

XV Workshop & Summer School "Multiphase Flows"
13-15.06.2023
Gdańsk/Grabówko, Poland

| 13.06.2023 Tuesday | |
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| 9 ⁰⁰ -11 ³⁰ | Workshop registration (IMP PAN Gdańsk, room 115, 1 st floor) |
| 9 ³⁰ -9 ⁴⁰ | Workshop opening (J. Pozorski) |
| 9 ⁴⁰ -11 ¹⁰ | Summer School lectures (<i>Chairman: D. Kardaś</i>): <i>Particle transport in dispersed multi-phase flows: modelling and applications. Part I</i> (M. Sommerfeld) <i>Heat transfer at subcritical and supercritical conditions</i> (D. Mikielewicz) |
| 11 ¹⁰ -11 ³⁰ | coffee break |
| 11 ³⁰ -12 ¹⁵ | Summer School lectures (<i>Chairman: S. Polesek-Karczewska</i>): <i>Multiple-level modeling of multiphase flows</i> (M. Podowski) |
| 12 ³⁰ -13 ⁴⁵ | transfer to „Zajazd nad Stawem” (Grabówko) |
| 14 ⁰⁰ -14 ⁴⁵ | lunch |
| 15 ⁰⁰ -16 ⁰⁰ | regular session (20' per participant) - (<i>Chairman: M. Sommerfeld</i>) <i>Absorptive removal of CO₂ from process gases – selected issues based on ITPE experience</i> (S. Stelmach) <i>About differences between deterministic and statistical models of the interphase region</i> (T. Waclawczyk) <i>Eulerian-Lagrangian approach for simulation of reactive flow in granular media</i> (I. Wardach-Swięcicka) |
| 16 ⁰⁰ -16 ³⁰ | coffee break |
| 16 ³⁰ -17 ⁴⁵ | Summer School lectures (<i>Chairman: D. Mikielewicz</i>): <i>Heat and moisture transfer modeling in hygroscopic porous materials: selected cases</i> (45') (A. Łapka) <i>Numerical and experimental investigations on ammonia combustion. Part I</i> (30') (M.T. Lewandowski) |
| 19 ⁰⁰ -21 ⁰⁰ | evening meal (grill) |
| 14.06.2023 Wednesday | |
| 8 ⁰⁰ -9 ⁰⁰ | breakfast |
| 9 ¹⁵ -11 ¹⁵ | Summer School lectures (<i>Chairman: T. Wiśniewski</i>): <i>Particle transport in dispersed multi-phase flows: modelling and applications. Part II</i> (60') (M. Sommerfeld) <i>Atomization and spray drying</i> (60', online) (A. Pożarlik) |
| 11 ¹⁵ -11 ⁴⁵ | coffee break |
| 11 ⁴⁵ -12 ⁴⁵ | Summer School lectures (<i>Chairman: J. Mikielewicz</i>): <i>Recent developments in the modeling of forced-convection subcooled boiling</i> (60') (M. Podowski) |
| 13 ⁰⁰ -14 ⁰⁰ | lunch |
| 14 ¹⁵ -15 ⁰⁰ | Summer School lecture (<i>Chairman: M. Podowski</i>): <i>Numerical modelling and simulation of phase transitions in two-phase flows</i> (online) (B. Boersma) |
| 15 ⁰⁵ -16 ⁰⁰ | introduction to PhD poster session (4 min. each: 2-3 slides) - (<i>Chairman: R. Kobyłcki</i>) |
| 16 ⁰⁰ -17 ⁰⁰ | discussion at posters (drinks and cookies available) |
| 17 ⁰⁰ -17 ⁴⁵ | regular session (15' per participant) - (<i>Chairman: A. Błaszczuk</i>): <i>Control of the gas bubble departures in liquids</i> (P. Dzienis) <i>Summary of 4-E analyses of the negative CO₂ gas power plant burning syngas from sewage sludge gasification</i> (P. Ziółkowski) <i>Modelling of enthalpy distribution during phase transition in latent heat thermal energy storage</i> (R. Kwidziński) |
| 18 ³⁰ -21 ⁰⁰ | the Workshop dinner |
| 21 ⁰⁰ -22 ⁰⁰ | young music concert |
| 22 ⁰⁰ -23 ⁵⁹ | social evening with refreshments |
| 15.06.2023 Thursday | |
| 8 ⁰⁰ -9 ⁰⁰ | breakfast |
| 9 ¹⁵ -10 ⁰⁰ | Summer School lecture (<i>Chairman: S. Stelmach</i>): |

XV Multiphase Workshop and Summer School: Programme

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| | <i>Numerical and experimental investigations on ammonia combustion. Part II (45')</i> (M.T. Lewandowski) |
| 10 ⁰⁰ -11 ⁰⁰ | introduction to regular poster session (5 min. each, language: English or Polish) (Chairman: J. Cieśliński) |
| 11 ⁰⁰ -11 ⁴⁵ | coffee break and discussion at the posters |
| 11 ⁴⁵ -12 ⁰⁰ | round table discussion (J. Pozorski, D. Kardaś) |
| 12 ⁰⁰ -13 ³⁰ | sightseeing programme (for interested participants): National Anthem Museum (Będomin), (mng.gda.pl/muzeum-hymnu-narodowego-w-bedominie) |
| 13 ³⁰ -14 ¹⁵ | lunch |
| 14 ¹⁵ | farewell |

PhD poster session:

1. *Coupled Lagrangian-Eulerian algorithm for simulating biomass conversion in a moving bed* (B. Adibimanes)h)
2. *Qualitative CFD validations of the wet combustion chamber* (M. Bryk)
3. *A comparative study of spectral finite element method and classical finite element method in heat transfer problems via applications of nano and hybrid-nano fluids* (M. Hafeez)
4. *Two-dimensional numerical simulation of a single wood particle pyrolysis considering energy balance and mass conservation equations* (P. Hercel)
5. *The influence of a differencing scheme on interface capturing in the self-impingement of water jets* (B. Kaźmierski)
6. *Experimental and numerical analysis of vortex shape in unbaffled stirred tank* (T. Płusa)
7. *Experimental validation of a large batch of acetone heat pipes performance during the melting process of coconut oil* (M. Rogowski)
8. *Comparative analysis of impingement characteristics of flash and non-flashing sprays* (R. Thokala)
9. *Study of solidification front thickness in a thermal energy storage module* (M. Saqib)
10. *Utilizing virtual mesh to enable fully resolved CFD-DEM simulations of coarse-grained slurries comprising non-spherical particles* (O. Studenik)
11. *Simulating unsteady, compressible, two-phase flow through a rocket injector channel using 1D model* (J. Szyborski)

Regular poster session:

1. *Numerical computation of droplet collision statistics in turbulent air considering many-body aerodynamic interactions and short range non-continuum lubrication forces* (A. Ababaei)
2. *Refractory effects on heat transfer characteristics in an industrial CFB reactor* (A. Błaszczuk)
3. *Determination of bubble diameters on the developed surface with minichannels partially filled with foamed copper during pool boiling* (N. Dadas)
4. *Simple analytical considerations on a multiphase flow in a Venturi orifice applied for gas dedusting* (O. Dolna)
5. *Some practical remarks on the investigation of gas and solids distribution in the furnace of a commercial CFB combustor* (R. Kobyłecki)
6. *Studies on light-ablated noble metallic nanoparticles in a flow pipe in reference to energy and biomedical performances* (P. Radomski)
7. *The concept of passive heat exchanger, combining heat pipe supported by phase change material* (P. Szymański)
8. *Bed hydrodynamics and emission control by improving the cross-sectional distribution of solids and gas – an example practical approach* (R. Zarzycki)