutions and public sector organizations to evaluate the innovation. The name and opinion of these experts are kept strictly confidential.
14. In case, the applicant(s) are self-employed, it may kindly be clearly indicated in the application form.
15. Attach additional sheets wherever necessary along with proper heading.

APPLICATION FORM FOR AWARD FOR

INDUSTRY**Rules & Regulations:**

- (i) Incomplete applications are liable to be rejected
- (ii) Soft copy of the proposal shall be provided in CD.
- (iii) Innovation should not be more than five years old

1. **Title of Innovation** :

2. **Category of Award** :

(Put as applicable)

Sl. No.	Particulars	Put <input type="checkbox"/> as applicable
1	Innovation in Polymeric Materials	
2	Innovation in Polymeric Products.	
3	Innovation of Polymer processing Machinery & Equipments.	
4	Innovation in Polymer Waste Management & recycling technology.	
5	Innovation in Green polymeric materials & Products.	
6	Polymers in agriculture and water conservation	
7	Polymers in public Health care	
8	Research in the field of polymer science & technology (for researchers working in academic institute / research lab.)	

3. Name and address of the Industry (including Telephone, Fax Numbers and e-mail address)

Sr. No.	Name of the Industry	Complete address of the industry	Tele/Fax No./E-mail
1			

4. Stage of Development

(Put $\sqrt{\quad}$ as applicable)

- I. Lab Scale (iv) Working Prototype
- II. Pilot Plan (v) Test Marketing
- III. Full Scale Operation

5. Detailed Technical Description (giving its constructional and working mechanism along with photographs of the device/plant)

6. Principal Involved

7. Originality/ Novelty of Innovation

8. Advantages over known Alternatives

9. Status of Publication / Patent in India and Abroad

10. Test report to substantiate claims from some Govt. recognized Test Agency

11. Users' Report / Peer Review

12. Status of Commercialization

13. Employment Generated (Direct and Indirect)

14. Sales in Domestic Market (Price, Quantity, Period)

15. Exports (Price, Quantity, Period)

16. Self Appraisal by the applicant giving full justification for the award (Maximum in 200 words)

17. Details of Head of the Industry

Name and Designation of Head of the Industry	Name and complete address of the Industry	Phone No./ Mobile No.	E-mail Address

18. Details of the Industry (Enclose Annual Report for last two years)

Name of the Organization	Main Activities	Annual Turnover	Type of organization Prop./Partnership/Pvt. Ltd./Public Ltd. /Govt. Public/Sector / Autonomous

19. Signature of Applicant(s)

Name	Signature (s)

UNDERTAKING

I / We have read and fully understood the terms and conditions & the eligibility criteria and fulfill the same. I/We also understand that mere fulfillment of eligibility criteria does not entitle me / us for the award. Further, the information provided by me / us is true and correct to the best of my / our knowledge and beliefs. If any information provided above is found incorrect/false application may be summarily rejected without giving any reason.

(Name & Signature of the Applicant with date)

Signature of the Head & Seal of the Organization

The following guidelines may be adhered to while making an application:

1. Applicant has to apply for award under any category as per prescribed format.
2. The innovation should either be an original product, process or an improvement on existing product or process so as to increase utility of the product or process by enhancing consumer advantages, like reduction in cost, effort, weight, volume and improvement in performance, accuracy, safety, product life, versatility, etc. The innovation should have been successfully tried out in practice.
3. Mere theoretical hypothesis, innovation simply in the idea stage and perpetual motion machines are not eligible for consideration of an award.
4. These awards will be given only to the industries who have contributed to the innovation.
5. The awards are given to Indian industries only.
6. The innovation should not be older or patent granted earlier than five years, at the time of submitting the application.
7. The applicants may be required to show prototypes/working models to Prize Award Committee for demonstration, if necessary.
8. An application is liable to be rejected if any information therein is found to be incorrect.
9. The decision of Prize Award Committee on the proposals submitted for award will be final and no further correspondence shall be entertained.
10. The innovation may be referred to outside expert (s) working in Government organizations, research organizations, educational institutions and public sector organizations to evaluate the innovation. The name and opinion of these experts are kept strictly confidential.
11. The contribution of the innovation towards employment generation may also be provided.
12. Attach additional sheets wherever necessary along with the proper heading

APPLICATION FORM FOR AWARD FOR
ACADEMIC INSTITUTION / R & D INSTITUTION

Rules & Regulations:

- I. Incomplete applications are liable to be rejected
- II. Soft copy of the proposal shall be provided in CD.
- III. Innovation should not be more than five years old

1. **Title of Innovation** :

2. **Category of Award** :

(Put as applicable)

Sl. No.	Particulars	Put <input type="checkbox"/> as applicable
1	Innovation in Polymeric Materials	
2	Innovation in Polymeric Products.	
3	Innovation of Polymer processing Machinery & Equipments.	
4	Innovation in Polymer Waste Management & recycling technology.	
5	Innovation in Green polymeric materials & Products.	
6	Polymers in agriculture and water conservation	
7	Polymers in public Health care	
8	Research in the field of polymer science & technology (for researchers working in academic institute / research lab.)	

3. Name and address of the Academic Institution / R & D Institution (including Telephone, Fax Numbers and e-mail address)

Sr. No.	Name of the Institution	Complete address of the Institution	Tele/Fax No./E-mail

4. Stage of Development

(Put \checkmark as applicable)

- I. Lab Scale (iv) Working Prototype
- II. Pilot Plan (v) Test Marketing
- III. Full Scale Operation

5. Detailed Technical Description (giving its constructional and working mechanism along with photographs of the device/plant)

6. Principal Involved

7. Originality/ Novelty of Innovation

8. Advantages over known Alternatives

9. Status of Publication / Patent in India and Abroad

10. Test report to substantiate claims from some Govt. recognized Test Agency

11. Users' Report / Peer Review

12. Status of Commercialization

13. Self Appraisal by the applicant giving full justification for the award (Maximum 200 words)

14. Details of Head of the Institution

Name and Designation of Head of the Institution	Name and complete address of the Institution	Phone No./ Mobile No.	E-mail Address

15. Details of the Institution (Enclose Earlier Achievements for last two years)

Name of the Institution	Main Activities	Earlier Achievements	Type of Institution Prop. / Partnership / Pvt. Ltd. / Public Ltd. / Govt. Public / Sector/ Autonomous

16. Signature of Applicant

Name	Signature (s)

UNDERTAKING

I / We have read and fully understood the terms and conditions & the eligibility criteria and fulfill the same. I/We also understand that mere fulfillment of eligibility criteria does not entitle me / us for the award. Further, the information provided by me / us is true and correct to the best of my / our knowledge and beliefs. If any information provided above is found incorrect/false application may be summarily rejected without giving any reason.

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Signature of the Head & Seal of the Organization

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9. The decision of Prize Award Committee on the proposals submitted for award will be final and no further correspondence shall be entertained.
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