

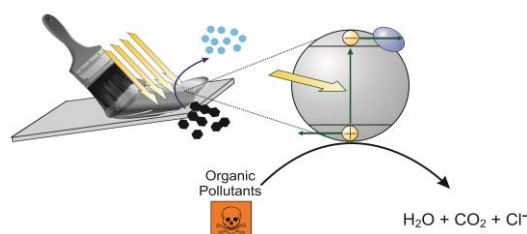
4G-PHOTO-CAT: Nano-Engineered Composites for Water Decontamination in Low-Cost Paintable Photoreactors

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The project 4G-PHOTO-CAT (Fourth Generation Photocatalysts) allies the expertise of 7 academic and 3 industrial partners from 5 EU countries (Germany, United Kingdom, Czech Republic, Poland, and Finland) and 2 ASEAN countries (Malaysia and Vietnam) for the development of a novel generation of low-cost nano-engineered photocatalysts for sunlight-driven water depollution. Through rational design of composites in which the solar light-absorbing semiconductors are coupled to nanostructured redox co-catalysts based on abundant elements, the recombination of photogenerated charges will be suppressed and the rate of photocatalytic reactions will be maximized. In order to achieve fabrication of optimal architectures, advanced chemical deposition techniques with a high degree of control over composition and morphology will be employed and further developed. Furthermore, novel protocols will be developed for the implementation of the photocatalysts into a liquid paint, allowing for the deposition of robust photoactive layers onto flat surfaces, without compromising the photoactivity of immobilized photocatalysts. Such paintable photoreactors are envisaged particularly as low-cost devices for detoxification of water from highly toxic persistent organic pollutants which represent a serious health issue in many remote rural areas of Vietnam and other countries.



Finally, 4G-PHOTO-CAT will lead to intensified collaboration between scientists and industry partners from EU and ASEAN countries.

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References

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