DESCRIPTION

Radiation Physics and Chemistry is a multidisciplinary journal that provides a medium for publication of substantial and original papers, reviews, and short communications which focus on research and developments involving ionizing radiation in radiation physics, radiation chemistry and radiation processing.

Radiation Physics and Chemistry aims to publish articles with significance to an international audience, containing substantial novelty and contributions to science. We expect that articles present new insight or hypothesis testing, that they focus on radiation effects or applications of ionizing radiation, provide uncertainties and statistical analysis where relevant, and present their findings in context with discussion of past and recent literature. The editors reserve the right to reject, with or without external review, articles which do not meet these criteria. This could include articles which are very similar to previous publications, except that target substrates, materials, analyzed sites or experimental methods have been changed.

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*Fundamental processes in radiation physics*
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- X-ray fluorescence
- Cherenkov effect
- Polarization
- Effects of periodic structures (Bragg diffraction, channelling, parametric x-radiation, etc)
- Mathematical methods in radiation physics, reference data

*Radiation sources and detectors*
- Accelerator and radionuclide spectra and other properties
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- Detector response functions
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Radiation Chemistry

• Ionizing radiation induced ionic and radical reactions
• Kinetics and mechanism of radiolysis reactions
• Pulse radiolysis technique and measurements
• Nanoparticle production by ionizing radiation
• Radiation induced chain reactions, polymerization
• Irradiation effects on polymers
• Dose and dose rate effects
• LET effects on chemical reactions
• Pollutant removal by ionizing radiation
• Computational models on radiation chemical reactions

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Radiation Processing

Radiation Sterilization
• Microbiology
• Toxicology
• Biocompatibility
• Validation

Food irradiation
• Microbiological quality
• Chemical effects
• Nutrition
• Detection induced radioactivity

Polymers
• Synthesis
• Polymerization
• Curing
• Grafting
• Crosslinking
• Degradation
• Composites

Environmental
• Effluent gas
• Waste water
• Water purification
• Toxin reduction
• Sludge
• Recycling of wastes

Radiation effects
• Semiconductors
• Gemstones
• Crystals
• Ceramics

Dosimetry and process control
• Dosimeter systems
• Analytical instrumentation
• Environmental influence
• Measurement uncertainty

Radiation sources and facilities for radiation processing
• Electron Accelerators
• Gamma and x-ray facilities
• Safety issues
• Transport of radioisotopes

AUDIENCE

Chemists and physicists working with ionizing radiation and its applications.

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A multidisciplinary journal linking science and industry

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